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**AGRICULTURAL SYSTEMS
OF MIDDLE EUROPE**



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AGRICULTURAL SYSTEMS
OF MIDDLE EUROPE

A SYMPOSIUM

Edited by

O. S. MORGAN

PROFESSOR OF AGRICULTURE
SCHOOL OF BUSINESS, COLUMBIA UNIVERSITY

NEW YORK

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1933

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FOREWORD

The time has long since passed when the American farmer could afford to ignore what farmers in other parts of the world were doing. American agriculture is not a separate but an integral part of the world's economic system, and it is always deeply affected by financial, industrial, and social conditions both at home and abroad.

It was with that thought in mind that Congress in 1930 authorized a much-needed expansion of the Foreign Agricultural Service of the Department of Agriculture, permitting us to obtain more precise and more extensive information about foreign crops and markets. It is with much the same thought in mind that I heartily welcome this volume on European agriculture.

You will find in these pages clear and concise statements of the current situation in the surplus agricultural nations of middle Europe. The fact that all of the chapters are written by Ministers of Agriculture or other high officials stamps the volume as authoritative.

I would not leave the impression that the book is a mere statement of facts, however authoritative. Many readers will find most interest in the realistic description the volume affords of the economy, the culture, and the pattern of ideas characteristic of the farmer-peasant majority of middle Europe. We see how the peasant is built into national economic policy and politics.

For some ten years Professor Morgan has been preparing for this sort of symposium on European agriculture. In recent years he has become intimately acquainted both with the agricultural problems and the agricultural leaders of Europe. He is therefore particularly well fitted to select the contributors to this volume and to supervise the editing and publication of it.

ARTHUR M. HYDE, *Secretary,*
U. S. Department of Agriculture.

PREFACE

This book attempts to contribute authentic agricultural economic summaries of national agricultural programs and policies of Central European states. It is the combined result of the labors of busy agricultural officials and the editor. It is hardly the composite voice of the respective nationals, but it represents fairly, with a minimum of political and nationalistic effusion, the voices of authoritative spokesmen.

This symposium is not designed as a textbook for students of agriculture and agricultural economics. Rather it is offered as a source book for agriculturists, economists, politicians and other students of economic and social phenomena. It is hoped it will serve as valuable collateral reading in college courses devoted to the study of national, agricultural, economic and political policies. As such it will be used in connection with graduate courses in agricultural economics in Columbia University.

In acknowledging my thanks to those who have aided me materially in this work, I wish first to express my deep appreciation to the collaborators who have very generously contributed their respective sections of the book. Every one of these agricultural authorities has abetted my proposal of the symposium in a fine spirit of internationalism. Every one has subscribed to the principle of the pre-eminence in national and international policies of rationalized economic procedure.

Thanks are due Professor Asher Hobson, University of Wisconsin, who at the inception and at various stages of the work gave encouraging and valuable suggestions. I am indebted to Dr. Louis G. Michael, Agricultural Attaché, Belgrade, Yugoslavia, for his "Agricultural Survey of Europe" bulletins, suggesting to me, as they did, the need for such a symposium as is herewith presented. Mr. L. A. Wheeler, Head Economist, in charge of the Foreign Service of the Bureau of Agricultural Economics, Washington, D. C., gave generously of his time and facilities, as did also Mr. George L. Crawford, Senior Agricultural Economist, Division of Cotton Marketing, of the same Bureau. To Mr. J. Barnard Gibbs, Assistant Agricultural Commissioner, of the Belgrade office of the Agricultural Attaché, I owe special thanks for forwarding this work in Bulgaria, Rumania,

Hungary and Yugoslavia. Both Dr. Michael and Mr. Gibbs have greatly helped me in effecting satisfactory translations of the Yugoslavian and Hungarian sections. The office of the Consulate General, Budapest, as especially represented by Mr. John J. Ronto, has rendered me valuable service. Mr. Loyd V. Steere, Agricultural Attaché, American Embassy, Berlin, gave me unstintedly of his time and facilities in my work in Germany, Denmark and Austria. In Poland my efforts were greatly facilitated by the Warsaw offices of the American Embassy and Consulate General, Consul General Jermone J. Huddle and Consul Stewart E. McMillin cooperating most helpfully.

In Bucharest, Rumania, my contacts were efficiently promoted by Dr. D. Andronescu, Chief of the Laboratory for Plant Breeding, Milling and Baking, and national Director Const. J. Ciulei, Union of Chambers of Agriculture. Professor D. Atanasoff, Agricultural Faculty, University of Bulgaria, Sofia, was most generous and effective in establishing Bulgarian contacts for me. The desired guidance in Greece was effected through Mr. M. J. S. Caramanos, Director-General of the Ministry of Agriculture, Athens, and Mr. H. B. Allen, Director of Education, Near East Foundation, Salonica.

Dean R. C. McCrea and Professor J. Russell Smith, School of Business, Columbia University, have contributed helpful suggestions. On the map aspect of the work I have had valuable assistance from Prof. Armin K. Lobeck, and from Mr. Russell D. L. Valentine, special assistant, Department of Geology, Columbia University. I am deeply indebted to Mrs. G. E. Villâret, Leonia, N. J., for contributing the translation of the chapter on Rumania. My students and secretarial staff of the University have given substantial help in the preparation of the manuscript.

My wish to take a hand in this sort of thing has been greatly stimulated by familiarity with the inspiring accomplishments in international affairs of President Nicholas Murray Butler. His encouragement of my efforts in the foreign field of endeavor has often reassured me that current difficulties were worth overcoming. I am especially grateful to Professor James C. Egbert, Director of University Extension, former Dean and Director of the School of Business, Columbia University, for the many courtesies he has extended to me in connection with this work.

The importance to this symposium of my many opportunities since 1925 to serve the Near East Relief, latterly the Near East Foundation, in the Near East cannot be overstated. Prof. Charles P. Berkey, head of the Department of Geology, Columbia University, has stimulated my efforts by important suggestions. Our University

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committee on the "Institute of Rural Affairs" has furnished the immediate urge to undertake this work. To Dr. L. C. Gray, in charge Division of Land Economics, Bureau of Agricultural Economics, United States Department of Agriculture, I express hearty thanks for helpful suggestions and encouragement.

Finally, I wish to pay special tribute of appreciation to Mrs. Morgan for her staunch help and inspiration throughout every phase of preparing this work. The varied assistance she rendered in the survey field entitles her to large credit for the virtues of the symposium.

O. S. MORGAN.

COLUMBIA UNIVERSITY,
NEW YORK CITY,
September, 1932.

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INTRODUCTION

A chief problem confronting all lines of productive endeavor is how to diversify constructive human effort so as to provide a satisfying level of living for the respective service-rendering groups. It is generally recognized that this problem is acute in the agricultural industry. The business engineer, the agricultural economist in this case, advises that the various segments of the industry be programized, rationalized, to correct alike surplus and deficit enterprise.

The initial step in correcting maladjustments is to ascertain the pertinent facts. In agriculture discovering pertinent facts of the industry is a disconcertingly big job. Furthermore, the best statistical evidence in many agricultural fields fades into lukewarm history so fast that the economist despairs of ever mapping the world field. Yet that the work must be done sometime is the conviction of agriculturists and economists. This symposium is a contribution to the beginning, being made on one sector of the world field.

Many aspects of the work have been analyzed, especially in countries where modern agricultural technique prevails. Attempts at analysis of national agricultural policy are sometimes made by the transient visitor. But language impediments, unfamiliarity with local customs, the magnitude and complexity of the agriculture for even a small foreign state — of less than the average size of an American commonwealth — all combine to make a reliable analysis by a foreign visitor improbable or impossible. The time will come, and the editor hopes soon, when a creditable analysis of the agricultural policy of a foreign state, for example, Bulgaria, by an American will be practicable. This book, it is expected, will help toward such a desideratum.

Preliminary to such a study, it has seemed that a beginning should be made by securing the coöperation of agricultural authorities of selected states, the study thus prosecuted to be directed by an American, the details to be treated with the utmost possible accuracy by selected experts perfectly familiar with language, customs, history, and outlook. In pursuance of this idea, the editor selected a contiguous group of middle-eastern European states. The collaborators are men quite familiar with the agriculture of their respective countries.

The collaborating authorities are or had been either state ministers of agriculture or officials high in the national agricultural administration.

Middle European states were selected for this alignment of studies in agricultural policy for obvious reasons: Several of the states have been compelled to reconstruct their agricultural policies since the World War. Several of them are active competitors of America in European agricultural markets. All of them are deeply interested in being fairly and specifically understood by American agriculturists. All of the leaders conferred with and collaborating in this work are thoroughgoing advocates of economic, as precedent to political rationalization. Furthermore, this series of studies will be supported by the quite separate but correlated field work conducted by the Foreign Agricultural Service, Bureau of Agricultural Economics, United States Department of Agriculture, with offices in Berlin and Belgrade. This last-named point insures the durability of the several contributions, inasmuch as the weekly reports, "Foreign Crops and Markets," of the above Service, will keep factual data fresh. Hereby the agricultural foundations and structure supplied by this work can be redone in surface facts from this current material.

The editor has another though marginal reason for selecting these countries, namely, a conviction that agricultural rehabilitation in Europe is more likely to develop in and pivot around these countries as an economic unit than in or around countries that are more stable politically or economically, or both. The acute distress among the agricultural class in these countries leads to evolution and subsequent revolutionary changes. These changes will be primarily constructive for the states involved, though hardly less for uninvolved neighboring states.

As a concluding reason for selecting these middle European states for study, there appears to be an under-emphasis in extant and available agricultural literature on the programs and policies of these states. The symposium device adopted has seemed to the writer to be an initial step in presenting comprehensively and succinctly diverse policies.

The method followed in securing the coöperation of collaborators was briefly this: The editor in 1931 attended the XV International Congress of Agriculture at Prague, and the IX International Dairy Congress at Copenhagen. In these foregatherings of agricultural leaders he made many valuable contacts, meeting several of the national leaders who subsequently agreed to contribute chapters to this symposium. Besides studying Czechoslovakia and Denmark, he visited similarly Poland, Rumania, Bulgaria, Yugoslavia, Hungary,

Austria and Germany. Having spent an entire summer, 1927, surveying agriculture in Greece for the Near East Relief, he did not revisit this country, but depended upon acquaintances then made to effect satisfactory connections. By this means he was able to meet and confer with six of the eight chief collaborators; the others were secured through correspondence after his return to America in the fall of 1931. Each collaborator was given a standard outline to base a 20,000-word chapter on his country. The outline was by way of suggestion as to chapter content as well as sequence of topics treated therein. It was requested that the material be factual, technical rather than popular, and that authors control any tendency to introduce nationalistic propaganda. The editor asked to have the chapters in hand, completed and in English, by January 1, 1932. Several of the collaborators were unable to comply with this stipulation, resulting in a postponement of publication of over six months.

The submitted outline follows:

1. Physical factors — latitude, climate, topography, soils.
2. Population — especially agricultural population.
3. Land utilization — forests, pastures, crops, waste.
4. Brief history of agriculture, 1918-1931.
5. Land reform — estates, strip farming, consolidation.
6. Production and techniques — mechanization.
7. Marketing and marketing program — export and import regulations, price stabilization, transportation.
8. Agricultural coöperation of various sorts and sizes.
9. Taxation, insurance (especially interest rates).
10. Agricultural education, including popular.
11. Farmers in politics — farmers' unions or societies.
12. Farmers' income — gross, net.
13. Outlook for agriculture and farmers.
14. Special economic developments not included in above.
15. Pan-Europa, customs unions, etc.
16. Appendices — brief bibliography, statistical tables.

The editor has had to exercise his judgment in many instances, not as to fact but as to English form and statement. This has resulted in practically re-writing four of the chapters. There is necessarily some unevenness of treatment. Statistical matter has been included generally as submitted by authors. In many instances extended tabular material has been condensed, even omitted. Omissions of material have been largely due to lack of conciseness in statistical form as presented in the original manuscript. Condensa-

tion has been made in a few cases where the tabular matter was deemed vital and allotted space permitted.

It is the editor's plan that this book shall be the forerunner of a series of separate books on the agriculture of the countries herein represented. Such a plan is in part explained by reasons cited above for studying middle European states. The editor feels justified in preparing further separate studies on these added bases: These countries taken as a unit are dominantly agricultural. Not one of these states has so low a percentage of population gainfully engaged in agriculture as has the United States. Therefore, the deficit markets of Europe have in these states at their very side doors, a potential source of cheap farm produce — when and if these middle European states put in motion an agricultural technic that compares favorably with modern technic.

In further support of the need of reciprocal understanding among European and American agriculturists this area of approximately one-fifth of the extent of continental America and five-sixths of the population of the United States is for the most part dominated by relatively conservative and agriculturally self-satisfied technical and political leadership. In an effort to appraise the exigencies of competition, actual and potential, American agricultural leaders should become intimately acquainted with these actual and potential European market competitors. On the other hand the agricultural leadership of this European area should get, in the humble opinion of the writer, much more intimately acquainted with western world agriculture. By contributions of the order made by the authors of the ensuing chapters, it is hoped stimulus will be given to consummate the reciprocal understanding.

The editor's controlling motive in his labors has been, not to add another book to the crowded library stack, but rather to contribute substantially through this symposium toward a clearer and more sympathetic understanding among European and American agriculturists. A few exceptional leaders in both America and middle Europe may have a fair working knowledge of both home and foreign agricultural systems. Not however until this intimate and accurate knowledge becomes much more general among the leadership will this leaven leaven the whole lump of ignorant indifference.

The editor of this symposium is frankly in favor of Pan-Europe as an economic necessity. Politics, traditions, national fears and jealousies are threshold obstacles to the consummation of this obvious necessity. But a United States of America is the logical pace-setter initially of economic, and eventually of complete rationalization of

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continental Europe. Superficially, customs unions and federations among European states constitute obstacles to American agriculturists. Fundamentally such reasonable procedure must directly or indirectly in the long run enhance level of living and so purchasing power, the economic rebound of which inevitably must advantage every producer of demand and service goods. The logic of this position is that agriculture shall take its part in a world economic union.

An introduction to this symposium need not be extended, inasmuch as the authors of the following chapters are clearly articulate on a plain if expansive theme. Maps are included to indicate approximate national boundaries and to locate chief geographic details referred to in the respective sections. Tables of Contents will serve as general indexes.

THE EDITOR.

CHAPTER ONE

THE AUSTRIAN AGRARIAN POLICY

BY

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FORMER MINISTER OF AGRICULTURE AND FORESTRY

AND

DR. ANTON STEDEN

INSPECTOR OF THE CHAMBER OF AGRICULTURE
IN LOWER AUSTRIA

VIENNA, AUSTRIA, DECEMBER, 1931



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THE AUSTRIAN AGRARIAN POLICY

I. THE DEVELOPMENT OF AGRICULTURE FROM 1918 TO 1931

In considering all the problems and circumstances connected with Austria, we must not forget that Austria of today has been suddenly detached from an economic body, the centuries-old Austro-Hungarian monarchy, after the outrages of a war lasting for more than four years, and has to face a situation unique in modern history. The former Austro-Hungary had nearly fifty-two millions of inhabitants, and, considering its self-sufficiency regarding food and raw materials might have been called an ideal economic body. The Austria of today has about six and seven-tenths millions of inhabitants, and consists four-fifths of mountainous country and the spurs of the Alps. It has but eight per cent of the arable land, seventeen per cent of the forests, and twenty-five per cent of the unproductive lands of the former Austria.

As to its geo-political position, Austria forms the border between western and eastern Europe. In its culture closely connected with the west, it has a lively economic intercourse with the east. The dominating position of the German part of Austria in the former Austro-Hungarian monarchy was not due to agricultural and industrial production under especially favorable conditions, but to its position as the center of a large empire. The metropolis of Vienna could only develop under those circumstances. The growing capital was not only a spiritual, but also an economic center.

Vienna, with the German districts of industry in Austria, and the industrial centers, now belonging to Czechoslovakia, formed the western territory of demand; the agricultural east of the monarchy, the territory abounding in agricultural products.

In a development of centuries the economy of Austro-Hungary had adjusted itself. Austria produced ore, coal was brought from Bohemia and Silesia; in Austria the spinning was done, in Bohemia and Moravia the weaving; Galicia had plenty of petroleum; Hungary produced wheat and beef cattle, in exchange for wood, industrial products and breeding cattle. The Austrian alpine regions with their surplus of cattle and wood and the western industrial regions satisfied these wants. In the districts surrounding Vienna, in Bohemia, Moravia

(now Czechoslovakia), and in the western part of Hungary a flourishing finishing economy developed, which supplied the market with sugar, vegetables, fruits, milk and fattened cattle. The districts with an unfavorable traffic position produced the raw materials, the cereals and lean cattle.

Then came the catastrophe of the great war, followed by the parcelling out of Europe. In a territory of the size of the United States, twenty-eight separate states are existing at present, each of them with its own coinage, its own customs system, and all endeavoring — some leading, the others following — to make their political economy independent by prohibitive regulations. Economic result: ore is cut off from the coal; spindle from the weaving-loom; refining factory from the fields of raw materials.

POST-WAR POSITION OF AUSTRIA: After the separation from the former monarchy, by which the city of Vienna with two millions of inhabitants remained to the new small state, Austria had to import agrarian products and industrial raw materials, for which it had to pay by the export of wood and of factory-made articles. The position of trade and commerce at the close of 1918 differed therefore in many respects from that of agriculture, though it was quite as difficult. Trade and commerce had naturally concentrated for the most part in Vienna or its suburbs, augmented during the war by the establishment of several large industrial concerns. As the other parts of the former monarchy separated, one branch of industry after another was cut off from its market. To accomplish a complete transposition would have taken enormous sums, monies hard or impossible to procure. As the old commercial connections were again and again disturbed, and new ones were with great difficulty formed, the transposition was bound to be an imperfect one, and industry and commerce were forced to reduce themselves.

Considering agriculture, we must first of all point out that most parts of present Austria, especially its mountainous regions, had been neglected under the old monarchy, the inhabitants of which had had at their disposal as areas of production the rich corn and sugar-beet districts of Hungary, Czechoslovakia, Galicia, etc. During the war the agriculture of the whole territory had been badly affected. The lack of management, the impossibility of executing upkeep and repairs, the requisitions of grain, cattle and feed had greatly weakened its productive power. An attempt to exploit the soil was necessary in order to become more independent of foreign countries in the supply of food. Here, too, transposition had to be executed, for which the necessary means were even less at hand than in industry.

The admirable increase of production which took place in the space of a comparatively few years, in spite of all the difficulties, must be ascribed, above all to the diligence and ability of every single farmer, but also to the agricultural organizations and the various authorities of state, laboring to promote production.

We anticipate that the situation of agriculture is, in connection with the world crisis, about to show a new aspect. The question now is no more solely the promotion of agricultural production. That had been a continual one; according to the yield of the crop, in some branches of production greater, in others smaller. The question had broadened to the sale of produce, i.e., the fixing of prices.

Production, in agriculture, as in all other branches of political economy, is a matter of lucrativeness. The lucrativeness of post-war Austrian agriculture has been sinking successively from year to year, and has now reached an especially low position. To secure lucrativeness and with it the possibility of providing the largest amount of necessary food from the soil, farm prices must obtain which correspond closely to the costs of production. Since the neighboring states, especially the eastern ones, in consequence of a generally lower standard of farm life and the lower taxes, can produce much cheaper, a tariff wall had to be erected. The tariff act of January 1, 1925, levies very moderate or low rates with respect to agricultural products. At that time it was Austria's hope by a good example to move neighboring states to refrain from erecting insuperably high tariff walls, — but she failed. The agriculture of the neighboring states also developed quickly and strongly. Since Austria (especially Vienna with its 2,000,000 population situated on the eastern border) was the natural market for these countries, the competition was keenly felt. Meanwhile the export of industrial products became more difficult or impossible. It is only in the very last year or so that a more effective protection of the agricultural products has been obtained. But that was only after prices had reached so low a point that even the high tariff cannot, except in a few instances, insure prices corresponding to costs of production.

AGRARIAN PROBLEM OF TODAY: Since agriculture has partially recovered from the war and the immediate post-war years, showing thereby unexpected ability, the question of protecting it from the competition of countries producing at lower costs was a constant problem to parliament and government. For, export into eastern and southern agrarian states is of great importance to Austrian industry, as reciprocally Austria is the export-market for agricultural products of those countries. To find the balance of interests is an extremely

difficult problem, the more so as the great states of western Europe refuse to sanction a system of preferential import duties, as breaking the system of the most favored nation treaties. Austria has been trying to strengthen its commercial connections with some states by introducing the project of favored credits, as discussed in the League of Nations. On this basis a treaty with Hungary has been made; with Italy such an agreement has been drafted but not yet ratified.

The development of the year 1931 may be characterized by saying that the importation of agrarian products, in consequence of the continual reduction of prices on the world-market, is weighing heavily on the Austrian products. This is true despite regulations of import and export duties. It is, therefore, quite clear that the farming population makes the request, because of absolute necessity, to regulate strictly by creating monopolies or by other institutions the import of agricultural products. The acute financial and currency crisis, from which Austria like most of the European countries is suffering, shows the whole problem of trade connections in a new light, in so far as the necessity of a state control of foreign values exerts a major influence on importation.

Before entering into the question of the separate branches of production, let us compare domestic production with the necessities of import. Rye: The consumption of rye is large. Austria produces the greatest part of its need, so that the necessity for import is small. Wheat: From 40-60%, according to the crop, must be imported. Sugar-beet: An especially great rise in domestic production has occurred. Where only 10 years ago about 8% of the needed amount was produced, now more than 80% of requirements is produced. For potatoes a similar rise may be noticed, in which product there is even a surplus. The normal need of fruits and vegetables can be supplied in the country; in good years there is even an exportable surplus, e.g., of apples. The necessary importations consist of foreign specialties only, and of products which by reason of climate are introduced at an earlier season.

CATTLE AND MEAT: Austria has a surplus of cattle for breeding but lacks high quality beef cattle. The reason for this is that Austria does not produce sufficient feed stuffs; while the neighboring states, chiefly grain-growing countries, can produce beef cattle cheaper. Further, reduction of the purchasing power in the neighboring states, especially in Germany, has resulted in such low prices for breeding and draft cattle as to threaten the existence of cattle farmers, chiefly in the Alps, who depend almost exclusively on cattle breeding. Government and all interested groups are urging through various regula-

tions that more cattle be fattened and consumed in the country, in order that Austria become more independent of the need of (a) export breeding and draft cattle and (b) import of beef cattle. In November, therefore, a central cattle-selling commission was created. It has to regulate the trade of beef cattle meat and meat products by keeping up a sufficient market supply and to try to obtain a satisfactory sale of the domestically produced beef cattle at remunerative farm prices. In the half year of its existence this institution has fulfilled all expectations of its sponsors. Dairy farming has developed much better since it has been possible to change the large milk, butter, and cheese deficit of a few years ago into a surplus of some importance.

Quite different from the position of crop and livestock husbandry is that of forestry, as will be shown below. In this respect Austria is an export country. The export of wood forms one of the most important assets of our country, and the economic crisis has had a bad reaction on this field of production, so that the position of forest-culture is an especially critical one.

Regarding the questions of currency and commercial policy, Austria, imitating other European states, has enacted prohibitions on the importation of certain agrarian and industrial products, beginning May, 1932. A special system of import permits has been initiated. Among the restricted, not prohibited, articles are the following: beeves, calves and pigs, poultry, butter, goose-fat and suet, lard and bacon, wine and cider, meat, cheese, sweetened condensed milk and dried milk.

2. AUSTRIAN DISTRICTS OF AGRICULTURAL PRODUCTION

Austria is situated between $46^{\circ} 30'$ and 49° N. latitude, and between $9^{\circ} 30'$ and 17° east of Greenwich. It consists of the territories formerly designated as Austrian alpine countries, and is for the most part a mountainous country. The eastern Alps on the south of the Danube and the hilly country at the edge of the Alps are the determining features of its surface. North of the Danube are primitive rocks grading on the east into a hilly country, and finally a plain.

With respect to its climate, Austria belongs to the territory of transition between the west-European climate, high in precipitations with mild winters and relatively cool summers, and the drier climate of east Europe with its colder winters and hotter summers. The climate of a large part of the territory is determined by the Alps.

Climate, geological conditions, and the features of its surface influence the soil formations. One soil type developed under the influence of the wet and cool climate of the forest-clad mountains, another in the dry climate of the east resembling in some parts steppes. In the former a leached soil was promoted, in the latter a black soil rich in humus. On the whole the mountain slopes have a poor soil, the base of the mountains and the valleys deep heavy soils. All kinds of soils are found in the lower hills and plains, though strong soils are not very frequent.

If, for the sake of brevity, we do not consider the minor differences, we may distinguish four main natural regions of production: (1) The *alpine* region (the high Alps and spurs of the Alps) includes the central Alps of primitive rock, and the northern and southern chalky Alps. The Austrian Alps take a direction from west to east from the Swiss border, and end in a little curve from north to east in the Wienerwald at the Danube. The alpine region belongs to the part of Austria which is rich. The annual precipitations are high, the quantities lying between 1000 and 2400 mm. Winters are cold with deep snowfall; summers are cool. Great temperature fluctuations are characteristic. Depending on the situation of the valleys and slopes there are wide local differences of climate. The damp, cool climate and the steep aspect favor the cultivation of grasslands and woods. Agriculture of the alpine region supports cattle-breeding and forestry culture. (2) The spurs of the Alps constitute a region of plains and hills between the northern border of the Alps and the Danube. Its climate belongs to the zone of moist west winds, and is therefore cool and high in precipitation. The agricultural areas are 250-500 m. above sea-level. The annual precipitation of 550-1000 mm. shows great variations, and increases from the southern bank of the Danube to the Alps. Meadows and pastures in addition to small grains culture find place on farms in this region. (3) The massif of primitive rocks on the northern bank of the Danube belongs to the spurs of the Böhmerwald, and consists for the greatest part of an undulated plateau 450 to 900 m. and more above sea-level. In some parts it takes the character of a mountainous country. In the east it slopes towards the hills of the vineyard regions. The climate is moist, cool and harsh; from west to east average temperature increases, and precipitation decreases, the latter varying from 500 mm. in the east to 900 mm. in the west. The growing season is short, the winters long with high snowfall. Woods and meadows prevail. The chief products of field agriculture are the commonplace crops: rye, oats, and potatoes.

(4) The eastern region containing Austria's greatest level area, is a land of hills and plains, 140 to 300 m. above sea-level. In consequence of the ranges of mountains protecting the region from the east, the climate is dry, bright and warm. The average annual precipitation is 500-800 mm. with spots having but 450 mm. Regular periods of drought in the early spring and in autumn are characteristic, besides occasional periods of high temperature and drying east winds. That is, here is approximated the continental climate. On the hills there is extensive cultivation of vineyards from which is produced a wine of high quality. Meadows are in the background; in the foreground tilled lands of grain, maize, potato, and sugar-beet.¹

LAND UTILIZATION

According to the official statistics² of cultivation and harvest in 1930 the largest area is occupied by woods, covering 37.41% of the total; next in extent are the grasslands (meadows, pasturages, alpine pastures), covering 27.55%; the third is the agricultural crops with 22.94%. If we consider the cultivation of food on fields, the amount of that area occupies more than 33%, which points to the importance of cattle raising. The great amount of unproductive soil is explained by the prevalence of mountains. Of arable land, grains occupy 59.15%; crops for feeding (including meadows in rotation) 21.05%; hoed crops 15.10%; other field crops 2.74%; and fallow grounds 1.96%.

THE TRANSPORTATION PROBLEM: Vienna, the capital, is Austria's center of traffic. In this big consumption center lie great possibilities

¹ The area of the regions of agricultural production is as follows:

	Area—ha.	Area—%
Alpine	5,218,173	62.2
Spurs of Alps	832,137	9.9
Massif	738,015	8.9
Eastern region	1,597,355	19.0
Total area	8,385,680	100.0

² The classes of land uses follow:

Fields	1,923,764 ha.	22.94%
Meadows	962,584 "	11.48%
Pastures	1,347,968 "	16.07%
Gardens	88,104 "	1.05%
Vineyards	34,920 "	0.42%
Woods	3,136,730 "	37.41%
Unproductive grounds	891,610 "	10.63%
Total	8,385,680 ha.	100%

for an enlarged market of Austrian agrarian products, as the greatest part of imported agricultural products comes to Vienna. The capital is not central; in consequence of new boundaries it is only 60 km. from the eastern border, but 750 km. from the western border, which must be called unfavorable.

Austria has only one navigable river, the Danube, which flows from west to east, through the forelands of the Alps and the eastern plain, and is of great traffic importance to the states of southeast Europe. The chief railway lines run east and west, and north and south, intersecting in Vienna.

The heaviest traffic is to be found in the west, in the northeast, and in the south of Vienna. Favorable conditions with respect to traffic extend over the eastern region, and over the Alps spurs. Farms in the neighborhood of Vienna and the smaller centers of industry and consumption are the best situated due to good transportation; the alpine regions and the massif are the least favorably situated. These differences respecting the chief market have, of course, great influence on farm management and on the agricultural enterprises.

The regional branches of agricultural production vary considerably. The eastern region, and the Alps spurs are chiefly arable lands. Two-thirds of the tilled land are in these two regions, which together comprise but 30% of the total land area. The center of grain-growing is here, too, as 65.5% of the corn crop is in this region, while 90% of the beet-root culture is in the eastern region, and 10% in the Alps spurs. Potato culture is distributed in the following way: 48% is in the eastern region, 20% in the massif (the poverty of lime found here is favorable for potatoes), 16% in the spurs of the Alps, and 16% in the alpine region. The vine is grown in the eastern region where the climate is favorable. The cultivation of vegetables chiefly concentrates in the plains of Lower Austria, surrounding Vienna, and in the Burgenland.

In the alpine region grasslands and forest-culture are predominant: 57% of the meadows, 91% of the pastures, and 73% of the forests are in this region. Founded on this natural food supply, an excellent cattle-raising technique has developed. Dairy farming extends over all Austria, as one of the most important branches of production: whole milk sale and butter production in the eastern region, butter in the massif, and butter and cheese production in the alpine region. Swine raising is of increasing importance. The eastern region, the Alps spurs, and the southern part of the Alps (Carinthia) are the regions which chiefly supply the market with pigs.

3. POPULATION AND DISTRIBUTION OF LAND

According to the latest census, March 7, 1923, Austria had 6,534,481 inhabitants. They belong to the following professions (workers including their families): 29.9% were in agriculture and forestry; 33.6% in industry and trade; 16.1% in commerce and traffic; 3.3% in domestic service; 6.0% in civil service and free professions, and 11.1% professionless (including non-enumerated and those preparing for professions not living with their parents).

The enumeration covered 3,342,996 people working in their trades and professions. In this number are not included the members of the family who do not work, housewives, unemployed, and the last group cited in the foregoing paragraph. Agriculture and forestry comprised 42.7% of the workers, industry and trades 30.2%, commerce and traffic 15.5%, domestic servants 5.3%, and civil servants and free professions 6.3%. The farming and forestry group is the largest of the professionally active people. Distribution of professions as well as other figures of economic life indicate that Austria is an agricultural-industrial state.

Analysis of the 1,426,238 agriculture and forestry workers shows: 23.1% owners and tenants (328,831), 42.7% assisting members of the family (609,829), 0.5% clerical employees (5,590), and 37.7% workmen and apprentices (481,988). In the relatively large number of the assisting family members is expressed a dominant characteristic of Austrian peasant agriculture. The census of agricultural holdings confirms this. The following are the chief data of the latest census, June 14, 1930, concerning classes of agricultural and forestry holdings. Arranged in 9 classes the 7,604,518 hectares fall into 431,576 farms as follows:

<i>Size in hectares</i>	<i>Number of holdings</i>	<i>Total area in ha.</i>
Below 2 ha.	118,422	112,375
2-5	97,771	325,642
5-10	75,729	544,975
10-20	73,118	1,058,510
20-50	52,521	1,541,504
50-100	8,177	553,765
100-200	3,113	445,058
500-1000	520	372,159
1,000	549	2,124,837
	<hr/>	
	431,576	7,604,518

If we consider of the foregoing only the agricultural area, not more than 6% is in large estates, i.e., estates that hire managers. It is different in forestry, where about 44% are large estates. This

condition made impossible an agrarian reform, executed subsequent to 1918 in most of the neighboring states.

COMMASSATION: There are, to be sure, some laws which serve to consolidate¹ peasant holdings. The Recolonization Law of 1919, which is no longer in force, had as its object either to create new promising peasant estates from small farms and parcels of land which had, in their turn, been bought up from large landowners, or to give renewed support to already existing peasant holdings through the distribution of land. The law concerning trading in real estate is intended to prevent wholesale purchase of agricultural properties by speculators or by persons who are offering no guaranty of efficient management. The task of the law for the protection of leasehold farmers is to prevent the small tenant farmers from being deprived of their leased parcels of land without valid reason. In conclusion, there are still a number of laws connected with the regulating of subserviency of property, viz., with the regulating of the servitude law connected with property, especially of the rights connected with the growing and and cultivation of forests and the rights related to pastures in the mountain ranges, which are vitally important to the peasantry of those areas.

Considering the case of the estates, the large estates are entirely consolidated. The peasants' farms in the valley bottom lands of the alpine region and farms in the Alps spurs are for the most part consolidated lands. In the other regions consolidation does not prevail. However, in the regions with much cultivation of sugar-beet the commassation of lands to closed farm sites is proceeding.

4. PRODUCTION AND SALE

As has been shown in the section on the natural conditions of production, the different soil and climatic conditions necessarily make a multi-phased agriculture, unlike that obtaining in countries with more uniform condition of production. Following is given a description of the development and of the state of the various branches of production, and in addition marketing and sales organizations. Thus to consider the complex situation seems constructive, since promotion of production and execution of sale are inseparably connected.

¹ The expression "closed lands" (*geschlossene Grundstücke*) is used to express the fact that all the lots (allotments) of a landowner which represent the economic body of the estate form also an undivided unit according to space. The contrary of it is called "dispersed lands" (*Gemengelage*) which means that the lots of a landowner are situated in the same district, but not connected with one another. This kind of landed property represents an historical relic of the former (medieval) collective property of the inhabitants of a district.

SOIL AMELIORATION: Though the increase of production by better cultivation of the soil, by manure, and by the use of seeds of high quality has been attained, and may be pushed still further, yet this process has certain limits. Another possibility for increasing production consists in the cultivation of grounds hitherto uncultivated. In Austria an area of about 300,000 ha. may by drainage be changed into arable soil of high quality. About 100,000 ha. of pasturage may similarly be turned into crop land. Since 1927 about 20,000 ha. of unproductive soil has been changed into high quality arable ground by large-scale cultural methods. Drainage of about 10,000 ha. was put through from 1918-1924, and of more than 43,000 ha. additional from 1925-1930. A fact worthy of notice is that in the 18 years before the war but 42,000 ha. were drained, less than in the later 6-year period. At the present time draining and reclaiming of land has great importance not only because of raising the yield and production, but also because of the unemployment problem.

GRAIN CROPS: In striving to become independent of the importation of potatoes and sugar-beet, and to promote cattle breeding in the post-war period, a great increase in the cultivation of hoed and forage crops took place. Thus the post-war area devoted to growing corn was contracted. The total grain production, however, increased, and through intensification of culture the yields per hectare were raised above the pre-war level.¹

By careful and extended experiments, and by many variety tests important improvements in quality and yield have been obtained. For example, a prolific variety of high-quality winter wheat from Upper Austria was obtained which surpassed the average price of the other varieties of wheat by 30 Schillings per ton. Besides, Austrian barley of high quality has been welcome in foreign markets.

The most extensive grain-growing district is Lower Austria, Upper Austria ranking second. In Lower Austria the sale of corn is transacted through storehouses of the coöperative societies, in Upper Austria by these storehouses and a market place. To these agencies Austria owes a considerable easement of the sale crises of 1929, 1930 and 1931.

BEEF-ROOT CULTIVATION AND THE SUGAR INDUSTRY: The post-war demand for sugar was for the greater part satisfied by importa-

¹ The increase in grain production, 1922-1930, was:

	In 1000 M. tons		In % (1922 = 100)
	1922	1930	
Wheat	202	327	162
Rye	345	524	152
Barley	122	267	220

tion. To enable Austria to supply herself with sugar the production of beet-root was intensively promoted in the plains of the Danube and near the eastern rivers. These areas are ideally adapted to sugar-beet culture. As a consequence of this policy the crop area¹ has been trebled and about 85% of the national requirement of sugar is met. The area devoted to the cultivation of sugar-beets is distributed in 3 regions with 74% in Lower Austria, 15% in Burgenland and 11% in Upper Austria.

The steady decline of the world market prices for sugar repeatedly endangered the cultivation of sugar-beets, but continued beet growing has been made possible by an able management of the prices for beet-root. Throughout the period the purchasing power of the population has been considered. Seven sugar factories exist in Austria (six have refineries) with a daily capacity of 10,000 tons of beet-root. Four of these factories were founded in the last century (1850-1860), two at the beginning of this century, and one in 1929. The foregoing shows that the policy of becoming self-sufficing as to sugar in the interest of economy and of agriculture is being consummated. The next step is to attain the total sugar requirement by a complete development of production (excluding a surplus) as soon as credit conditions permit. This remarkable program could not have been executed if the beet-root farmers had not been organized in beet-root farmers' unions, whose duties are to raise the technique of beet-root farming and to represent the interests of the beet-root farmers.

POTATO CULTURE: The severe lack of Austrian-grown potatoes in the early post-war period was removed by increasing the cropped area and by intensifying culture, the latter resulting in a great rise in yield. By these measures the production of potatoes increased from 1.4 million tons in 1922 to 2.7 million tons in 1930. The potato crop of 1931 is estimated at about 2.4 million tons. The reduction in comparison with 1930 is explained by the unfavorable weather conditions in the vegetative period. The present production of potatoes is about 70% higher than pre-war.

In order to improve the cultivation of potatoes and to utilize the surplus, a number of agricultural coöperative societies for distilling have been founded: these guarantee the utilization of potatoes to the

¹ Sugar-beet culture has developed as follows:

<i>Economic Year</i>	<i>Beet Area hectares</i>	<i>Beet-root Crop in quintals</i>	<i>% of Self-sufficiency</i>
1923-1924	13,000	3,134,000	31.3
1927-1928	23,500	6,581,000	53.1
1931-1932	40,000	10,400,000	84.—

small farmer. At present 60 agricultural distilleries exist in Austria. Since 1922 the number of distilleries has been increased by 22 co-operative distillery societies. The distiller's mash remaining as waste at the distilleries favors the interests of animal husbandry. Every year more than 5,000 head of cattle are kept and fattened by the aid of the so-called credits for masting. Alcohol produced by the co-operative distilleries supplies 30% of the domestic demand; the remainder comes from imported molasses through industrial distilleries. From the agricultural point of view a further extension of the agricultural alcohol production is necessary and lucrative.

VINEYARDS: One of the oldest branches of husbandry in Austrian agriculture is the cultivation of the vine. It goes back more than a thousand years. As a branch of production grape culture requires a special economic interest with an intense work program. Respecting its position it is of great importance as it employs 60,000 families, and could employ some 250,000 people, if the small arable areas, which for the most part do not permit alternative use, were planted out to vines. Area in vineyards, which has decreased since the war, has been augmented in late years. As soon as these new plantings come into full bearing an average crop of 800,000 hectoliters may be expected. This average would surpass by 146,000 hl. the latest 5-year average of 654,000 hl. The products of the vine are important articles of trade. Good domestic crops, and intensive endeavors towards the improvement of wine quality, cause an important reduction of the importation of wine. The Austrian wine cultivation produces chiefly white wines, and the best qualities rival the most popular foreign qualities. Imports of wine amounted to 482,000 quintals in 1928 and fell to 372,000 quintals in 1930.

FRUIT AND VEGETABLE CULTIVATION: The importance and popularity of fruit is increasing from year to year. Though mid-season crops do not at present cover the domestic demand for dessert fruits, Austria produces large quantities of apples and pears for export in years of abundant fruit yields. The surplus can be sold only if it consists of dessert fruit of uniform grade and high quality. To attain this end the plantings of one variety had to be enlarged by appropriate means, e.g., grafting, and the sale of the crop facilitated by uniform grading and packaging.

An increased consumption of vegetables may be noticed from year to year. Rather an important part of the market vegetables, especially the early ones, comes from abroad. To reduce that import, since it is economically and politically disadvantageous, special attention is paid to the technics of cultivating vegetables, especially of

growing vegetables on fields. Truck gardeners are familiarized with modern production methods of faultless early vegetables at the newly erected experiment station in Burgenland. At the same time endeavors are made to facilitate domestic vegetable production by favorable commercial treaties.

CATTLE: Cattle and dairy farming lay the foundation of the entire Austrian agriculture. These branches of husbandry are nearly the only possibilities for production and existence for the alpine regions. By that appears the great national importance of these lines of production.

In cattle lies a wealth¹ of about two million Schillings. By a strict selection in conformation and performance, by a legal regulation of selection and management of bulls, by the development of breeding organizations and the extension of record keeping, and by the examination of qualities, domestic neat cattle have of late years reached a degree of perfection similar to that of the foreign modern registered stock. This is the case especially with the stocks of alpine cattle (Graubraunvieh), with the spotted cattle of the Simmental line, and with the Pinzgau breed, important because of their wide distribution. The native breeds of Murboden, Blondvieh, and Waldviertel were systematically bred in the post-war years, and are the best breeds for their native districts.

The average annual yield of milk in liters of breeds of cows under test is: Graubraunvieh 3,250; Fleckvieh 2,540; Pinzgau 2,480; Murboden 2,340; and Waldviertel 2,200. Note should be made of the fact that this yield was obtained with the customary ration of grass and coarse food, with very small additions of feeding stuffs.

The chief regions for the production of cattle for breeding and for working purpose are alpine, which because of vast pastures specially adapted to raising cattle, have the best natural conditions for this branch of production. Besides supplying the domestic market, which reached its height in 1927, large numbers are exported. Latterly the surplus export developed in 1928 to 6,322,000 S., 1929 to 10,064,000 S. and 1930 to 13,271,000 S. But cattle breeding regions had to face an unfavorable position in 1931 due to reduction of prices and the difficulties of export. Government tries by stimulating the sale in the country to bring about essential improvement. The domestic supply of cattle for slaughter does not fill the demand, but large num-

¹ Census, June 14, 1930:

Neat	2,312,100 S.	Sheep	272,203 S.
Horses	247,700 S.	Goats	198,812 S.
Pigs	1,965,359 S.	Poultry	6,438,265 S.

bers of beef cattle are still imported. According to calculations of experts the number of the domestic breed cattle is 65% of domestic demand. The greatest part of imported beef cattle is brought to Vienna, whereas only a small part of domestic production is brought to this market. Fifty per cent of the beef consumed in Vienna is imported and 50% domestic. This represents an important and favorable rise compared with 1925 when Austria was but 20% self-sufficient.

HORSE BREEDING: Horse raising is still a very important branch of Austrian agriculture, for it has been proved that the tractive power of horses, especially on farms in mountainous and hilly regions, cannot be fully replaced by motors and engines. A native horse breed, viz., the Noric or Pinzgau horse is widely distributed. The Noric horse is excellent for agriculture, famous for its health, its easy maintenance and perseverance in work. It may be called, on account of its steady improvement in conformation and performance, a competitor of the foreign heavy draft breeds. The small Haflinger horse is likewise well known for its draft ability and for carrying in the mountains. It is bred in smaller, closed breeding-territories as well as on private horse-breeding farms.

Austria has two state horse-breeding farms: Wieselburg on the Erlauf, and Piber. In the former the English half-blood breeds Furioso, Nonius, and Przedswit are bred; in Piber the Anglo-Arabian stock Gidran, and the horses of the famous former imperial court breeding-farm at Lipizza. The stallions of the heavy English half-blood and of the Gidran, as bred on the farms, are used for breeding purposes in the warm-blood breeding territories of Austria, confined to distinct parts of Lower Austria, Upper Austria, Carinthia and Burgenland, while the stallions of Lipizza are chiefly bred for the world-famous Spanish riding school in Vienna.

SWINE: Pig raising has, together with the great increase in potato production and similar progress in dairying, taken a great rise in recent years. This applies to the quantities of pork produced, as well as to quality. Hog raising in the plains is built on the foundation of German breeds, especially the German "Landschwein" and "Edelschwein" breeds.

The domestic production equals about 70% of requirement. As the pork consumption of farmers of the open country and of the small centers is included in this percentage, only part of the production is brought to the Vienna markets. Because of the heavy foreign competition, the Austrian hog crop has to fight great difficulties. Still it has been possible to raise the supply of the live-hog-market in

Vienna from 50 head per market in 1925, to 6,000 head in 1931. With regard to all the markets in Vienna (live-hog-market, market for slaughtered cattle and pigs, and great covered market), the total domestic supply increased by 150% compared with 1925. The sums invested by Austrian agriculture to intensify swine husbandry methods, and by this to enhance the balance of trade, justify the steps taken in the new trade treaties for the protection of this branch of production.

BEEF CATTLE ORGANIZATIONS: There exists a large organization, the "Wirtschaftsverband für den Viehverkehr" in Vienna, for the utilization of beef cattle and pigs. It keeps up contact with the rural organizations for the purchase of cattle, and has good connection in Vienna. Agriculture has secured to itself a leading influence in this largest organization for the processing of beef cattle by acquiring an adequate part of the share-capital. Two large enterprises are joined to this trust. They work up 4,000 hogs a week for the production of lard and sausages, and the Vienna butchers' limited company with 56 branch offices, and many institutions and inns are customers. The local cattle buying organizations have to gather the farmers' announcements of sale, assort the cattle trucks, and after due notice bring them to the central cattle market in Vienna.

Though the autonomous customs on cattle were considerably raised in July, 1931, and the import of beef cattle at the former customs rate as set up in the treaties was reduced to a certain quota at preferential customs, the prices for cattle sank, due to the combination of several unfavorable circumstances.¹ Quite as unfavorable as low prices were the great fluctuations of price. Therefore a commission for regulating trade in cattle (Viehverkehrszentrale) was legalized. By this act the supply of the chief markets with beef and meat is, since November 23, 1931, allowed only by permission of the commission in the Ministry for Agriculture and Forestry. Permits are issued depending on the market demand, after a system of advertisement. It is the duty of this commission to regulate the import to meet domestic demand, so as to obtain stable prices satisfactory to domestic production.

POULTRY: Poultry-farming, because of the great importance of eggs and of live and dressed poultry, equals cattle breeding in importance. Several factors have contributed toward raising the egg record of flocks: the establishment of farms for breeding purposes,

¹ These were chiefly the financial crisis in Hungary, which is one of the chief countries from which cattle is imported, and a bad feed crop in Austria, which compelled the farmers prematurely to sell cattle.

and the designation of stock for breeding, viz., pullets and cocks for breeding, eggs for hatching, day-old chicks, and above all, directions for rations and poultry management. In order to rationalize poultry husbandry for peasants the following system of organization has been introduced: Within a specific poultry coöperative society's district a central breeding and hatching plant raises standard poultry of high efficiency. Good stock is handed on to the centers for propagation where in turn are produced on a large scale eggs for hatching. The eggs for hatching are delivered to a breeding center which sends the day-old chicks to the centers for raising them. They supply the farmers with two-month-old chickens. The records are kept by the coöperative society, which also buys the two-year-old hens, and utilizes them, after adequately preparing them. The collecting of market eggs is often done by the coöperative milk societies, which forward them to customers as designated by the poultry coöperative society.

FISH: In the domain of institutes of pisciculture, having the purpose of biological research of rivers and lakes, were founded in recent years, new and enlarged institutions for fish culture. Austria has excellent mountain streams and alpine lakes, stocked with *Salmonides* (brook trout, lake trout, char, huck, umber). The product makes its appeal to the fish-raiser as well as the sportsman.

BEEES: Apiculture likewise has in late years made commendable progress through extension work, improvements in colony size, enlargement of bee pastures, and vigorous prosecution of the fight against bee diseases.

DAIRYING: Only a few years ago Austria had to import dairy products, now it has an exportable surplus of milk and other dairy products. Recently dairy farming has become one of the most important branches of production. Through the favorable effect of regulations for the promotion of dairy cattle breeding and management, and through the creation of coöperative societies for the manufacture of milk and the rationalization of dairy, cheese, and butter farms, a significant rise has been obtained in quality and quantity factors of dairy farming.

There are at present 520 coöperative dairies, cheese dairies, and butter dairies, and 915 coöperative dairy societies.¹ These handle

¹ The rise of coöperative endeavor in dairying is indicated below:

<i>Year</i>	<i>Dairies</i>	<i>Dairy Societies</i>
1922	209	502
1926	433	601
1930	520	915

a large part of the farm milk, and convey it, after usual technical manipulations, to the great central factories. Loans amounting to 6,000,000 S. were granted from the League of Nations' Credit, and afforded the possibility for erecting 52 new coöperative dairy societies. As a result, dairy products which were a commercial liability in 1924 of 139,000,000 S., were in 1930 an asset of 8,000,000 S. Dairy products, fully able to compete in the foreign markets, brought in 1930 about 21,000,000 S. of which 12,500,000 S. worth of butter occupies first place. The supply of the Vienna market with domestic milk was, in 1920, about 29,000,000 liters. The entire fresh-milk supply of Vienna is now produced in Austria.

To regulate the supply of Vienna's milk and to stabilize the milk price, a fund for balancing milk prices (Milchausgleichsfonds) was established in the summer of 1931. Surplus milk is worked up into butter and cheese in the so-called "balance-dairies," and compensation is made to farmers for it. The contribution for processing this surplus is raised by an assessment on the fresh milk supply, at production costs. In so doing the balance is effected.

FORESTRY: Austria has 3,137,100 ha. of woods, which makes 37.42% of its total area, and about 42% of its arable soil. This fact alone shows the high economic importance of forestry. The timber crop not only supplies the entire domestic requirement, but offers great export possibilities. The post-war export of wood has taken a gradual rise, reaching its top in 1928 with an export of 258,700 carloads, worth 240,000,000 S. It has since declined, amounting in 1930 to but 188,000,000 S. Still this is 10% of the total export. These high export figures, however, could not be permanently kept up, as they were temporarily made possible by invading the stock of timber before the legal harvest year and by felling too much. All this was a necessary consequence of the economic distress of forest owners, distress caused by the excessive burdening of forests with public imposts. Considering the state of afforestation an annual export of 2,500,000 to 300,000,000 cubic meters of timber may be expected. The flooding of the market with Russian wood was as injurious to the Austrian market as it was to other surplus states, so that the consequence of the universal economic crisis hit forestry with unusual severity.

The Austrian wood wealth, of course, brought on a flourishing industry in wood manufacture. At its height (1928), 5,903 sawmills existed in Austria, though 4,277 of them were equipped only with simple saw-gates, totaling 2,079 full and 4,549 simple saw-gates. Besides the numerous other wood working industries, 142 wood-pulp

factories were active in Austria. This flourishing industry, too, was badly affected by the economic crisis, so that many plants had to shut down.

Besides wood products Austrian forests produce another important product, viz., resin. The resin crop is chiefly harvested coöperatively. In consequence of a high degree of rationalization in the utilization of resin, many valuable by-products are obtained to supply a great part of domestic demand.

5. AGRICULTURAL EDUCATION AND EXPERIMENTAL WORK

The professional training of farmers and agricultural scientists has an important place as instrumental to progress in agriculture. Studies and experiments must work together so that agriculture can meet modern demands. In a narrow sense, the agricultural school system comprises all kinds of agricultural schools; in a wider sense it also includes the so-called agricultural continuation classes.

The system of farmers' continuation classes is steadily developing. At present there are some 250 continuation classes for girls, and more than twice that number for men. Their organization differs locally. However they all base on knowledge acquired in the elementary schools, and strive for an extension of elementary as well as professional knowledge, either by systematic instruction or by occasional lectures, excursions, etc.

Five kinds of agricultural training schools operate: (1) The agricultural winter classes are meant for the greater number of young peasants. The time of instruction is limited in a few schools to one winter, in most schools to two winters. Thus the pupils can spend the busy season, April to October on their parents' farms. The agricultural schools for the whole year, with a course of instruction lasting not less than one year and generally two years, are meant for sons of large estate farmers. But the number of pupils who want this instruction for carrying on their own farms is continually decreasing compared with the number of pupils who want to become estate employees. (2) Agricultural schools for housekeeping, lasting from four months to one year, train the farmers' daughters to be skilled housewives. The pupils work in three groups, each supervised by a teacher: an agricultural group for the stables, the yard, and the garden; a household group for the house, the clothing, the washing, and the sewing; a cooking group for the kitchen and the cellar. The groups do the work by turns. For about three hours a day all the

pupils get theoretic instruction. Winter classes in agriculture and housekeeping are the most important types of professional instruction for the young farming generation. Austria is a country of peasants, and more than 90% of its agricultural land is owned by peasants. Therefore the peasants' professional schools must be especially promoted. In 1918 there were 12 classes in agriculture and 9 in domestic science; in 1931, 39 and 23 respectively, showing the remarkable strides made by this part of the system in the post-war period. (3) Agricultural high schools: These schools require for entrance the first years of a secondary school as foundation, and have three or four years' curricula. There is one such school for every branch of agriculture and forestry, viz.: (a) the federal high school for agriculture at Mödling, N. A.; (b) the federal high school for the cultivation of wine, fruit, and gardens at Klosterneuburg, N. A.; (c) the high school for forestry at Bruck, Mur, and Styria; (d) the high school for teacher-training in agriculture and housekeeping at Bruck on the Leitha, N. A.

The aims of the high schools are to fit students to work their own larger estates; to train employees for such work and for the agricultural extension service; and to fit for teaching in subordinate schools. (4) The highest theoretical and technical instruction in agriculture and forestry is given at the "Hochschule für Bodenkultur" in Vienna. The undergraduate curricula are of 8 terms (4 years), and give instruction in the autonomous management of large agricultural estates, provide its students with the faculties for graduate as well as undergraduate scientific research, for agricultural teaching, and for the higher agricultural promotion service. (5) Besides the foregoing schools there exists still a number of special professional schools for: (a) dairy farming, 13 — one a large state school and experiment station at Wolfpassing, N. A.; (b) moor cultivation and peat utilization, 1; (c) bee-keeping, 2; and (d) the system of agricultural coöperation, 1. Also, there are three one-year lower schools of forestry, to train the staff of foresters. Every year in addition are run special agricultural short courses in feed crop culture, cattle breeding, fruit culture, vine culture, storage, coöperation, bookkeeping, etc. For the sons of mountain farmers there are special winter classes as mountain farmers' schools at Gaming, N. A., and Ischl, E. A.

The modern means of instruction by radio of agricultural information is about to be introduced. In some states there are school-broadcasts by experts, instructing the farming population by short radio lectures. To get the farming population to improve their professional knowledge by reading during their leisure hours, several

professional libraries have been founded. The contents of these libraries is determined by the school reporter of the chief agricultural bodies.

The wide system of agricultural experiments is carried on in special institutions by the chief agricultural bodies and staffs of agricultural schools, on either their own or other's plants. For the most part the institutions for experiments and research are federal institutions, otherwise of the districts. They are closely connected and cooperate professionally. The larger federal institutions for experiments are: (1) the federal station for agricultural and chemical experiments, Vienna; (2) the federal institute for the protection of plants, Vienna; (3) the federal institute for plant culture and seed analysis, Vienna; (4) the federal experiment institute for culture of vine, fruit, and garden, Klosterneuburg, joined to (3) above; (5) the experiment station for dairy farming, Wolfpassing, N. A., joined to (4) above; (6) the federal experimental farm, Wieselburg on the Erlauf, N. A.; (7) the federal experimental institute for forestry, Mariabrunn, near Vienna; and (8) the high school experimental farm for agriculture, with an agricultural machinery department, Gr. Enzersdorf, N. A.

6. AGRICULTURAL ORGANIZATIONS

The agricultural coöperative trading system will be discussed in this section. It is the economic basis of agriculture, representing professional interests, as well as political organizations of farmers.

COÖPERATIVE SOCIETIES: The agricultural coöperatives have four chief objectives: (1) to provide farmers with operation credit from the Raiffeisen banks on the lowest possible terms; (2) to provide ample facilities to coöperative societies for purchasing supplies; (3) to promote the selling of agricultural products through coöperative sales societies;¹ and (4) to promote the growing of plants and the breeding of cattle by the coöperative breeders' societies.

AGRICULTURAL MUTUAL LOAN SOCIETIES: It is the work of the mutual loan societies, built after the system of Raiffeisen saving and loan societies, to grant individual loans for short periods to their members against securities and notes of hand. The basis of loans is secured on common unlimited liability; deposits are accepted from anybody. Activity is confined to a small, limited region not exceeding as a rule a borough. Thus the personal and economic circumstances

¹ These societies are for grain millers, milk and dairy farmers, cellarage, distillers societies, wood utilization, etc.

of the prospective borrower can be accurately judged by the head of the society. As the management by officers elected from the membership is honorary, differences between depositors' and borrowers' interests can be kept to a minimum. The cautious credit policies of the Raiffeisen banks, patterned to meet the actual economic needs, removed usury, formerly common in the open country. Supported furthermore by the unlimited liability clause, they sustain confidence in those rural banks. As in Germany so in Austria, even in the most agitated times, not one of these coöperative credit societies has collapsed or become insolvent.

The Confederacy and the states alike have, as was done in the past, specially promoted the agricultural mutual loan societies. The Raiffeisen banks enjoy special tax and fee remissions. At the end of 1930 Raiffeisen banks numbered 1,780, with total deposits of 330 million S., and about 270 million S. outstanding loans.

COÖPERATIVE SOCIETIES FOR PURCHASE AND USE: These societies provide their members with necessary supplies for agricultural operations, e.g., artificial manure, feed, seeds, spray materials, tools and machinery — all of the highest possible quality, and at favorable wholesale prices. Hereby commission merchants' margins are largely eliminated and the agricultural products of the members are utilized. The societies prepare their produce for markets, by cleaning, grading and packaging operations or by manufacture.

In the districts in which societies are infrequent, the Raiffeisen banks manage the agricultural purchasing business. In the states in which agriculture has reached a high degree of development, there are special purchase and sale or warehouse societies. The close of 1930 found a total of 136 societies of this kind, 58 in Lower Austria alone. More than 60,000 Austrian farmers, i.e., more than half of the owners of farms, are members of the warehouse societies. In the year 1930-1931 they sold produce to the amount of 23,000 carloads of 10 tons each. Grain and saw mills are sometimes associated with the warehouse societies. They are managed by farmers, and were able to weather unshaken the economic crisis of recent years.

The milk and dairy farmers' societies are prominent in the cattle production program. There are, first, the smaller milk societies, which collect the milk and turn it over to dairies and merchants, and second, the dairy farmers' societies, which process (pasteurize) the milk or produce butter and cheese. The pasteurizing plants developed rapidly last year, since by the help of a residue of the loan from the League of Nations, loans could be granted for the erection of 52 modernly equipped coöperative dairy farms. That this rise of

dairy farming has enhanced the balance of trade has been shown in the section on dairy farming. The coöperative milk societies are of the greatest importance also to the consumers in the towns, guaranteeing the supply of pure and wholesome milk. No coöperative societies have yet developed for the selling of cattle. In recent years committees for cattle trading were created, having their center in the ministry, but these offices are not coöperative societies.

The coöperative distillery societies are very important. They work up chiefly potatoes, and by utilizing waste, meet the demand for masting more cattle. The formation of coöperative societies of wine-growers is promoted in order to improve the producers' sale-price of wine.

COÖPERATIVE BREEDING SOCIETIES: The coöperative breeding societies (frequently at the same time pasturage societies), are of widespread importance. Their share in the improvement of alpine cattle breeds is great. These coöperatives are also concerned with the breeding of small livestock.

Among other agricultural coöperatives we may mention the great number of electricity supply societies, a number of machine and threshing societies. Austria had at the end of 1930 a total of 3,565 individual agricultural coöperative societies, with a membership of 355,000 farmers.

ASSOCIATIONS OF COÖPERATIVE SOCIETIES: The second degree coöperative organization is formed by the associations of coöperative societies, arranged with regard to the federal subdivisions. The associations have to supervise the organizations, to council and organize them, to keep up the balance of money in order to provide credit for the individual member coöperatives, to make the wholesale purchase of stocks, and to direct the sale of agricultural products. In a word the associations have to find the advantageous way respecting money and goods exchange, i.e., find bigger and better market for subordinate societies. In some districts all these tasks are carried out by a central association; in others, there is division of labor by which groups of these tasks are assigned to special organizations of the associations. Especially are the functions of money and goods exchange managed by different associations.

The duty of the money associations (central banks) is to put out at interest the ready money derived from deposits of members and non-members of the subordinate societies, and to grant loans. The surplus funds of the Raiffeisen banks are put out with care from the central bank, always considering the liquidity factor, thus enabling the central banks to put credit at the disposal of the coöperatives.

This development has contributed to the comparatively rapid organizing of coöperative goods' societies.

The goods' associations function as the commercial centers of the coöperative societies. They are, therefore, occupied with purchase and sale on a wide and favorable market on behalf of member coöperatives. By handling the entire agricultural supply, the goods' associations are able to a certain degree to regulate the market supply and prices. The twelve federal associations of coöperatives concerned with the exchange of money and goods have had a total annual turnover amounting to 1,732 million S.

Besides the foregoing there are associations which promote the common interests of the milk and dairy farming societies. These see to providing the regular market supply and function as central sales organizations. Examples are the "central coöperative milk societies," and the "Austrian economic union for the trade in cattle."

CENTRAL INSTITUTIONS OF THE AGRICULTURAL COÖPERATIVE SOCIETY SYSTEM: The universal union of the Austrian agricultural coöperative society system forms the third degree in the structure of the organization of the coöperative societies. The union represents the interests of association members, and aims to build up a uniform organization of agricultural coöperatives. Particular duties are lawfully to revise the associations, when revision is not a federal duty; to keep account of statistics of the coöperatives; and to conduct the publication of the leading agricultural coöperatives' paper.

The central endorsement and clearing office of the agricultural coöperatives is the highest financial institution. This center has to facilitate business between the associations of coöperatives and the coöperative societies; to extend credits, and advantageously to place deposits. The clearing office maintains, besides a center bank, offices for member coöperative societies, through which it exerts a rationalizing effect on the coöperative societies' organization. This clearing house was founded as a joint-stock company, in order to raise the requisite capital for the company and to put the management on a business basis with the coöperatives. Leaders of the German coöperatives and of the Austrian post-office savings bank are among the shareholders. Precautions have been taken that business be carried on in the interest of the Austrian coöperatives.

PROFESSIONAL AGRICULTURAL ORGANIZATIONS: Agriculture and forestry are, like commerce, trade and industry, organized on a statutory basis in accord with vocation. The chief bodies of agriculture are set up to represent the interests of agriculture and forestry.

Each federal division has only one body of this kind.¹ The inner and outer structure of these is not uniform. The majority of them (Lower Austria, Salzburg, the Tyrol, Vorarlberg, and Styria) is constructed on the chamber-system, though some of them still retain the old title, "council." The chamber system is characterized by a high degree of self-administration by persons elected in special elections, from an electorate having the privilege of cashing assessments of land taxes. In Upper Austria, as well as in Carinthia, the transformation into agricultural chambers is impending. All the bodies retain an able professional staff, and have the necessary sub-organizations, e.g., district chambers of peasants, district societies, etc. These bodies have their own funds for carrying on work, besides funds provided from both federal and district sources. Their activities have been extended into the field of elementary agricultural education.

The bodies are joined in a presidents' conference, in order to obtain a uniform attitude on prominent questions of common interest. The Lower Austrian Chamber is the office for the presidents' conference. The office is managed by the general secretary of the conference.

It is not too much to say that the very great progress of Austrian agriculture under the most trying circumstances is due first of all to the organization of agriculture. Besides, the methodical assistance and promotion by the federal ministry of agriculture and forestry and by the subdivisions, have helped to pave the way for the constructive program of the chief bodies of agriculture. Under the Ministry of Agriculture and Forestry (divided into 3 sections and 13 departments) is prosecuted a wide range of activities, e.g., research work, judicial functions as to drainage problems affecting agriculture and forestry, policing rural and forestry districts, and veterinary inspection. Because there exists close coöperation between these public centers and the professional organizations, the further development of native agrarian production and of the farming profession is both possible and assured.

AGRICULTURAL POLITICAL ORGANIZATIONS: The "Reichsbauernbund"² is the center of all Catholic farmers' organizations, and represents the common political and economic wishes of the agriculturists. More than 240,000 farmers belong to this largest political organization

¹The name of the organizations follow: Lower Austria: the chamber of agriculture for L. A., Vienna; Upper Austria: the council of agriculture for U. A. in Linz; Styria: the chamber of agriculture and forestry in Graz; Salzburg: the council of agriculture for S. in S.; Carinthia: the council of agriculture for C. in Klagenfurt; the Tyrol: the council of agriculture in the T. in Innsbruck; Vorarlberg: the chamber of farmers for V. in Bregenz; Burgenland: the agricultural chamber for B. in Eisenstadt; and Vienna: the society of agriculture and forestry, Vienna.

²"Federal Association of Peasants."

of farmers, the public activity of which puts it in the ranks of the "Christian-Socialist" party.

The "Agrarian League" is a political organization whose point of view is that farmers must be politically organized in a purely professional agricultural party in order fairly to represent agrarian interests in Parliament. As to its world view, the League occupies a neutral position, though it is closely related to the "Pan-German Party" from which it split off.

The Pan-German organization of wine-growers and farmers is the farmers' section of the Pan-German Party. It is active only in Lower Austria. Contrary to the Catholic conservative tendency of the "Federal Association," and the "Christian Socialist Party," the Pan-Germans have a liberal nationalistic tendency. Deputies of the non-socialistic parties elected on agrarian programs form a loose community in the agrarian union¹ "Greenfront," with the purpose of taking a common position on the agrarian legislation.

The "Alliance of Free Farm Laborers" is the central political organization of those farmers who vote the agrarian socialistic program. Their endeavor is to bring in the socialistic system. They do not war against the property acquired by work, e.g., that of the small land owner, but do against the property of the landlord. The agricultural interests are represented in Parliament by 54 deputies of a total of 165.²

7. PUBLIC TAXES — SOCIAL INSURANCE — CREDIT SYSTEM

Taxes, tariffs, premiums for social insurance, and interest on debts put a very heavy burden on agriculture. They are parts of the costs of production, but do not represent a financial outlay immediately resulting in income effect, as do the expenses for feed, seeds, and fertilizers. Besides, they are fixed charges which the farmer cannot influence, and so form an essential part of "economic" conditions of production.

¹ "Agrarische Vereinigung."

² The agrarian representation in Parliament was:

<i>Parties in Parliament</i>	<i>Number of Deputies</i>	<i>Agrarian Representatives Among Them</i>
Christian Socialist	66	40
Agrarian League	9	9
National Economic (8 Pan-German)	10	1
Heimatblock	8	3
Social Democratic	72	1
	<u>165</u>	<u>54</u>

TAXES: Taxes affecting agriculture and forestry must be classed as (a) exclusively federal, (b) jointly federal and district, and (c) exclusively for the districts. Direct federal taxes for agriculture and forestry are taxes on income, property, sales, and on drinks, especially on wine.

The districts levy taxes on land and buildings and on salaries for social institutions. Besides, assessments are levied for the benefit of boroughs, for street districts, for schools, etc.

The most important taxes touching agriculture and forestry are those on landed property, on estates, and on donations. Incomes of 1,400 S. a year are liable to income tax according to a progressive rate. The property tax on productive possessions is supplementary to the income tax. The value of the property is computed at ten times the net profit of the estate. The property tax is also graduated and is levied on properties of more than 36,000 S. For paid transferances of wares and paid services the sales tax is collected, in so far as the supplies and the services are those of professional persons. The lump sum is collected as tax on the peasants' sales on the basis of the "net profit" specified in the register of assessment. The "net profit" for all estates according to the register of assessment was fixed when the new land-register was made in 1870, the basis being productiveness, quality, and traffic position. In spite of altered conditions it is the basis for calculating the most important taxes on agriculture and forestry.

The wine tax must be paid on the production of wine.

The tax regulations of the districts are not uniform, but the following principles prevail: The tax on land is calculated on the 1870 "net profit" and in several districts is graduated. The taxes on buildings are mostly collected as rent-tax, and tax on houses.¹ Rented houses are subject to the former, houses which are not let but occupied by the owner are subject to the latter. Income taxes (social imposts on salaries) on non-members are as a rule calculated in a bulk sum for agriculture and forestry, according to the 1870 "net profit" of the estates, and thus are taxes on property.²

In a period of 30 years, i.e., the time a man works a given farm, he has to pay nearly 80,000 S. of taxes. If he could deposit yearly the sums in the savings bank, he might in the course of 30 years

¹ "Hausklassensteuer."

² The following is an approximation of the tax burdens of a peasant estate: A farm with 1000 Kronen "net profit" in the register of assessment, i.e., about 23 ha. of fields, with some vineyards, being a large farm in the grape growing region, with a value of about 160,000 S., has yearly taxes: Property 320 S.; additions (300%) 960 S.; house, 6.86 S.; additions (300%) 20.58 S.; income and property (income est. approx. 7,000 S.), 266 S.; sales, 150 S.; social, 90 S.; wine and wine sales (50 hl.) 796 S.: Total 2,609.44.

accumulate nearly thrice the sum (200,000 S.), a sum appreciably greater than the value of his farm. Obviously a fundamental tax reform, aimed to simplify the taxation system, is very necessary.

SOCIAL INSURANCE: Classification according to rank has made great progress alike in the insurance of workmen and of employees. Two groups of persons must be considered in the social insurance system of agriculture and forestry: (a) estate employees, and (b) all other persons professionally employed in a work, service, or apprenticeship relation.

The law of insurance of agriculture and forestry workers includes benefits for sick, accidents, invalids and old age. Excepting the regulations for the invalids the law has operated since January 1, 1929. The branches of insurance are (a) in sick insurance, (1) help to the sick, (2) help to mothers, and (3) money for funerals; (b) in accident insurance, (1) free rent for the injured and free artificial limbs and orthopaedic helps, (2) curative treatment, and (3) annuities to survivors: to widows (widowers), to orphans, and to other surviving persons. It is the duty of the agricultural sick funds to execute the sick laws and others for all farm workers.

Until the regulations of invalid (age) insurance are valid the aged farm workers are covered by the age rents of the agricultural working people's insurance society. Under certain conditions farm and forestry workers above 65 years of age are entitled to an age rent, which ranges from 18 to 46 S. a month. By employees' insurance, valid since July 1, 1927, farm workers are insured against illness, unemployment, inability to work, old age, and work accidents. It is the responsibility of the Vienna insurance office for farm and forestry employees to carry through all these insurance details. Insurance premiums bearing a certain relation to the wages of the insured defray the costs of the system. Premium collections are made from the employer, he deducting a part, designated by law, from the wages of the worker.

Though social insurance may seem at first glance to be a heavy load on agriculture and forestry, yet in the long run the costs are largely returned to the employees of agriculture and forestry as money and objects. By social insurance agriculture and forestry is saved great expense, because the care of sick or injured workmen is much cheaper in social insurance hospitals than in private.

AGRICULTURAL CREDITS SYSTEM: The most important agricultural credit institutions are the Raiffeisen and the mortgage banks. They were established to make agriculture independent of private money lenders and of commercial banks, neither of which is suited to serve agriculture.

The seven district mortgage banks grant fixed, long-term credits on property. Mortgages are liquidated over a long term of years by an amortization planned with payments in equal, half-year installments. The mortgage banks take security mortgage deeds. The responsible district government is guarantor of all obligations of the banks. The rural savings banks are also important sources of agricultural credits. They grant personal credits for short periods against notes of hand and securities, as well as long-term property credits having land security.

Loan rates of interest rose in the summer of 1931, because of the financial crisis, a heavy weight on agriculture and forestry. The Austrian bank's schedule of rates was 5%, Sept. 10, 1930-June 7, 1931; 6% June 7-15, 1931; 7.5% June 16-July 22; 10%, July 23-Sept. 12; and Sept. 13 to date (January, 1932) 8%. The Raiffeisen bank's rate had reluctantly to approximate this movement.¹ Long term mortgage loans are at present very difficult to be had, due to low prices offered for debentures. Nominally interest is 8%, but in consequence of additional costs they amount to 10 or 12%. The conditions of interest must be called unfavorable, considering the relative unprofitableness of agriculture.

8. AGRICULTURAL INCOMES

Since 1925 systematic inquiries into the profitableness of peasant farms based on the Swiss system of farm accounting (Professor E. Laur, Zurich), have been carried on. Beginning with 1928 the results of this work in the districts have been assembled according to a uniform procedure. Statistics of farm profits for three years, on approximately 3,000 peasants' bookkeeping farms can be compared. The results give not only a general view of the conditions of property, of work, and of yields, but show in a large degree how farming should be directed. Considering the state of agricultural income, it will be helpful first to study the development of agricultural prices. Following are the annual average Vienna wholesale prices in Schillings:

	1927	1928	1929	1930	1931 ²
Wheat, 100 kg.	40.83	38.90	33.51	27.64	23.12
Rye, 100 kg.	36.39	39.41	29.05	19.77	23.18
Milk, liter	0.36	0.36	0.35	0.33	0.32
Butter, kg.	5.80	5.70	5.90	5.10	5.20
Beef oxen, kg.	1.43	1.38	1.57	1.47	1.15
Pigs for meat, kg.	2.19	1.96	2.36	2.02	1.35

¹ Rates of interest of Raiffeisen banks in Lower Austria were at end of 1930, 5.5% on deposits and 7.0% on loans; at end of November, 1931, 7% on deposits, 9% on loans.

² For first six months.

In the period 1925-1931 the index of prices for agricultural products sank from 129 to 89. In this period the index of farm costs rose from 154 to 160, that of consumption expenses from 147 to 152. The unfavorable inverse relationship between expenses and income greatly reduced farm profits, many of them vanishing absolutely. Peasants can adapt themselves to unfavorable circumstances to a certain degree by diminishing consumption expenses. Such procedure helps to overcome difficult times, but affects adversely the producers of and dealers in articles needed in lines of household and farm supplies.

Farms producing chiefly cattle came off badly in 1928. They recovered in the following year, while the profits of the grain farms were reduced because of the beginning grain crisis. The monetary effect is to be seen in the total average of the calculations of lucrativeness, but even more in the production results of the suffering regions. General reduction followed in 1930, when the decline of grain prices persisted, and cattle prices fell.

These conditions are further reflected in the data on yields in these statistics on farm business:

PER HECTARE OF CULTIVATED LAND IN SCHILLINGS			
Year	Net Gain	Yield of Capital ¹	Agricultural Incomes ²
1928	65.48	59.78	174.21
1929	58.55	51.53	173.70
1930	34.33	25.21	142.71

The average incomes of agriculture in 1930 did not suffice to cover the normal consumption of the owner's family, which is as a rule very moderate, so that the loss of about 30 S. per ha. is the result, covered partly by casual earnings, by using up savings, and by borrowing.

9. OUTLOOK

In this situation the question arises, is Austrian agriculture delivered beyond all hope to the consequences of the agrarian world crisis, or is the economic dynamic of Austria able to disentangle itself from that crisis. To answer this question it is essential to note that Austria is a country of import for agrarian products, while it has an

¹ Net gain minus interest for loans.

² Yield of the capital plus claims to wages of owner's family.

export of wood and of industrial products. The figures of the Austrian balance of trade in 1930 were the following:

ITEMS	IN 1000'S OF SCHILLINGS		
	Imports	Exports	Balance
1. Live cattle	227,250	23,728	- 203,522
2. Victuals and drinks	618,244	59,591	- 558,754
3. Wood	18,244	186,766	+ 168,522
4. Other partly fabricated articles	740,650	232,098	- 508,552
5. Fabricated articles	1,090,514	1,352,534	+ 262,020
6. Gold and silver	39,480	28,102	- 11,378
Total	2,734,483	1,882,819	- 851,664

Of gross agricultural products, Austria imported grain and ground products, fruit, vegetables, and beef cattle. The big consumption center was Vienna. As mentioned above Austrian agriculture has a great surplus for sale, and by a further extension of production in specified products, it does not necessarily have to export them, so being influenced by world market prices. As the Austrian balance of trade was a liability to the countries from which agricultural products are chiefly imported, i.e., the east European states, it is possible to open the inland market still more for agricultural products, by commercial treaties, while considering the necessity of export of industrial articles. This course was taken in the new commercial treaties with Hungary in July, 1931, and afterwards with Italy. Favorable consequences have not yet appeared in the expected degree. However, the fault is not due to the treaties with their preferential contingents, and the reign of favored credits, but to currency difficulties which have since then come on all the states. Recently the situation has been influenced by the above mentioned prohibitions on import.

But further aggravation of the agricultural situation as it exists in the surplus states could at least be prevented. The price of rye per 100 kg. rose from 16.31 S. in November to 33 S.; the prices of wheat from 21.67 S. in March, 1931 to 31 S.; the prices of beef on hoof from the lowest point of 1.04 S. in July, 1931, to 1.40 S. per kg.; and the price of live hogs from 1.15 S. in June, 1931 to 1.70 S. In the present condition of foreign exchange, the chief problem is the supply of food.

At any rate Austria must try to balance its foreign trade in the immediate future, as the receipts do not suffice to make good the deficits. The political possibilities of accomplishing this lie in contingent agreements and preferences among neighboring nations. By

this the economic balance can be found and maintained. Beyond this it is sure that the Central European economy can get a strong impulse by the creation of great economic units. The chief factor of this problem is that such states as compete economically must join and have a sound and large inland market. This will enable them to outlive every recurring trouble in the world economy. Lastly, before we consider such a solution, the nationalistic politics of power, as it has developed in Europe in and since the great war, must be annihilated, and a peaceful atmosphere of confidence, favorable to economic intercourse between the states of Europe, must be guaranteed.

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CHAPTER TWO

BULGARIAN AGRICULTURE

BY

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· SOFIA, BULGARIA, DECEMBER, 1931



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THE AGRICULTURAL PROGRAM OF BULGARIA

I. GEOGRAPHICAL AND TOPOGRAPHIC SITUATION

The Bulgarian kingdom occupies the northeastern and the central part of the Balkan Peninsula. It lies between latitude $44^{\circ} 12' 30''$ and $41^{\circ} 12' 48''$ north and longitude $22^{\circ} 21' 14''$ and $28^{\circ} 3' 54''$ east of Greenwich. On the north it is bounded by the Danube River (beyond which spreads Rumania), on the east by the Black Sea, on the south by Turkey and Greece and on the west by Yugoslavia, the Kingdom of the Serbs, Croats and Slovenes.

Within these boundary lines, as defined by the Treaty of Neuilly, Bulgaria occupies an area of 103,146 square kilometers, which can be divided into three geographical regions, North, South and Southwest. The boundary lines of these regions are defined by the high points of Stara Planina Mountain and the Ichtiman Sredna Gora, running through the Mussala summit of Rila Mountain, Western Rhodope and Central Rhodope up to the summit of Koushlar.

North Bulgaria, 43,399 sq. km. in area, is comprised of the north part of the Stara Planina watershed that lies between the Timok River at the west, the Black Sea at the east and the Danube River. South Bulgaria, 42,259 sq. km., lies between the Stara and Rhodope Mountains, comprising chiefly the drainage basin of the Maritz River. Southwest Bulgaria, 17,487 sq. km., lies to the south of Stara and west of Rhodope Mts. comprising chiefly the drainage basins of the Strouma, Mesta and Isker rivers. As a whole the plains of North Bulgaria cover an area of 18,642 sq. km., of South Bulgaria 10,587 and Southwest Bulgaria 2,995 sq. km. North Bulgaria gradually slopes from the Stara Planina range in a series of foot-hills, till it merges into the wide, undulating Danube plain. The Danube Plain proper has an area of 18,000 sq. km., to which three minor plains add 642 sq. km. South Bulgaria possesses 22 plains, the largest being the Plovdiv-Pazardjik of 4,470 sq. km. These many small plains have their origin in the frequent tectonic changes which have occurred in the past and continue to occur in all southern Bulgaria.

The average altitude above sea level of Bulgaria is 480 meters. The most favorable conditions for agriculture are in North Bulgaria where 85% of the area is less than 500 m. high; the next best are in

South Bulgaria; the poorest in Southwest Bulgaria where over 90% of the area is more than 500 m. above sea level.¹

CLIMATE: Because of the neighboring seas, especially the Aegean arm of the Mediterranean, Bulgaria has a very varied climate. But generally speaking the climate of Bulgaria is mild, continental. It represents a transition between the comparatively milder west European and the colder east European climate, moderated as it is by the Mediterranean Sea. These conclusions are drawn after due consideration has been given to the following: the comparatively wide yearly amplitude of the temperature with an average of above 20° C.; to the comparatively low yearly temperature, which is 10° C.; to the yearly rainfall which shows its maximum during May and June and its minimum during the winter months of January and February, with an yearly average of 650 mm.; to the yearly movement and amount of clouds; to the average yearly amplitude of the relative humidity; and, finally, to the yearly range of atmospheric pressure with its maximum during January and minimum during June. These zones of the mild-continental climate occupy the bigger part of North, South and Southwest Bulgaria, without considering the southern boundary area and narrow strips of land along the Black Sea (especially its southern half). Due to these variations in the conditions and movements of the meteorological elements the country could be divided into six subzones. These provisional subzones are: (1) Danubian dry and cold region, which embraces a strip of land along the Danube River (and almost the whole of Dobrudja). The most characteristic climatic peculiarity of this region is its comparatively small rainfall, which is usually less than 500 mm. yearly. It is distinguished by its cold and severe winter and hot summer with the widest yearly amplitude of temperature. (2) Mild-continental region, which occupies the south part of the Danube plains and the high field of Southwest Bulgaria. The rainfall of this region approximates the average rainfall for entire Bulgaria. As a result of many

¹Area and elevations of Regions are:

REGIONS	TOTAL FOR THE KINGDOM	NORTH BULGARIA	SOUTH BULGARIA	SOUTHWEST BULGARIA
Altitudes	Sq. Km.	Sq. Km.	Sq. Km.	Sq. Km.
Up to 500 meters	66,584.2	36,767.1	28,350.9	1,466.2
From 500-1000 m.	23,650.9	5,243.9	8,420.2	9,986.8
1000 m. and above	12,911.1	1,388.7	5,487.9	6,034.5
Total	103,146.2	43,399.7	42,259.0	17,487.5

causes the winter in this region is cold, raw and long, and the summer is long and hot. The yearly amplitude of the temperature in this region is as wide as in the first subzone. (3) *The Upper Thracian Plain*, which comprises almost the whole of South Bulgaria, has about the same climatic conditions as the boundary lands of Southwest Bulgaria. In precipitation as well as in temperature these areas do not vary much from subzone 2, excepting that here the severity of temperature as well as the snowfall is less. (4) *The Black Sea* region occupies a very narrow strip of land along the seashore. Although unprotected from the cold north winds, the moderating influences of the sea here are shown through the reduction of the diurnal and the yearly range of temperature. The yearly rainfall is comparatively smaller, but the humidity is the greatest of the regions. (5) *South boundary transitional Mediterranean* region comprises the strip of land south of the summit of Rhodope Mountain. The most characteristic climatic peculiarity of this region is that the maximum rainfall usually occurs during November and December, while the minimum rainfall usually occurs during the months of August and September. The usual long summer droughts do not occur here, and the average yearly temperature is highest. (6) *The High Mountain* region comprises almost all areas in Bulgaria with an altitude of 1,000 m. above sea level. This is the region with greatest rainfalls, amounting to about 800 mm., the yearly rate of which is similar to that of the neighboring valleys. This is the zone also of deep snowfalls which occur and remain from the middle of the autumn to the middle of the spring, with the mountain peaks snow-capped during the summer. It is distinguished by its low yearly and moderate monthly temperature, and also by the smallest yearly amplitude of temperature, viz., about 18° C.

SOILS: The variation of the surface, the elevation and the climate of the country create conditions for great soil variations. Moving south from the Danube River, one can observe the following rough soil belts: in the immediate vicinity of the Danube River and along its whole length, a strip of land, is a belt with crummy clay soil. This strip passes a trifle to the north of the towns of Bela Slatina and Pleven, close by the town of Bela and a little to the north of the town of Balbounar. Its greatest width is not more than 30 kilometers. South of this belt lies another strip of land composed of crummy clay and sandy clay soil. This strip comprises the south half of the Danube plain, and reaches to the slopes of Stara Planina Mountain making a line on the south which starts approximately from the town of Belogradtchik, on the west, to Varna on the Black Sea. The third belt is of sandy soil. It comprises with few exceptions, the whole

area on both sides of Stara Planina Mountain stretching south on to the Thracian plains. Sandy soils predominate around Sofia in the whole southwestern Bulgaria and the Rhodope Mountain. In the Thracian plains, with the exception of the small region around Plovdiv, clay and heavy clay soils predominate. Lime soils are to be found around Provadia, Tirnovo, and a few other localities.

2. POPULATION

The population of the Kingdom on Dec. 31, 1880 totaled 2,852,600. In 1905 it had increased to 3,975,600; in 1926 it had still further increased to 5,368,000, and in 1930 it reached the figure 5,824,900. Thus the population of the country during a period of 50 years has more than doubled.

In respect to the total area of the country, taking into consideration the territorial changes, this increase has influenced the density of the population as follows: in 1881 there were 29.1 per sq. km., in 1905, 41.3, in 1926, 52.0, and in 1930, 56.5. That is, the population density has almost doubled in 50 years.

Bulgaria is preëminently a peasant country. The following data show this clearly when village population is substituted for, as it is approximately, the peasantry:

YEAR	POPULATION			PERCENTAGE	
	Town	Village	Total	Town	Village
December 31					
1900	724,435	3,001,848	3,744,283	19.85	80.15
1905	789,689	3,245,886	4,035,575	19.57	80.43
1910	829,522	3,507,991	4,337,513	19.12	80.88
1920	966,375	3,880,596	4,846,971	19.94	80.16
1926	1,130,131	4,348,610	5,478,741	20.60	79.40

CITY-WARD TREND: From the above figures there is evidence of a slight population trend toward the city. If peasants had maintained their 1900 position respecting the total for the Kingdom, there would have been an increase of but 42,571 in villages over the 1926 figure.

The main occupation of the population of the country has been and still is agriculture. Of the working population 74.3% were engaged in farming in 1900, 74.7% in 1910, and 74.9% in 1920, leaving for all other productive occupations approximately 25%. If the data on occupation are segregated on the basis of those actively

engaged in work, the extractive producers constituted 81.14% of the working population in 1910 and 81.32% in 1920.¹

DENSITY: The non-productive members of the "actively engaged in work" part of the population are to be found more largely in the agricultural fraction. Thus the non-productive members of the family engaged in farming, cattle raising, gardening, hunting and fishing constituted in 1910 — 69.02%, and in 1920 — 68.39% of the population. The greatest number of the actively engaged in work in farming, hunting and fishing represents the so-called helpers and hired workers. Thus there are for 1910 and 1920 the following percentage groups of persons actively engaged in farming:

	1910	1920
A. Owners working for their own account	21.19%	20.68%
B. Assistants and helpers	52.77%	52.16%
C. Hired labor	7.18%	8.48%

Although the available data do not show any remarkable changes as between occupational groups, there is a noticeable change in the relationship of density of farm populations and arable land. This is due to the fact that the rate of increase of arable land has been slower than that of population increase in the Kingdom.

INTENSIVE MARGIN: It is clear that the intensive margin of farming has gained on the extensive. The official statistics show

YEAR	PER 100 HECTARES OF ARABLE LAND	PER 100 HECTARES ACTUALLY TILLED LAND
1910	46 persons	53 persons
1920	50 "	64 "

that in 1910 there were actively engaged in farming, hunting and fishing, 1,820,801 individuals and in 1920 there were 2,143,010 on a decreasing area of arable and actually tilled land. In terms of persons actually engaged in tilling each 100 hectares of arable and of actually tilled land, the foregoing data are fairly representative.

¹ Population actively engaged in work:

Classes	1910	1920
A. Production of raw materials:	%	%
1. Farming and cattle raising, gardening, hunting and fishing	81.14	81.32
2. Mining	0.09	0.21
B. Finishing of raw materials (Industries and crafts, transport and communication, trade, banking and crediting)	12.28	11.75
C. Administration and free professions	4.66	5.38
D. Other undefined professions	1.83	1.34

Based on data as of December 31, 1926 there are 53 persons working each 100 hectares of actually tilled land. Thus to each person actively engaged in farming there are approximately 1.9 hectares.

Synthesizing these data, regarding (a) the increase of the total population, (b) the population connected with farming, (c) actually engaged in farming, and with (d) the increase of the arable land and (e) the total land occupied in farming, the conclusion is clear that the population of the country has increased faster than the arable land, the per capita area is diminishing, and the number of workers per 100 hectares is increasing.

3. LAND UTILIZATION

SIZE OF FARM HOLDINGS: Bulgaria is a country of small land holdings. This is evident from preliminary data for the number and size of the agricultural holdings, according to official data, December 31, 1926.

The largest class is that of 10 to 20 decares, followed closely by the 20-30 decares, 10 or less, and 30-40 classes. These four size groups comprehend a trifle more than 45% of the farm holdings of Bulgaria. To use the American unit, acre, 45% are less than 10 acres in area. There are very few (0.6% of the total) farm holdings in the country exceeding 300 decares, viz., 74.0 acres.

Most of the farmers operate their own land, comparatively few rent additional land, and still fewer are outright tenants. Data obtained on December 31, 1926, show that of the total number of farmers, 80.6% have their own land; 13.3% work their own and rented land, the latter comprising more than one-half of the cultivated land; 3.5% work their own and rented land, the latter comprising less than one-half of the cultivated land. Only 2.6% work exclusively upon rented land. The greatest number of farm holdings with rented land are in farm groups under 50 decares. The cultivated rented land comprises only 1% of 44,247,913.6 decares, i.e., of the privately owned lands.

A great part of the privately owned land, 31,849,667 decares, or 72%, has been transferred to legal heirs; 2,304,942 da., or 5.2%, passed into the hands of new owners through purchase from co-heirs; 6,048,895 da., or 13.7%, passed into the hands of new proprietors through purchases; 226,564 da., or 0.5% were given to small land holders or to farmers owning no land, in accordance with the 1923

law regulating distribution of land; 407,406 da.,¹ or 0.9%, were given to Bulgarian refugees who had immigrated from neighboring countries; and finally 3,410,439 decares, or 7.7% of all the privately owned land have passed into the hands of their new proprietors through various other ways.

Of the total number of farm holdings in the country 0.1% are exploited by the State, district, municipal, school and monastery authorities, and 99.9% are exploited by private persons or joint companies.

Of the total number of so-called personal land holdings, 87.1% represent land holdings whose proprietors are solely engaged in their cultivation, 5% represent those whose proprietors are engaged in industry and mining, 3.1% belong to persons whose main occupation is trade and transport, 1.5% belong to persons engaged in civil service, and 3.3% to persons engaged in various other occupations. Of all the proprietors whose main occupation is cultivation of land, 74.5% have no other occupation, i.e., they are exclusively farmers, 18% are engaged in agriculture as a secondary occupation, 4.4% are engaged in industry and mining, 2% in trade and transport, 0.2% in civil service, and 0.9% sundry.

CHECKER-BOARD: The land of the typical individual farm holding is not in one piece nor in a few compact pieces of land, but is in many small and scattered fields. The number of fields used for the various crops in their respective farm area classes ranges from 2.6 fields in the smallest farm size class up to 29.4 separate fields in the 300-999 decares group.²

LAND USES: Of the total area of the country, which in 1897 amounted to 9,634,550 hectares, the cultivated area comprised 36.74%. In 1905 the cultivated area came to 37.13% and in 1910, 40.76%. After the war, a different correlation existed between the cultivated and uncultivated area of the Kingdom. The cultivated area occupied 35.56% in 1920; 37.15% in 1925; 39.32% in 1929. That is, immediately after the war the percentage of the uncultivated land was appreciably greater than before the war, while the percentage of the

¹ The land was set aside from State lands. It was transferred to the peasant upon payment of 12% of its value. Annual payments over a period of 20 years through a branch of the Bulgarian Agricultural Bank completes the plan. To such as can pay down the entire cash value 30% discount is accorded; if paid at end of first year, 20% discount or at end of second year then 10% discount.

² The following shows average number of fields in different groups of farms:

Group of farms according to their size in decares	Up to 9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-299	300-999	1000+
Average number of fields per farm	2.6	6.2	9.4	11.8	13.8	15.5	17.1	17.8	19.1	20.1	22.5	29.4	17.0

cultivated land was greater before and smaller immediately after the war. Since the war a steady increase in cultivated land has occurred, bringing this area close to that reported for 1910.

The cultivated area is utilized for cereals, fodder, vineyards, vegetable gardens, natural meadows and other tilled land, part of which is planted annually and part remaining fallow. The tilled land generally cropped represents a very large percentage of the cultivated land. Thus from 1906 to 1929 inclusive, the tilled land takes the following percentage of the total cultivated land; 1906 — 87.34%; 1911 — 88.93%; 1916 — 88.59%; 1920 — 89.25%; 1925 — 89.31%; 1929 — 89.41%. It is seen by these data that in the series, the average tilled land increases and the fallow diminishes.

The vineyards and vegetable gardens together comprise a very small percentage of the total cultivated area of the country, but here, as is the case with the tilled land, we note, especially after the war, an increase from 1.72% in 1920 to 2.84% of the tilled land in 1929.

The natural meadows, on the contrary, in this period show a reduction from 9.03% to 7.75%. As is seen from these figures, the increase of the tilled land and the vegetable gardens and vineyards accounts for the loss sustained by the natural meadows.

As stated above a part of the tilled land is sown and the rest left as fallow. The sown land has increased from 64.4% in 1920 to 75.33% of the tilled land with correlative decrease in fallow:

Year	Tilled Land		
	Sown	Fallow land	Grassed
1920	64.40%	22.56%	2.29%
1925	71.23%	16.02%	2.06%
1929	75.33%	11.69%	2.39%

Many changes have taken place in recent years in the use of tilled land, as indicated by the following table:

TABLE I. USES OF TILLED LAND

Uses	AVERAGE PERCENTAGE OF THE CULTIVATED LAND FOR			
	1908-1912	1924-1928	1924	1928
Cereals	62.76	61.48	59.17	63.46
Oleiferous and industrial plants	0.66	2.79	2.67	3.93
Legumes	1.75	1.87	2.02	1.48
Potatoes	0.08	0.27	0.24	0.28
Melons	0.69	0.73	0.74	0.74
Vegetables	0.28	0.29	0.25	0.30
Fodder	13.81	14.18	14.81	13.70
Vineyards	1.94	1.87	1.65	2.04
Orchards	0.21	0.43	0.40	0.45
Mulberry trees	0.06	0.07	0.07	0.08
Rose gardens	0.19	0.13	0.12	0.16
Fallow land	17.57	15.89	17.86	13.38

Generally considered, as is seen from the above figures, the area of fallow land has been reduced, and with the exception of rose gardens the respective areas of crops have been increased, especially with the so-called intensive crops, such as the oleiferous and industrial plants, legumes, potatoes, melons, vineyards, orchards, and mulberry trees.

The planted tilled area in the country shows considerable variation in regard to the crops which are cultivated. The relationship amongst the different groups of crops is not uniform. Considering the period before the war and the period following the war, the cereals cover a comparatively large area of the tilled land. The period during the war, especially in 1918, reduced the area sown in cereals from plus 70% to approximately 59%. In the period 1904-1928, with certain fluctuations from year to year, the area planted with potatoes, oleiferous and industrial plants, and fodder has considerably increased; whereas the areas planted in legumes, water and musk melon and vegetables have not shown great changes. The increase of the area planted with oleiferous and industrial plants, aside from the normal course of their increase within the pre-war border lines of the Kingdom, is due also to the districts acquired by virtue of the Peace Treaty, which produced and continue to produce a great amount of tobacco.

4. CROPS

In connection with the utilization of the farm land, the question arises as to its utilization for different purposes. In summary, out of every 100 decares of farm land, according to statistics dated 1926, there are in decares: field crops, 70.4; vegetable gardens, 0.3; orchards, 0.4; vineyards, 1.7; rose gardens, 0.1; mulberry trees, 0.1; natural meadows, 6.9; half-natural meadows, 0.2; pasture lands, 2.8; community pasture lands, 0.4; marsh lands, 0.1; forests, 15.8; islands, 0.1; woods that are being cut every 15-20 years, 0.1; barrens, 0.2, and sundries, 0.5. That is, of 100 decares of farm land, 80 decares are cultivated land: fields, vegetable gardens, orchards, vineyards, rose gardens, mulberry trees, natural meadows, artificial meadows; and 20 decares are uncultivated land: pasture lands, community pasture land, marsh lands, forests, islands, low woods for cutting, salt fields, barrens, etc.

The distribution of the cultivated and uncultivated farm lands according to their uses in the different farm-size classes is significant. It shows that the smaller the size of farm holdings, the larger the proportion of cultivated area. Further, what is still more interesting,

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the smaller the farm holding the smaller relatively is the natural meadow.

The change in direction of agricultural production since the war corresponds with changes in crop area and distribution discussed above. This is substantiated by the following data for the production for the different groups of crops, calculated as yearly average for 5-year periods, pre-war and post-war.

TABLE 2. CROP PRODUCTION

<i>Crop</i>	<i>Average Yearly Production in Quintals</i>	
	<i>1908-1912</i>	<i>1924-1928</i>
Cereals	14,871,171	23,034,414
Oleiferous and industrial	569,029	2,906,302
Legumes	462,836	378,381
Potatoes	114,665	365,588
Vegetables	644,943	959,482
Fodder	10,892,200	11,116,912
Vineyards (grapes)	1,854,139	2,513,727
Fruits	347,577	591,446
Mulberry tree leaves	63,949	110,479
Rose petals	150,354	63,023

From the foregoing it appears that the production of cereals does not show any considerable change in quantity but that the production of oleiferous and industrial plants, vegetables, grapes, fruits, fodder, and potatoes, has shown a great increase. But what is more significant in this case are the changes which have taken place in the direction of the production of the separate groups of crops, instanced in Table 3.

TABLE 3. CEREAL PRODUCTION

<i>Crop</i>	<i>Average Yearly Production in Quintals</i>	
	<i>1908-1912</i>	<i>1924-1928</i>
Wheat	11,096,084	10,096,684
Rye	1,979,743	1,707,395
Maslin	958,747	971,627
Barley	2,592,928	2,556,180
Oats	1,466,758	968,764
Spelt	77,511	73,897
Millet	103,776	68,382
Maize	6,555,944	6,051,618
Rice	38,945	83,597
Buckwheat	135	....
Total	24,871,171	23,034,414

While the greater part of the cereal crops shows a decrease in production, other crops, especially the maslin and rice, show an increase.

More considerable decrease is shown in the production of oats and a slight decrease in the production of barley.

TABLE 4. OLEIFEROUS AND INDUSTRIAL PLANTS

Crop	Average Yearly Production in Quintals	
	1908-1912	1924-1928
Rapeseed	63,056	104,142
Sesame seed	6,396	11,964
Anise seed	6,824	2,946
Resin	584	339
Peanuts . . . . .	...	392
Tobacco	59,564	307,614
Poppy seed	10	1,844
Hops	0.28	...
Sunflower seed . . . . .	....	224,689
Seed . . . . .	....	16,503
Cotton fiber	1,810	5,331
Seed	1,538	796
Flax fiber	2,953	723
Seed	11,376	10,645
Hemp fiber	11,731	13,547
Sugar beets	405,173	2,210,462
Total	569,029	2,906,302

Here increase occurred in the production of all the plants with the exception of anise seed, resin, hops and flax. Especially great is the production of sunflower seed, sugar beets and tobacco. A slight increase is shown also in the production of rape seed, hemp, cotton, peanuts and poppy. Taken as a whole this group begins to assume a prominent place in present-day Bulgarian agriculture.

In the group of legumes there was a reduction in the production of beans and lentils, and a slight increase in broadbeans. The potato group shows an increase from 114,615 quintals average yearly production for the period 1908-1912 to 365,588 quintals for the period 1924-1928.

The forage crop group shows an increase only in the so-called artificial meadows, preëminently in the alfalfa and less in the clover, fodder beets, and glade lands crop. The production of hay from other forage plants shows a reduction. Fodder beets' pre-war production was 14,757 q.; post-war, 81,416 q. Artificial meadows' pre-war production was 288,608 q.; post-war 669,702 q.

With the vineyards there is a considerable production of grapes and juice from the so-called American vines, and a very great reduction in the production of grapes and juice from the old Bulgarian vineyards.

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AVERAGE YEARLY PRODUCTION IN QUINTALS AND HECTOLITERS

Old Bulgarian vineyards	Grapes	1,698,000 q.	680,920 hl.
	Juice	911,969	357,878
American vines	Grapes	156,139	1,832,807
	Juice	87,807	1,017,883
Total	Grapes	1,854,139	2,513,727
Total	Juice	999,776	1,375,761

In the group of orchards there was a marked increase in the production in almost all the different fruits. Plum production rose from 217,780 q. (pre-war) to 319,708 q. (post-war); apples from 217,780 q. to 319,708 q.; all others from 127,592 q. to 264,714 q.

The production of mulberry tree leaves and rose petals in the post-war years shows a reduction in respect to the pre-war years.

Of agricultural specialization the culture of roses takes a unique place. The roses are grown chiefly in the Karlovo, Kazanlik and Plovdiv Counties. In the year 1929, 6,393 ha. of roses were cropped: 3,635 ha. in Karlovo County, 1,251 in Kazanlik, 700 in Plovdiv and 414 in the County of Chirpan. In 1929, 78,795 quintals of blooms of roses were harvested from which 420,435 flacons of oil of roses (1 flacon = 5 grams) were produced. As a five-year average one hectare of roses produced 1,323 kilos blooms of roses, yielding 79.3 flacons of oil of roses. The value of the 1929 crop was 151,751,033 leva, with an annual average hectare value for the last five years of 23,732 L. and an average value of 299 L. per flacon of oil. All the crop of blooms of roses is utilized for oil. A part of it is processed in a crude way by the producers themselves, and the rest in special modernly equipped and operated factories. The "oil of roses" is sold on the foreign market.

And so, in the years following the war, Bulgarian agriculture gives more and more attention to the production of the so-called intensive crops, which in their cultivation absorb greater amounts of labor for a given unit of land.

LIVESTOCK: In regard to domestic animals Bulgarian farming is comparatively well stocked in sheep. Poultry is rising in importance. This is indicated by Table 5.

TABLE 5. LIVESTOCK RATIO TO POPULATION

	TO EACH OF THE POPULATION THERE WERE:				
	1900	1905	1910	1920	1926
Horses	132.08	133.38	110.25	81.92	87.04
Cattle	426.32	420.15	370.34	386.12	331.46
Sheep	1,878.63	2,014.83	1,993.67	1,835.38	1,593.94
Pigs . . . . .	...	...	...	224.15	182.76
Poultry . . . . .	...	...	...	1,500.37	1,845.29

As a whole the farming of the country, with the exception of poultry, is still represented only in a small degree¹ by the so-called intensive kind of animals.

CHANGES IN AIM: The abundance of farm labor for agriculture which is conducted on small holdings and not mechanized, makes Bulgaria focus its attention primarily on how to utilize fully its labor supply. To this end Bulgarian agriculture aims to find relief from the difficult position in which the war and the post-war period placed it, by intensifying its methods of managing its domestic animal enterprises. This, we would say, is the *main path* for its *future development*.

The changes in the direction of production have found expression in the total value of production of the separate groups of crops and in the export trade of the country. In general considerable increase has occurred in the value of the products of the group representing the oleiferous and industrial plants as well as the fruits.

Selecting for comparison 5-year periods somewhat removed from the war influences, the average annual value of production for crop groups in gold leva is:

TABLE 6. VALUE OF CROPS

CROP GROUP	1908-1912	1924-1928
1. Cereals	494,422,499 L.	555,622,282 L.
2. Oleiferous and industrial	11,419,257	63,657,873
3. Legumes	15,412,244	12,661,063
4. Potatoes	1,651,321	4,043,200
5. Vegetables	9,911,869	8,867,710
6. Fodder	107,661,798	92,485,277
7. Vineyard	57,254,945	41,029,653
8. Orchard	5,349,585	8,087,333
9. Mulberry	4,523,559	3,791,821
Grand total	714,206,023	798,102,075

The foregoing data indicate the change outlined in the agricultural production of the country, i.e., the ever increasing emphasis put on the production of selected intensive crops, viz., tobacco, sunflower, beet, and fruits.

TECHNIQUE: The technique of production in the years after the war compared with the years before the war, measured by the data for the average yield per hectare, with few exceptions does not show appreciable progress. Yields with the exception of barley, spelt,

¹ In Bulgaria there is not a silo for winter food storage for cattle, neither on separate farms nor in communities.

millet, anise seed, tobacco, hemp, and artificial meadows, show a reduction.

Nevertheless, in the technique of tilling the land, sowing, and taking care of the plants and harvesting, definite progress has been made during the last few years, even if it is not yet reflected in yields. This is substantiated by the data for the introduction of machines and implements in the agriculture of the country. Thus in 1911, to each 100 hectares plowed land there were 2.9 plows, in 1927 there were 8.4 plows. In 1912 for the same area there were 0.23 harrows, in 1927 there were 0.63 harrows. The implement for cultivating the land, however, is still the very primitive Bulgarian plow. From data obtained from the agricultural statistics for 1927 the state of our technique can be seen. For each 100 hectares of plowed land there were: motor plows and tractors 0.02; seeders 0.06; harvesting machines 0.20; threshing machines 0.07; winnowing machines 4.12; seed separators 0.12; mowing machines 0.02; hay rakes, 0.01; corn shellers 0.62.

On the other hand observations show that domestic animals' manure as a means of fertilizing the soil is being used, although not very rationally throughout most of Bulgaria. In some places in the country, especially where the intensive crops are cultivated, as is the case with tobacco, a beginning is being made in the use of artificial fertilizers.¹

DIVERSIFICATION: A definite sign of progress in agricultural technique is presented in the increasing variety of crops which occupy important places in the Bulgarian cropping scheme. Such examples are: sugar and fodder beet, sunflower, peanuts, tobacco, hemp, alfalfa, vetch, etc. In comparison with other countries, however, the progress made in this direction is still very inconsiderable.

5. EXPORTS OF AGRICULTURAL PRODUCTS

Essential changes are observed in the post-war years, more especially in the direction of Bulgarian trade in agricultural products.

¹ Artificial manures have limited use on Bulgarian farms. There are no mines of raw fertilizer materials, nor industrial enterprises producing fertilizers. Hence fertilizers must be imported. The high prices of imports of fertilizers is the main impediment to their use, especially for use on cereals. Artificial manures are utilized in limited amounts for the more intensive crops: tobaccos, vegetables, vineyards. The development of the importation of fertilizers is indicated in these official figures:

YEAR	1924	1925	1926	1927	1928
Kilos	15,047	42,758	72,080	144,531	415,105
Equivalent in leva	107,430	361,280	435,136	631,000	2,166,678

Thus of the total amount of national exports, agricultural products represent in successive 5-year periods from 1903 through 1925: 93.4%, 89.3%, 87.4%, 84.3%, and 92.7%. For 1926-1928 the corresponding figure is 89.9%.

The export of cattle, animal products and raw hides in this period shows an increase, while the export of cereals, especially in the years after the war, shows a rapid reduction. Based on the percent of total agricultural export, there was the remarkable up-set shown in Table 7:

TABLE 7. CEREAL AND LIVESTOCK EXPORTS

YEARLY AVERAGE PER PERIOD	EXPORT OF ANIMALS, ANIMAL PRODUCTS AND RAW HIDES—%	EXPORT OF CEREALS AND PRODUCTS THEREOF—%
1903-1905	16.17	77.00
1906-1910	21.91	72.20
1911-1915	16.90	70.57
1916-1920	10.95	7.81
1921-1925	19.44	39.70
1926-1928	26.17	24.88

Even more important are the changes, especially which take place in the period under consideration, in the export of fruits and vegetables. Whereas the export of cereals and their products in the pre-war years represents a major item, in the years following the war this export dwindles. Conversely, whereas the export of tobacco and fruits forms an inconsiderable item of the total export in the years prior to the war, in the years following the war it showed a marked increase.¹

A still better idea may be had of the changes in the export of agricultural produce in the years after the war by stating the position for a period. The total average annual value of the export of the country for the 1924-1928 period amounts to 5,704,092,993 paper

¹ Agricultural export relations are:

YEARS	PERCENTAGE FROM THE TOTAL EXPORT OF AGRICULTURAL PRODUCE		
	Cereals and products thereof—%	Fruits, vegetables and products thereof—%	Tobacco—%
1903-1905	77.00	2.93	1.40
1906-1910	72.10	1.28	1.51
1911-1915	70.57	3.03	8.06
1916-1920	7.81	1.04	77.22
1921-1925	39.70	1.74	35.83
1926-1928	24.88	5.82	39.27

leva (\$1.00 = 138 L.). The export of agricultural products amounts to 84.35% of the total.¹ Specific exported agricultural products with their respective percentage of total export value are: wheat, 3.72; rye, 1.15; maize, 9.75; flour, 3.70; eggs, 12.21; and leaf tobacco, 36.39. These six exports out of 28 export items account for two-thirds of the export, and leaf tobacco alone of one-third. The next largest export item is eggs.

6. THE AGRICULTURAL CRISIS AND RELIEF MEASURES

The depression crisis also affected Bulgarian agriculture. From the beginning of 1929 we experienced a sharp fall of prices of cereals. The fall became catastrophic for the Bulgarian farmer during the months of August, September and October of 1929. This caused the Government to take measures to assist the affected agricultural population, which were expressed in the purchase of foods on the local market for the army, compulsory labor service, prisons, and partly for the city population. These measures, however, soon appeared to be unsatisfactory.

The crisis deepened and by the end of 1930 the government promulgated through the National Assembly a special law for the purchase and export of cereals. Through this law a special Commission was created for the purchase and export of cereals, without laying any restrictions on the local and foreign trade in cereals. The Commission had to purchase domestic wheat, rye, maize, barley, oats and millet at prices higher than those quoted on the foreign grain markets. These prices were subject to change in accordance with the movements of the prices on these markets and were always subject to the approval of the Council of Ministers. The cereals bought by the Commission were paid for at the place of delivery, half in banknotes and half in so-called State tax-bonds, for the wheat, while for the other cereals 25% in cash and 75% in State tax-bonds. The State tax-bonds were issued to bearer but were negotiable and

¹ The details of agricultural exports follow:

AGRICULTURAL PRODUCTS	TONS	VALUE IN LEVA	%
(a) Cereals, legumes and products	244,798	1,436,744,528	24.75
(b) Fruits, vegetables, fodder	21,741	221,021,669	3.80
(c) Animal products	12,043	769,395,117	13.26
(d) Live animals (heads)	<i>heads</i> 839,014	306,925,679	5.28
(e) Colonial products	<i>tons</i> 34,702	2,161,832,386	37.26

tenderable for the payment of taxes due from 1887 to 1924, for the payment of land tax for 1925-1926 to 1930-1931 fiscal years, the craftsmen taxes up to 1930-1931 fiscal year, and for payments to the Fund of Public Calamities.

The effect of this law was good. The peasants received satisfactory prices, 4 leva per kilogram, for their wheat and corresponding prices for other cereals. The prices of the local market were held at a satisfactory level, higher than the prices of cereals on the international market. The State suffered a loss in money, which was due to the difference between the prices at which the Commission purchased and sold the cereals. The Commission for the purchase of cereals, which was to terminate June 20, 1931, continues to function. The prices at which it now buys cereals are changed and the proportion of the amount paid in cash and that paid in State tax-bonds is also changed. The effects of the operations of the Commission of purchase and export of cereals continues to be satisfactory to the village population, despite the lower prices. The loss to the State necessarily is colossal. It is borne by the State Budget. However the necessary funds are not yet voted, and with the present difficult position of State finances, it will be very hard to find the required sums.

To facilitate the export of cereals the railway rates were considerably reduced; all export duties, which were formerly charged when prices of agricultural produce were high, were suspended; and the rents of the lands belonging to the public and state land funds, which were utilized by the agricultural population, were reduced by 50 per cent. In spite of all these measures, however, the crisis continues to spread and to afflict the agricultural population. Today we have not only reduced prices of the cereals, but there is a great reduction of prices in the oleiferous and industrial products (with the exception of the sugar beet), the fodder crops, grapes, fruits, vegetables, etc.

Relief is now being sought in the reduction of the prices on the commodities of prime necessity which the peasant population buys from the market, namely: salt, kerosene, cotton yarns, sugar, iron, cement, etc., and in the distribution of agricultural produce. This reduction in the prices of commodities is being attained through fixing prices (provided for by special law) on the decision of the Council of Ministers, and by a change of the Customs Tariff for the imported articles.

THE EXPORT INSTITUTE: An Export Institute as an autonomous State institution has been established for the general purpose of organizing agricultural marketing. The Institute aims: (1) to study conditions of foreign markets in respect to Bulgarian exports; (2) to

study the position of Bulgarian domestic economy in respect to the problems of export; (3) to inform and instruct on the basis of the data collected, all who are interested in placing Bulgarian produce abroad; (4) to point out and recommend the regions to which Bulgarian produce should be directed and the method by which it may be adapted to answer best the requirements of the foreign markets; (5) to point out and recommend the manner in which Bulgarian foreign trade should be organized and to aid the establishment of organizations and head offices of export of Bulgarian produce; (6) to supervise the control of the quality, grading, packing, and the ways of shipping Bulgarian produce to destination, by establishing a Bulgarian National Mark for export, and issuing permits and controlling their use; (7) to take care of the propaganda for Bulgarian goods abroad, organizing the participation of Bulgarian foreign fairs and exhibits, the establishment of advertising stores in foreign countries, and organizing fairs and museums in the country; and (8) to express opinion in respect to bills and regulations concerning export, the preparation of customs and railway tariffs, negotiations of commercial treaties, and in general to come to the assistance of the Bulgarian government in every thing that concerns the organization, encouragement and direction of the export of Bulgarian produce abroad.

A definite program for import and export of agricultural produce and supplies has not yet been prepared. The fact that agriculture forms the main livelihood of the population of the country, and that the agricultural production forms the more important half of the national economic life, has, more or less, compelled statesmen and public men to center their attention upon the questions for the improvement of agriculture in its many branches. It cannot be said, however, that the agrarian policy of the country shows any constancy in the tempo of the promulgation of the adopted enterprises for the increase of agricultural production, and more specially, in the increase of the income of the agricultural population. However, it cannot be denied that generally this policy shows, especially in the years after the war, certain constancy in the undertakings directed to this purpose.

7. THE AGRICULTURAL SYSTEM

The basis of the whole work for the improvement of agriculture and especially for the propagation of knowledge about agriculture and its different branches is put on the scientific and experimental method of learning. It is a task which embraces all branches of

agricultural science, agronomy, animal husbandry, agricultural economics, phytopathology, entomology, etc.

TECHNICAL LEADERSHIP: For this purpose there was created, ten years ago, an Agricultural Faculty at the University of Sofia, and a number of experimental stations, fields and sections in different parts of the country. These experimental institutions aim to establish the most suitable technical methods for the cultivation of soil, manuring, sowing, planting and gathering of crops; to select suitable sorts of the above to correspond to the conditions of the different parts of the country; to establish the most suitable breeds of animals for their environments; to ascertain the economic position (a) of the separate crops, sorts and races of animals, (b) of the separate productive branches, as well as, (c) of agriculture as a whole; and to find means of fighting the diseases and other enemies of economic plant and animal life.

Since the Agricultural-Forestry Faculty at the University of Sofia was founded but ten years ago, and since a large part of the experimental stations and fields have been opened subsequently, it follows that almost all are branches and still in their organization period. The State has prepared persons through special training for work in the separate branches of agriculture, and through a special fund provided in 1924 for the agricultural experimental work created conditions for a normal and useful work in these scientific institutions. They have not yet yielded any particularly valuable results, but it is expected they will in a short time justify the hopes which the people place in them. In any case, the work of the separate institutions is well defined, and great efforts are being put forth for the solution of the most important and acute agricultural-technical and agricultural-economical problems of the country.

AGRONOMY: A number of questions, dealing with the cultivation of the soil, the methods and time for sowing the separate intensive industrial plants, the method for their cultivation, the time and manner of their gathering, as well as the introduction of certain new industrial plants in the agriculture of the country, have been solved for the regions of the agricultural experimental stations in Obratzov Tchiflik, Sadovo, and Sofia. These stations, it should be stated, existed before the foundation of the Agricultural-Forestry Faculty and other experimental stations in the country.

FARM EQUIPMENT: A special place in the work for the improvement of agriculture is occupied by the projects appraising the dead inventory of farm holdings. Great efforts have been made on this score for the replacement of old, primitive wooden plows with mod-

ern plows. Besides the propaganda carried on by the agricultural specialists, the State in the years after the war provided in its Budget means for supplying and distributing plows among the population at low prices on long-term credit through the Bulgarian Agricultural Bank. Furthermore the Agricultural Bank itself assists the different unions, coöperatives, and associations with credit for the supply of other modern agricultural machines and implements. As a result of these special measures, in 1929 there were in the country 350,328 plows as against 255,610 in 1925.

NEW CROPS: Not less important is the care taken by the State, before as well as after the war, to introduce new kinds of fodder plants. The great importance of this undertaking lies in the fact that abundant fodder is insurance of the agricultural holdings at a time when otherwise livestock deteriorates or even starves. Funds are regularly voted in the State Budget for the supply of fodder seed, e.g., alfalfa, clover, fodder beets, esparze, etc., which are distributed among the agricultural population gratis, or at very low prices. As a result of this policy, the area of the artificial meadows has increased from 7,716 hectares (1924) to 18,965 (1928), and of fodder beets from 228 ha. (1924) to 1,169 (1928). The attention to this matter goes further, special measures for the production of selected fodder seeds in the country being taken. To this end the State provides means for the assistance of private enterprise.

IMPROVED SEEDS: Special care is taken in accustoming the people to use for sowing, good and clean seeds of all agricultural plants. Especially in cereals, much encouragement is given to those coöperative organizations and private farmers who supply themselves for the above purpose with seeders and grading machines. These machines increased from 5,729 in 1925 to 7,090 in 1929. Pains too are being taken by the scientific institutes and experimental stations to obtain more remunerative sorts of the different industrial plants. This work of course is still in its beginning stages. The State on its own account organizes seed-producing farms, the product being exchanged favorable to farmers. Such farms have been in operation since 1923 in Kneja, Tchirpan and Plovid.

Seed control sections at the experimental station in Sofia, Obratzov Tchiflik, Sadovo and the Agricultural Faculty have been established to safeguard the interest of agriculture when new crops are introduced. The object is to control all imported seeds in respect to mixtures, authenticity, diseases, plant enemies, etc. Today no seeds may be imported if they are not previously inspected by these special controlling institutes.

MODERN ORCHARD PRACTICE: Through many kinds of encouragement much has been done to promote modern orchard culture. Among them the following: production of trees in the government nurseries for free distribution or at low prices, e.g., orchard trees, vines, mulberry trees, etc.; exemption of State taxes of such planted areas; premiums paid for well-cultivated orchards and vineyards. Much has been done by these means for the restoration of the phylloxera-destroyed vineyards and to establish good orchards and mulberry tree gardens. In this direction the State has contributed much by its policy of offering many facilities and premiums to encourage the production of authentic and first-rate vines, orchard and mulberry trees by individuals and private farmers, reserving for itself the right to control all the produced material. As a result of this effort, while in 1920 there were 18,271 hectares of vines grafted on American stock, 10,049 ha. orchards and 2,541 ha. mulberry tree gardens, in 1929 there were 65,611 ha. vineyards, 18,645 ha. orchards and 4,533 ha. mulberry tree gardens. That is, in a period of nine years the area for vineyards had been more than tripled, and that of the orchards and mulberry gardens almost doubled.

SOIL AMELIORATIVE MEASURES: Besides the efforts and measures which the State takes for improving the cultivation of the soil through the introduction of modern machines and implements, for the improvement of crop seeds, for the introduction of a greater variety of crops on the farms; the State takes particular care also to instruct farmers how to preserve stable manure, this cheap means for restoring the fertility of the soil. It encourages the construction of modern manure pits on farms. In the year 1930, 7,980 new ones were built, a favorable record.

Similar State efforts are made also to encourage the draining of marshland and the installation of irrigation. In this respect the work of the State is developed in two directions: (a) the execution of such improvements with the means of the State by its own organs, and (b) by the assistance of private collective initiative for the organization of special water syndicates for this purpose. The results obtained by the State in this work are very encouraging.

LIVESTOCK IMPROVEMENT: Since the war special care has also been taken for the improvement of cattle breeding. The State on one hand organizes its own experimental farms of pure blooded high-grade breeding stock, e.g., stallions, mares, bulls, cows, boars, sows, poultry, etc., and on the other hand it encourages the private collective initiative in this direction. On the State experimental farms are pure blooded stallions which every year during the spring

are sent to specified local breeding stations. Besides the State encourages the organization of horse breeding societies. The latter are still very few but the work of the State, through its experimental and breeding stations, has obtained gratifying results in improvement of horse breeding in the Kingdom.

CATTLE: Specially intensive effort has been made for the improvement of cattle breeding in the Kingdom during the last eight years. The State has set out to solve disputed questions in respect to the Bulgarian breed of cattle and foreign cattle breeds, in part through the organization of special dairies on the State farms and experimental stations, and in part it seeks answer through the organization of a special fund for the improvement of cattle breeding in every village community. This is in accordance with the law for the encouragement of agricultural production, creating a base for the improvement of the cattle of the country. The fund provided for in this Act increases from year to year, and from it sums are expended to increase fodder production for the supply and upkeep of cattle breeding stations, for the erection of sanitary cattle barns, for the organization of good pasture lands, for watering, for the organization of contests and fairs, for the organization of rational feeding of cattle, etc. The organization of cattle breeding societies with a definite line of breeding is specially useful. The work of these societies, founded in the districts where Bulgarian cattle are found in an unmixed state, is still in its beginning, but it is already giving satisfactory results. These societies are consolidated with the Bulgarian Agricultural Society which has compiled a registry of the pure-bred cattle in the country.

An inspection of the male cattle breeding stations by a special committee is made every year throughout the Kingdom. All impotent males are castrated, only the "approved" are left for breeding purposes. In case of lack of sufficient number of approved males, a so-called "permissible" class is allowed. The fund for the improvement of cattle breeding in the separate village communities in the Kingdom amounted in 1929-1930 to 134,139,218 leva, while only three years previous, 1926, it amounted to 56,689,466 leva. By means of this fund, excluding the projects with stallions and boars, 1,929 village community stables were maintained. Up to 1930, 408 community stables were constructed and premiums given to individual farmers for the construction of 3,704 new stables and for the repair of 1,529 old stables.

POULTRY: A special poultry raising station with special poultry raising sections at the State experimental farm is organized for the

improvement of poultry husbandry in the country. This assists the private and collective initiative, which recently has shown a wide interest in this branch of agriculture. From the cattle breeding fund have been given during 1930 premiums for the construction of 2,924 model poultry houses.

No less care is taken for the improvement of pig breeding. In connection with almost all State farms are established separate sections for raising good breeds of pigs. The stock produced on these farms is distributed at very low prices among the village population. It cannot be said that the distribution of this breeding stock follows a definite program for the improvement of the pig population in certain regions, yet the results so far attained are satisfactory. From the fund for the improvement of cattle breeding were made 1,435 model pig pens.

The silk cocoon industry of the country is being encouraged through the production and control of domestic and imported silk worm eggs, the special organization for the preservation and sale of silk cocoons in the country, and the cocoon drying plants and storage houses created by the Bulgarian Agricultural Bank.

PLANT AND ANIMAL DISEASE CONTROL: The plant disease control service of the State is lodged with the Agricultural Faculty and the sections of the agricultural experiment stations. It aims to preserve the different plants from disease through various measures. The law prescribes the control of imported materials, the destruction of dangerously diseased crops, etc. Similarly a special sanitary-veterinary service promulgated in the post-war years provides for the protection of animals from diseases.

8. AGRICULTURAL EDUCATION

EXTENSION: A special place in the State program is given to the promotion of agriculture through spreading knowledge among the agricultural population. This work among the adult agricultural population, as well as among the youth, is conducted through different kinds of schools, the institute for travelling lecturers, and the winter agricultural schools. This work under State direction develops along several lines. It is staffed by highly qualified personnel intimately acquainted with the population, and generally conducted so as to be inexpensive. As a special social service the institute of travelling lectures aims to exercise an influence among the peasants for the introduction of new technical means, new methods, new sorts of seeds and plants, suitable breeds of animals and new forms of organizing

farming. For the attainment of best results the work of separate specialists is concentrated in limited districts of 6, 10, 15 or more villages.

SHORT COURSES: The winter agricultural schools occupy an important place in the work. The main purpose of these schools is to give a knowledge of the various branches of agriculture and house-keeping to a wider circle of farmers and the women folk over 18 years of age. The four-month winter course of these schools runs for two years, for the attendance of which are utilized the winter months when the farmers are free from field work. The State budget provides for 14 such schools, of which 10 are functioning, attended by 654 persons. These schools are equipped with buildings and have small agricultural holdings corresponding to the average local type.

An Agricultural-Forestry Faculty was established 10 years ago in Sofia University to prepare agronomists and other scientifically trained agricultural workers. This Faculty draws yearly about 280 students in the agricultural section and 120 in the forestry section; 40 of these students are women.

HOME ECONOMICS: Besides this Faculty for the preparation of specialists in farm husbandry there is a two-year course for girls to which are admitted those with secondary education. This course is attended yearly by 40 girls. The graduates enjoy the rights of half-university educational standing, and may be appointed as teachers in the secondary and peasant girls' domestic science schools, and as travelling lecturers in extension domestic science.

AGRICULTURAL HIGH SCHOOLS: There are in the country also secondary agricultural schools, attended by 101 boys, an Agriculture-Domestic Science School attended by 45 girls, and a Viticulture-Gardening School attended by 100 persons. The schools have a five-year course, to which are admitted only graduates of public schools. The schools have dormitories and experimental farms.

PRACTICAL SCHOOLS: Besides these schools there are two-year schools in practical agriculture, 2 for boys and 6 for girls. The applicants to these must have completed public school. The attendance in these is 139 boys and 144 girls. The supplementary agriculture and agriculture-domestic science schools are provided for the boys and girls of the country, graduates of the common schools, who for various reasons cannot attend remote schools or high schools. The attendance in these schools is without tuition but is compulsory, four months in winter for two winters. The school has a program closely adapted to local conditions, but is not equipped with farms, though often using local farms. The teaching staff utilizes specialty lecturers,

graduates of higher agriculture-domestic science schools, as well as teachers of public schools and selected private specialists. In the 1930-1931 year there were 100 schools operating. The instruction is usually conducted in the public schools of the villages, though in a few unstances they have their own separate buildings.

9. COÖPERATIVE SOCIETIES

According to the Census taken in 1928 there were registered in the country 5,478 coöperative societies, of which only 3,031 were active. Five hundred fifty-two societies had been temporarily suspended or were in process of organizing; 1,775 had suspended work, and 1,400 amalgamated with others. Of these registered societies, 3,729 were in villages and 1,749 in towns.

The coöperative movement began about 1897, in which year were founded 5 societies. It rapidly developed after 1900, so that additional societies were founded as follows: 12 in 1898-1900; 617 in 1901-10; 727 in 1911-20; 869 in 1921-25; 296 in 1926; 298 in 1927; and 207 in 1928. Credit Societies, which at the end of 1928 numbered 1,583, hold the leading place among the coöperative societies of the country. Insurance Societies follow with 677 units; the consumers, building and public utilities with 273; common supplies, sales and finishing with 238; productive and labor with 108; and miscellaneous with 40.

CREDIT: The coöperative credit societies are widely distributed, 1,436 in villages and the remaining 147 in the towns. Of special interest is the fact that of the total number of village societies, 1,336 are village-farm-holding societies. In 1928 there were also 99 Popular Banks in the villages and various mutual crediting societies. The total number of members in the village-farm-holding credit societies on December 31, 1928, was 135,233 individual and 11 collective. To each village-farm-holding credit society in the villages there is an average of 101 members while in the towns each has 123 members. The Popular Banks in the villages have an average of 292 members while in the towns they have 282. The coöperative societies for agricultural credit in the villages rapidly developed in the years immediately before, during and after the war. Thus, up to 1897 there were only 3 agricultural credit societies, during the period 1898-1900, 7 were founded; 1901-1910, 583; 1911-1920, 441; 1921-1925, 390; 1926, 71; 1927, 54; and 1928, 33.

INSURANCE: Of the total of 677 Insurance Coöperative Societies in 1928, 624 developed in the villages and only 53 in the towns. The

most wide-spread in the country are the Coöperative Insurance of domestic animals. Of the total number of coöperative insurance societies, 662 were for insurance of domestic animals, 4 post mortem benefit societies, and 11 general insurance societies. The post mortem benefit societies and the general insurance societies are found exclusively in the towns, while the insurance of domestic animals functions mostly in the villages.

The coöperative insurance societies developed in the post-war years. In the period 1901-1910 there were only 3 coöperative insurance societies, exclusively in the towns; in the period 1910-1920, 28 were founded, 13 in the towns and 15 in the villages; during the period 1920-1925, 155, 15 in the towns and 140 in the villages; in 1926, 161, 7 in the towns and 154 in the villages; in 1927, 190, 6 in the towns and 184 in the villages; and in 1928, 140, 9 in the towns and 131 in the villages. The total membership of the coöperative insurance societies in 1928 was 183,177 personal and 1 collective, of which 154,973 are from the towns and 28,204 individual and 1 collective from the villages. The average membership of the coöperative insurance society is 271 members; the society membership for the towns is 2,924 members and for the villages 45 members.

CONSUMERS' HOME: The third place in rank is taken by the consumers' home building and public utilities societies. They are well represented in the cities. Of the 273 societies at the end of 1928, there were in the towns 199 and only 74 in the villages. These societies have a total membership of 84,615 individual (273 collective members), of which 73,810 members and 267 collective are in the towns and 10,805 members and 6 collective are in the villages. These societies developed during and following the war.

The societies for common supplies, sales and finishing of half-manufactured articles take a comparatively modest place among the coöperative societies of the country. The most of this group are those of the village farmholdings. In December, 1928, there were 190 societies of this class for village conditions, 45 for trade and industry, and 3 for free professions. Of the village division 13 were for general agriculture, 35 viticulture, 12 for gardening and orchards, 8 for apiculture-sericulture, 38 for tobacco producing, 6 for dairy, 75 for forestry, 2 for sugar manufacturing and 1 sundry. This kind of coöperative has developed mostly since the war, the tobacco producing and forestry coöperatives almost entirely since the war. The membership is 63,318 individual and 612 collective members, with an average of 534 members and 32 collective members in the towns, and 132 members and 4 collective in the villages.

"RINGS:" An important place among the coöperative organizations of the country in the group of productive and labor societies is taken by the coöperatives for the use of commonly owned machines, cattle breeding, and water syndicates. In 1928 there were two coöperatives for the use of the commonly owned machines, installations and accessories, 38 cattle breeding and 48 water syndicates. Of the latter there were 24 for electrical energy production, 18 for irrigation and 6 for drainage. These coöperatives have developed since the war.

LIABILITY: Of the total number, namely, 3,031 of active coöperative societies, 1,435 are with unlimited liability and 934 with limited liability. The 1,583 credit coöperatives are divided into 1,347 with unlimited liability and only 236 with limited liability. The insurance coöperative societies are exclusively with limited liability. The larger part of the consuming, home-building and public utilities coöperatives are also with limited liability, only 9 with unlimited. Other coöperatives are usually on a limited basis.

FEDERATIONS: The different kinds of coöperatives are united in district and general unions. These unions number 40 of which 9 are general and 31 district. One of the greatest unions is the General Union of Agricultural Coöperatives; another with a large membership is the Union of Popular Banks.

The General Union of Agricultural Coöperatives in 1928 had a membership of 936 agricultural credit coöperatives, 11 consuming, 2 viticulture, 3 productive, 1 cattle breeding, 6 forestry, and 4 tobacco. The membership of these coöperatives was 102,558 men and 5,693 women, of which 85.36% were farmers, 3.14% craftsmen, 1.73% merchants, 2.02% laborers, 1.69% teachers, 0.46% priests, 3.72% public service, and 1.88% miscellaneous. The property of the farmer-members of the coöperatives of the General Union of Agricultural Coöperatives amounts to 13,063,421,667 current leva (\$1.00 = 138 leva), 10,770,715,436 leva representing real estate, 1,609,215,705 leva livestock and 683,490,526 leva dead inventory.

The membership of the General Union of Agricultural Coöperatives is made up of 10.47% non-landowners, the rest being land owners.¹

¹ The classes of landowners follow:

Landowners owning from	1-10 decares	11,117 members or	12.03%
"	"	"	"
"	11-30	7,579	8.20%
"	31-50	23,713	25.65%
"	51-75	16,630	18.00%
"	76-100	12,654	13.69%
"	101-200	8,713	9.43%
"	201-300	1,946	2.11%
"	301 and above	384	0.42%

The greatest percentage class of members of the Union are those farmers, 23,713, owning from 31 to 50 decares of land, while comparatively few, 384, own more than 300 decares of land. The foregoing stamps the Agricultural Coöperatives as preëminently institutions to supply aid in divers practical ways to hard-pressed economic groups. Only 18,084 members of the membership of the General Union were not in debt to the coöperatives. Loans granted in 1928 to members of the Union amounted to 486,553,034 leva. The greatest amount, 104 million leva, was used by the coöperators for the payment of debts, about 70 million leva for the purchase of lands and a similar amount for home and farm buildings.¹

LOANS: The maximum loans granted to the agricultural coöperators were very unequal. Thus 46 loans were for sums up to 5,000 leva, 745 up to 10,000 L., 59 up to 15,000 L., 79 up to 20,000 L., 1 loan up to 25,000 L., 6 loans up to 30,000 L., 1 loan up to 40,000 L., and 1 loan up to 60,000 L. The average loan per coöperative was 503,680 L., per member 4,495 L., and per debtor 5,396 L.

At the close of 1927 the coöperatives belonging to the General Agricultural Coöperative Societies, had in their warehouses goods on hand valued at 52,615,000 L. During 1928 they supplied goods to the amount of 375,824,232 L., i.e., the total goods in stock for that year amounted to 428,439,232 L. The goods sold in 1928 amounted to 351,529,335 L.²

At the close of 1927 the coöperatives had a balance on their common sales account of 9,068,042 L., while the goods turned for common sale was 233,115,762 L. During the year the coöperatives

¹ Following is given the distribution of coöperation loans:

For payment of debts	104,035,025	leva	Harvesting	4,913,844	leva
For purchase of land	78,818,797	"	For plowing, hoeing, etc.	2,067,562	"
For purchase of animals	17,522,272	"	For seed, seedlings, etc.	5,009,329	"
For purchase of buildings	31,351,855	"	For manures	1,163,785	"
For home-building	47,339,952	"	For agr. implements	11,478,366	"
For building of stables, etc.	44,078,412	"	For agr. machines	6,241,865	"
Fodder	12,360,457	"	For ordinary farming needs	35,242,859	"
Marriages and funerals	8,771,596	"	For ordinary domestic needs	45,050,674	"
Payment of taxes	19,925,546	"			

² The goods supplied during 1928 were distributed as follows:

Foods and legumes	49,311,179	leva	Farm accessories	11,309,423	leva
Agricultural tools	2,118,319	"	Salt	18,900,912	"
Agricultural implements	6,280,538	"	Kerosene	16,854,436	"
Agricultural machines	3,693,328	"	Groceries	101,262,596	"
Seeds	2,105,403	"	Manufactured goods	43,044,588	"
Fertilizers	87,824	"	Men's furnishings	4,348,035	"
Poultry and eggs for breeding	22,321	"	Hardware	15,883,458	"
			Various other goods	100,601,872	"

had sold products to the amount of 191,124,623 Leva, i.e., an average sale per coöperative of 52,857 L.¹

During 1928 the member coöperatives of the General Union of Agricultural Coöperative Societies delivered products valued at 46,295,967 L. for common finishing (processing) as follows:

Milk	1,306,826 liters	Tobacco	130,411 kg.
Grapes	121,112 kg.	Oleiferous seeds	127,218 "
Rose petals	365,135 "	Fruits	112,775 "

The deliveries of products for common finishing (processing) amounted during 1928 to an average of 44,742 L. per coöperative. These figures indicate a modest beginning.

It is significant that alongside the various kinds of coöperatives as viticulture, dairy, tobacco processing, etc., are also some credit coöperatives. Thus, of the members of the General Union of Agricultural credit societies, 35 societies were engaged in dairy, 8 in viticulture, 8 in rose oil industry, 3 in tobacco, 5 in oleiferous seeds and 3 in fruits.

The real picture of the 1928 financial and material position of all, and especially of the credit coöperative societies of the country, is shown by the following data to tenths of 1,000,000 leva:

TABLE 8. FINANCIAL CONDITION (1928) OF COÖPERATIVES

<i>Group of coöperatives</i>	<i>Assets & Liabilities</i>	<i>Capital & Memb. Fees</i>	<i>Funds</i>	<i>Deposits</i>	<i>Real Estate</i>	<i>Net Profit</i>	<i>Net Loss</i>
All active coöp. societies	10,265.8	1,888.1	404.6	1,891.6	1,186.4	139.3	71.7
Active credit societies in towns and villages	4,282.7	697.5	172.3	1,625.0	124.4	89.9	7.5
Active credit societies in villages only	1,543.3	275.0	80.5	439.0	56.8	35.9	7.3

These data show that the agricultural credit coöperative societies in the villages as compared with those in the towns, and with all other coöperative societies, perform, as to size, a secondary work. Their own means, viz., shares, real estate and funds are limited, the deposits are small, and the profits modest. Yet they perform an exceptionally great service to the small farm holders in acute need of credit.

¹ The products sold were distributed as follows:

Small grain cereals	7,675,952 kilograms	Rose petals	203,285 kilograms
Maize	2,194,605 "	Leaf tobacco	57,573 "
Rapeseed	2,039,253 "	Cocoons	31,310 "
Fodder	752,272 "	Walnuts	25,222 "
Sunflower seed	565,510 "	Eggs	2,342,633 pieces
Legumes	442,704 "	Fuel wood	8,555 cu. m.

INSURANCE: Agricultural insurance in the country is represented by insurance against hail and frost and by insurance of animals. Fire insurance is practically confined to city risks. Insurance hazards in farming are distinguished by great irregularity. This exposes the private company to unexpected and sometimes catastrophic losses. On the other hand the coöperative insurance societies often are compelled to collect additional premiums to cover the indemnities. Due to the foregoing the country had resorted to State insurance in order that the deficits in case of great losses be borne by State subsidies. The agricultural insurances in Bulgaria are voluntary, free, and rest on the principle of mutuality. The insurance premium is fixed but differentiated according to the risks. Additional premiums are not collected. Payment of insurance premiums are made yearly. The annual normal loss in the country is estimated at 2,000,000,000 L.: 1,000,000,000 for crops and 1,000,000,000 for animals, on an average yearly income of about 23,000,000,000 L. from the crops and 22,000,000,000 L. invested in domestic animals.

HAIL INSURANCE: Bulgaria is very much frequented by hail storms, averaging from 50 to 60 hail-storm days a year. From data collected from insured communities by the insurance department of the Bulgarian Central Coöperative Bank, the shortest duration of the hail-storm period during 20 years, 1911-1930, was 123 days and the longest 193 days. The Bulgarian Central Coöperative Bank has been created as a department of the insurance division for the protection of agricultural produce against hail. The organization of this institution is centralized. The insurance conditions, methods of acceptance of insurance offers and of appraising losses, amounts of initiation fees and annual premiums, bases of geographical and hail-storm risks, and the amount of the indemnities are defined by this Bank. The technique of insurance against hail is built upon observation respecting hail-storm occurrence, the resistance of the different crops against damages caused by hail, the duration of the vegetation period of these crops, and finally the farm income derived therefrom.

The accomplishment of this institution during the 20-year period, although its work has been very limited, has been important to Bulgarian agriculture. Crops have been guaranteed against hail losses at 5,301,091,195 L. insured valuation during this period; 627,555 insurances have been contracted, with paid premiums amounting to 188,923,888 L.; and 106,850 persons indemnified in the amount of 148,533,111 L. For 301 L. paid in premiums by the average insuree in the 20 years, an average of 1,390 L. for damages was paid

by the Bank. Insurance against hail through this agency has penetrated more than 70% of the communities of the Kingdom, and has covered nearly 10% of the farmholdings.

INSURANCE AGAINST FROST: In order to protect the farmer against crop losses due to freezing, insurance has been operating since 1926. It has been contracted as supplemental to insurance against hail at an additional premium of 1% to 3%, calculated on the amount of the policy. The insurance against frost for all crops begins May 1st. Orchards and vegetables are not accepted. This insurance includes, for the present, only late spring and early autumn freezes and frosts. Loss from freezing caused by severe winter weather is not yet insured. The conditions of insurance against hail hold for frost as far as they are applicable. This class is not popular nor widespread.¹

LIVESTOCK INSURANCE: The question of the insurance of domestic animals was first raised in Bulgarian in 1898. Twelve years later, during 1910, the first law was promulgated for the insurance of large-horned cattle. According to this law the insurance is free and rests upon the principle of mutuality. Societies are organized and act by the power of uniform statute. These societies are organized for one community or for a group of neighboring communities. A minimum of five persons is required in order to constitute a society. One half of indemnities to every society is borne by the State and the balance is covered by the premiums of its members. When the premiums of a society are not sufficient to cover its share of the indemnities, additional premiums for meeting the deficit are collected at the end of the year.

In 1912 there were 3 societies, a total membership of 35 that insured 93 head of cattle; for 1915 the respective figures were 79, 1,025, and 4,167. Then followed nearly 10 lean years, but in 1924 the above headings showed 94 societies with 1,944 members, insuring 4,605 head which in 1930 rose to 840 societies with 31,501 members insuring 66,403 head.

¹ Data on insurance against frost losses follow:

YEARS	NUMBER OF INSURANCES	INSURED AREA in DECARES	PREMIUMS COLLECTED IN LEVA
1926	26	194	7,589
1927	162	1,625	40,289
1928	85	933	14,627
1929	166	3,826	26,536
1930	7	34	795

10. BULGARIAN AGRICULTURAL BANK

The Bulgarian Agricultural Bank is one of the key institutions for the assistance of the agricultural population and for Bulgarian agriculture. Midhat Pasha, the enlightened Turkish statesman, is considered the founder of the Bank. By organizing "community chests" in 1863 he laid the foundation of the Bank. These "chests" functioned up to the liberation-war, and from then till 1895 as separate "agricultural chests." By a special law promulgated in 1895, these chests were reorganized and united to form a crediting institution with a central management. In 1903 the Bulgarian agricultural chests through special enactment were put under banking organization with central management, and given the title of the Bulgarian Agricultural Bank. The foundation capital of the Bank on Dec. 31, 1930, aggregated 639,802,198 L. The reserved capital was 32,150,591 L., and the reserve fund 31,305,402 L.

The confidence of the public in the Agricultural Bank is great. This is attested to by the deposits and savings from the masses of the population. Thus, while in 1920 these savings deposits in the Bank amounted to 263,297,300 L. in 1925 they reached the sum of 1,831,921,100 L., and in 1928, 3,398,643,600 L.

POLICY: The policy of the Bank is directed in the spirit and the letter of a special law. It grants loans preëminently to farmers. The few granted to non-agriculturists are given to its clerks and functionaries. In general loans are made to small farm landowners. During the early years of its operation the Bank loaned on personal credits; later, especially since 1920, the personal loans were replaced by those against securities. The Bank is free to change at any time its interest rates. Beginning Jan. 1, 1920 the interest rate on all forms of loans was 8% with the exception of mortgage loans at 7%. From Jan. 1, 1922 to July 1, 1927 the rates fluctuated between 7 and 10%, the lower rate being on mortgages of the Agricultural Coöperative Unions. From 1927 to the end of 1930 the rates have been 9 to 14%. The Council of the Bank recognizes that a 10% rate is excessive in view of low produce prices and is endeavoring to find means for reducing the rate.¹

¹ From July 1, 1927 to June 30, 1930 loans were made at the following interest rates: 1. Loans to persons: (a) Against warranty, agreements for ceding on contract repayments, estates, mortgages and pledge of foreign valuable papers, 12%; (b) Against pledge of term certificates, issued by the Bank, 14%; (c) For loans with appointments for improvements, 10%. 2. Current Individual Accounts: (a) For current accounts against pledge of moveable estates, against mortgage, pledge of valuable papers and to Communities for indemnity for pillage and burnings, 12%; (b) On current accounts with appointments for

The Bulgarian Agricultural Bank has been especially responsive to the monetary needs of the population during poor crop years and has always granted loans for the upkeep of the family and livestock anticipating the harvest, and for seeds for sowing. As a protector of landowners it has never taken advantage of the financial difficulties of small or large farm landowners, its debtors, but on the contrary, it has continued to grant them the greatest facilities in repurchasing on an installment plan property secured by the Bank against debts. Besides this, it has facilitated the purchase of real estates. Furthermore, the Bank seeing the injuries done to farmers by common money lenders has persistently tried through its easy terms of credit to eliminate this public evil.

The Bank has consistently supported the agricultural coöperatives. During 1928 it extended credit to coöperative societies as follows: 268 credit, 15 consuming, 52 productive, 34 tobacco, 22 syndicates, 26 district unions, and 6 miscellaneous.

The economic activities of the Bank are directed along several lines, namely: (a) organization of collecting, finishing and preparing for sale raw agricultural products; (b) assisting sales by finding satisfactory foreign markets; (c) helping coöperative societies as well as individual farmers by supplying them with credit for the purchase of farm equipments; (d) supplying by direct sale to farmers articles of prime necessity; and (e) supplying farmers with food and feed in years of poor crops and unforeseen calamities.

The assets of the Bank have grown apace through its own earnings and the increase of deposits. The assets in 1920 were 476,174,000 L., in 1925 2,264,845,000 L., and in 1928 4,325,011,000 L.

The multiple activities of the Bank may be judged by the number and kind of the loans it grants. In kind, purpose and security these loans are: (1) against guarantee, (2) against mortgage and (3) against security, (a) to State, district and municipal governments, (b) to refugees, (c) to war invalids, widows and orphans, (d) current accounts against bonds, and (e) current accounts to coöperative societies.

Loans against guarantees during 1928 numbered 140,939, amounting to a total of 617,343,400 leva. Of these loans, 136,886 are given

improvements, 11%; (c) For mortgage loans and current accounts to the clerks of the Bulgarian Agricultural Bank, 9%; (d) For all other sorts of loans, 10%; 3. Loans and current accounts for Coöperative Unions: (a) For current accounts and loans against pledge of moveable estates, warranties and for loans against mortgage, 12%; (b) For open current accounts, 10.5%. Beginning October 1, 1930 the interest on loans against drafts and pledges was reduced 2%, $\frac{1}{2}$ % for Coöperatives, or from 12% altogether to 10% for private persons and from 12 and 10.5% to 10% to juridical persons. Personal loans and loans against pledges are given usually for the term of 1 year, mortgage loans on 10-year terms.

to farmers and only 4,053 to other persons. The loans are granted for various purposes, but the least for consumptive needs.¹

The number of mortgages in 1928 was 11,860, totaling the sum of 209,046,500 leva. Mortgage loans are granted for the payment of debts, for the purchase of property, construction of buildings, purchase of domestic animals, planting of vineyards and orchards, for the purchase of implements and machines and for improvements.

Loans against security of domestic animals, equipment and agricultural products, originally practiced to a limited extent, today are generally used. While in 1904 only 5,004 such loans were granted, in 1920 there were 60,114 and in 1928, 220,998 totaling in 1928, 1,073,195,800 L. The loans against security were contracted for the same list of purposes as were guaranteed loans.

Loans against security of bonds in 1928 were contracted to the amount of 22,157,700 L. Loans to the State amounted to 122,590,900 L., to districts and municipalities 15,073,500 L., to refugees 197,693,300 L., to war invalids, widows and orphans 54,430,500 L., and to current accounts of coöperative societies 1,037,913,400 L.² Usually loans granted by the Bank against guarantees form 18.86% of the current account, against securities 32.78%, against mortgages 6.38%, current accounts of coöperative societies 31.72%, loaned to the State 4.21%, and to refugees 6.05%.

POSITION: The Bulgarian Agricultural Bank by its organization is entirely a Bulgarian agricultural credit institution. It is not an ordinary credit institution whose aim is to distribute indiscriminate credit to farmers. Its enabling law permits unlimited initiative, and especially such as aims to increase the agricultural production or to facilitate the producers in the sale of their farm produce. The undertakings of the Bank for processing and selling produce, e.g., tobacco, cocoons, rose oil, etc., the regulation of the prices of these and other products on the local market, the supply of the agricultural population with live and dead inventory and articles of prime neces-

¹ *Guaranteed loans of the Bank (1928), for:* payments of debts 7,322 loans for 43,441,500 L.; purchase of property 19,713 loans for 111,297,500 L.; construction of buildings 8,054 loans for 59,156,100 L.; purchase of domestic animals 29,718 loans for 138,225,500 L.; the payment of taxes 893 loans for 3,392,200 L.; subsistence 48,696 loans for 154,601,900 L.; harvesting 537 loans for 2,452,200 L.; purchase of seed 7,731 loans for 29,052,800 L.; agricultural machinery and implements 4,854 loans for 21,742,300 L.; marriages 248 loans for 1,075,100 L.; funerals 21 loans for 67,900 L.; domestic needs 2,101 loans for 8,570,700 L.; modern upkeep of farms 2,849 loans for 18,395,100 L.; side-line production 1,644 loans for 9,037,100 L.; repayment of loans to State Lands Director 3,156 loans for 7,835,200 L.; sundries 3,401 loans for 9,008,700 L.

² The credits utilized by the different kinds of coöperative societies were to: 1,268 credit coöperatives 456,658,800 L.; 15 consuming 8,461,400 L.; 52 producing 37,644,500 L.; 34 tobacco 339,731,100 L.; 22 syndicates 71,823,500 L.; 26 coöperative unions 61,740,600 L.; 6 miscellaneous 63,853,300 L.

sity serve to indicate its economic activity. It appears in these enterprises in the capacity of a zealous and worthy coöperator of the Ministry of Agriculture and State Property. The great impulse of the coöperative movement in the country, the unusual increase of the deposits to 3,596,338,000 L.¹ as a result of the confidence which it enjoys among all classes of people, its enormous placements of 3,272,856,000 L., and its legal responsibility for public utility, all advertise the Bank and put it in the foremost place as the great credit institution, acting in the capacity of the leading promoter of the chief economic life of the country.

DEPRESSION: The depression began to be felt in Bulgaria during the second half of 1929. In the succeeding two years the economic situation grew worse and a few small private banks had to liquidate. But the Agricultural Bank, due to its skillful policy during the year 1930, when almost all private banks reduced their placings, increased it by more than a quarter of a milliard leva. During the year 1930 special credits were granted for collecting and exporting produce, credits for buying food for the Army and other Government organizations, and also credits for the Bureau for buying and exporting food. From this brief statement evidence is adduced that the Bank has been able to combat the existing depression thus far (Jan. 29, 1931).

II. TAXATION AND TAXES

Special studies upon the tax burden of the agricultural population in Bulgaria have not been made. Besides the direct State taxes such as the land tax, tax on buildings, income tax, tax on sheep and goats, the farm population is burdened with different indirect taxes which fundamentally affect agricultural production. First is the excise-tax on the materials from which he extracts whiskey. Besides these the peasant pays taxes towards the support of the district and municipal governments. Then he pays taxes to different funds, such as cattle breeding, epizooty, water tax, cultural undertakings, coöpera-

¹ In general the Bulgarian agrarian does not spend all his money savings. He has a limited amount especially during the last few years, due to the crisis in agriculture which has seriously affected him. Having great faith in the Bank, the peasants willingly put all their savings in this Bank. So Dec. 31, 1930, the Bank had: (a) 31,553 orphan's deposits of 293,635,763 L., of which peasants deposits were 26,924, i.e., 85.3% amounting to 236,403,888 L.; (b) 60,218 term-deposits of 1,705,470,075 L., of which 15,643 deposits or 25.9% amounting to 124,025,276 L. were from agrarians; (c) 30,919 saving deposits of 643,387,644 L. of which 11,019 or 35.6% amounting to 6,862,080 L. were from agrarians; (d) 6,020 interest current accounts of private persons amounting to 78,634,788 L. of which 2,730 accounts of 45.3% for 16,201,243 L. from agrarians. The interest rate on orphan deposits was 8%, on term deposits of 1 year 7%, of 3 years 8%, of 5 years 8.5%, on savings 7%, and on current accounts 5%.

tive water supply, coöperative land surveying, teachers' salaries, reading rooms, and contributions at time of public calamities. These levies differ fundamentally in extent and kind in the different districts and municipalities.

To what total sum the tax burden of the agricultural population aggregates in a direct and indirect way, in comparison with the population engaged in other vocations is not known. The studies which the institute of agricultural economics of the Agricultural Faculty of Sofia University made during 1928-1929 in respect to the profitableness of the Bulgarian agriculture show that the tax burden varies per decare of area in the different parts of the country according to the natural and economic conditions prevailing. In a study of 42 farm holdings in the country the taxes per decare of area range from 0.68 to 90 L. This constitutes for the different farm holdings from 0.10 to 11.02% of the total expenses. (For details see Appendix, Table I.)

12. THE INCOMES FROM AGRICULTURAL FARM HOLDINGS

Special studies for the establishment of the profitableness of agricultural farm holdings were begun some three years ago. These studies, during the recent two years, covered 23 farm holdings, and during 1928-1929, 9 farm holdings. The farm holdings themselves are very varied in size and in their organization, and scattered throughout the country. Thus, they cover farm holdings from 50.3 to 271.8 decares of land, and show for 1930-31 a return of from .43 to 9.32% on the active capital invested. (For details see Appendix, Tables II and IIA.) Gross as well as net incomes per unit area show a decrease in 1930-31, only 4 farms in 23 showing an increase for 1930-31, over 1929-30. Comparing the gross and net incomes with those of some of the agriculturally advanced countries, e.g., Denmark and Switzerland, the income per unit area is inconsiderable. This may be explained by the character of Bulgarian agriculture.

13. THE PARTICIPATION OF FARMERS IN POLITICS

The male agricultural population participates in the political life of the country equally with other Bulgarian citizens not younger than 21 years of age. This is expressed through their participation in different political organizations. The Agrarian National Union aims to be the peasants' party. It cannot be said, however, that all the members of this party are farmers. Due to the social structure of the

country, this party recruits a great number of its membership from the agricultural population, but the same might be said of several other parties. Yet it is a fact that the agricultural population takes part in politics. An approximate idea of this participation gives the votes received by this party in the election of 1923 and 1927. Of the 1,079,008 voters in April, 1923, when the party was in power, 569,139 votes were cast for the Agrarian National Union. In December, 1923, when the party was not in power, the Democratic Alliance received 639,881 votes of 1,096,477 votes cast, while the Union received but 132,600 votes, in coalition with the communist party 68,934, and in coalition with craftsmen's party 12,246. Generally considered, the Agrarian National Union is a very powerful party in the country.

14. OUTLOOK FOR AGRICULTURE AND FARMERS IN BULGARIA

Today the outlook for agriculture and the agricultural population of the country is not bright. A heavy economic depression prevails throughout the country. Through the crisis in agriculture, and especially in cereal production,¹ the income of the population is greatly reduced. Bulgarian agriculture may be characterized as predominantly that of cereal production. In the last decade a gradual change has occurred in production corresponding to the slow change in the social and small farmholding structure of the country. Intensive culture of plants and animals is given greater and greater place. This slow transformation² is accomplished blindly rather than through the directed efforts of the population itself, or through responsible factors and organizations.

The outlook might be better if the economic life of the world were normalized. The present unemployment in the industrial countries; the present financial difficulties of the world, as a result of the burdens and obligations imposed by the war; the present tenden-

¹ Through the Russian dumping of wheat Bulgarian agriculture is affected adversely by the drop in prices of grain food on the western European market, where the outlet of the grain production of Bulgaria is to be found. No effective measures against the dumping can be taken by Bulgaria alone. Other countries too are involved in the struggle against this dumping.

² It cannot be said that the Agrarian policy of the country is well established. To the competent, it is clear that the extensive agriculture, finding expression chiefly in grain production, must, because of insufficient land and excess of land-labor, give way to an intensive, even labor-intensive agriculture. This will mean the introduction of labor-intensive crops, e.g., flax, hemp, cotton, peanuts, and a long line of vegetable plants and fruit trees, along with intensive sorts of livestock, e.g., pigs, poultry and dairy cattle. Although such views on the reorganization of agricultural economy finds more and more friends, their conversion into action is delayed for many reasons.

cies toward tariffs, toward increase of national production, toward the increase of exports and decrease of imports, — are all conditions which do not open on prospects of a better future.

ECONOMIC ASSOCIATIONS: Agreements between the separate countries bring only temporary relief. They could not cure the present ills. Pan-Europe¹ if realized as it is outlined could bring about a certain amount of regulation of the economic relations among the different European countries. But its realization will be impossible in the near future, for it will be quite impossible so long as the crisis in agriculture lasts, which in some respects should be considered a crisis of superproduction.

The adaptation of the agricultural countries to the new conditions of life, created as result of the wars, in any event can be effected in a shorter period of time than the time necessary for the realization of Pan-Europe. This is evident by the heroic efforts which different countries are making, and by the statesmanship of the political leaders of the world.

Bright days might be expected for the agricultural countries if, having in view the lasting mutual dependence which exists among them, they could come to agreement on an international basis for a well-planned, oriented production program of each country towards its specific production peculiarities.² Then they would be guided by the idea of a rationalized national satisfaction, under mutual agreements, of the needs of the world for agricultural products, rather than by the present uncontrolled course of events in production and marketing.

¹ The Balkan countries, Bulgaria, Yugoslavia, Rumania, Greece, as well as Turkey, produce chiefly products of agriculture, the surplus to be exported. They appear as competitors on the European market. On this account they try to find, not better relations among themselves, but with countries where they can place their goods and from which they can buy industrial products. Result: No close connection exists between the above-mentioned Governments. An exception to a certain degree marks the relations between Bulgaria and Turkey on one side and Rumania on the other, with which there are concluded commercial treaties for development of the economical relations. But these agreements are not of great significance to the economic life of the country.

² Industry in Bulgaria is weakly developed and does not satisfy fully the local demands of the country. The larger proportion of industry is to be found in that which works up raw materials of agricultural products. In first place there is the textile industry, followed by the tobacco factories, sugar refineries, leather tanneries, flour mills, industries, etc.

In 1929 there were the following registered industrial plants: 237 flour, 4 sugar, 50 vegetative oils, 5 beer, 32 tobacco, 35 tricot and stockings, 30 cotton weaving, 20 flax, hemp, manilla, etc., 83 webbing, 15 soap, and 53 raw leathers.

The Government of Bulgaria has long recognized the negative influence of a feebly developed industry on the national economy, voting in 1894 a special law for encouraging local industry. In 1928 with the same purpose the following benefits were given to the industrial enterprises: (1) great facility for factory plant sites; (2) reduction of freight rates; (3) alleviating the duties; (4) free import duty on machinery, raw materials and semi-manufactured; and, (5) privileges on Government orders and requirement.

APPENDIX

TABLE I. TAXES

SURVEY RECORD OF 44 FARMS

NUMBER OF FARMS	SIZE OF FARM IN DECARES	TOTAL AMOUNT OF TAXES IN L.	TAXES PAID PER DECARE IN L.	% OF TAXES OF TOTAL AMOUNT OF FARM EXPENSES
1	313.00	5,000	15.97	4.46
2	275.6	7,600	27.57	4.33
3	271.8	2,239	8.23	2.56
4	270.00	4,538	16.80	2.85
5	239.00	9,925	41.52	6.19
6	237.5	324	1.36	0.42
7	214.00	12,500	58.41	10.92
8	199.5	14,152	70.93	9.57
9	186.00	2,449	13.16	1.89
10	183.4	955	5.20	1.01
11	177.3	406.00	2.28	0.61
12	168.9	5,561	32.92	5.20
13	167.6	11,492	68.56	6.74
14	167.3	10,372	62.00	5.46
15	163.7	3,868	23.62	2.53
16	161.00	7,014	43.56	6.18
17	158.00	14,220	90.00	11.02
18	149.9	2,340	15.61	3.49
19	140.3	2,266	16.15	4.31
20	139.00	9,090	71.87	8.25
21	138.8	4,132	29.77	2.63
22	136.1	7,916	58.16	10.04
23	135.00	10,379.50	79.55	7.71
24	132.4	3,549	26.80	4.93
25	130.1	536	4.11	0.68
26	123.9	200	1.61	0.16
27	121.3	1,040	8.57	0.66
28	113.5	2,271	20.00	2.72
29	112.00	3,000	26.78	4.01
30	111.00	2,360	21.26	2.40
31	110.9	.....	.....	.....
32	110.2	2,600	23.59	4.09
33	106.4	2,477	23.28	3.33
34	101.5	4,200	41.37	3.90
35	99.3	1,564	15.75	2.48
36	93.1	.....	.....	.....
37	77.9	150	1.92	0.22
38	65.8	45	0.68	0.10
39	63.6	4,799	75.45	5.30
40	62.7	4,077	65.02	2.38
41	62.5	1,419	22.70	0.83
42	52.6	474	9.01	1.33
43	50.3	1,146	22.78	2.99
44	27.4	203	7.40	0.92

TABLE II. FARM INCOMES
SHOWING THE GROSS RETURN OF 23 FARMS

No. OF FARMS	1928-1929			1929-1930			1930-1931		
	SIZE OF FARMS IN DA.	GROSS RETURN IN L.	GROSS RETURN PER DA. IN L.	SIZE OF FARMS IN DA.	GROSS RETURN IN L.	GROSS RETURN PER DA. IN L.	SIZE OF FARMS IN DA.	GROSS RETURN IN L.	GROSS RETURN PER DA. IN L.
1	..	....	..	271.80	157,321.13	645.04	252.10	160,959.10	638.47
2	226.3	301,298.50	1331.41	239.00	178,503.15	746.87	233.00	210,613.25	903.02
3	183.4	194,726.30	1061.75	183.40	199,307.65	1086.73	187.90	106,736.00	568.19
4	..	....	..	186.00	165,310.85	888.76	187.00	112,232.00	600.17
5	..	....	..	177.30	156,303.95	881.58	178.30	95,617.80	536.27
6	..	....	..	163.70	169,413.60	1034.90	173.30	143,426.45	827.61
7	168.9	168,499.45	997.62	168.90	169,662.65	1004.51	168.90	167,283.75	900.43
8	..	....	..	161.00	127,296.00	790.05	165.50	102,954.35	622.08
9	..	....	..	158.00	158,055.40	1000.35	158.00	128,675.25	814.40
10	..	....	..	149.00	89,422.10	597.02	149.90	81,631.20	544.57
11	..	....	..	140.30	107,422.10	765.66	137.50	92,275.10	671.00
12	..	....	..	130.10	136,539.40	1049.49	132.60	102,593.90	773.70
13	..	....	..	132.40	110,301.20	833.09	134.70	115,529.85	876.92
14	..	....	..	111.00	134,975.65	1215.99	137.80	60,628.15	424.15
15	124.5	178,284.20	1432.14	124.00	102,256.80	825.32	124.50	106,547.80	855.12
16	109.0	147,959.25	1359.91	113.50	122,253.40	1077.12	113.50	97,298.00	857.25
17	..	....	..	61.30	262,811.25	4287.26	112.20	297,504.95	2651.55
18	112.0	122,627.40	1090.52	112.00	95,500.20	852.68	112.00	93,293.45	832.97
19	..	....	..	138.80	221,288.10	1594.29	115.60	92,805.65	807.00
20	99.9	172,491.55	1726.64	101.50	131,788.10	1298.40	101.50	97,501.70	960.60
21	78.5	139,662.05	1781.40	78.00	115,150.20	1417.18	79.90	96,589.55	1208.88
22	52.6	57,703.15	1097.01	52.60	42,081.50	800.03	54.40	45,656.00	839.26
23	..	....	..	50.30	51,023.15	1014.37	52.50	42,269.50	805.13

TABLE II A. FARM INCOMES
NET RETURN OF 23 FARMS

No. OF FARMS.	1928-1929		1929-1930		1930-1931	
	NET RETURN PER DA. IN L.	NET RETURN IN % OF THE ACTIVE CAPITAL INVESTED	NET RETURN PER DA. IN L.	NET RETURN IN % OF THE ACTIVE CAPITAL INVESTED	NET RETURN PER DA. IN L.	NET RETURN IN % OF THE ACTIVE CAPITAL INVESTED
1	....	....	324.29	6.97	211.25	3.97
2	519.91	11.45	76.17	1.41	186.42	3.22
3	619.84	17.02	572.09	15.42	46.75	....
4	....	....	192.84	4.01	104.55	2.34
5	....	....	507.59	19.06	62.27	2.07
6	....	....	103.58	2.05	20.05	0.43
7	562.47	8.94	372.14	5.87	268.47	4.18
8	....	....	85.93	3.86	313.47	....
9	....	....	184.21	3.25	385.36	6.75
10	....	....	150.55	3.73	57.62	1.35
11	....	....	391.38	7.91	208.93	3.41
12	....	....	451.44	10.67	93.98	2.04
13	....	....	290.05	5.08	86.63	1.38
14	....	....	329.22	6.22	45.87	1.05
15	573.79	8.38	138.44	2.12	395.95	6.28
16	302.28	7.60	341.16	8.81	249.01	5.56
17	....	....	1462.69	14.55	595.35	9.32
18	374.51	6.55	185.62	2.98	254.89	4.20
19	....	....	466.40	12.01	112.25	2.09
20	436.99	7.07	239.31	3.72	306.83	5.04
21	658.52	6.11	603.19	5.49	216.49	1.89
22	325.82	15.42	125.88	5.87	149.21	6.71
23	253.98	4.59	83.59

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CHAPTER THREE

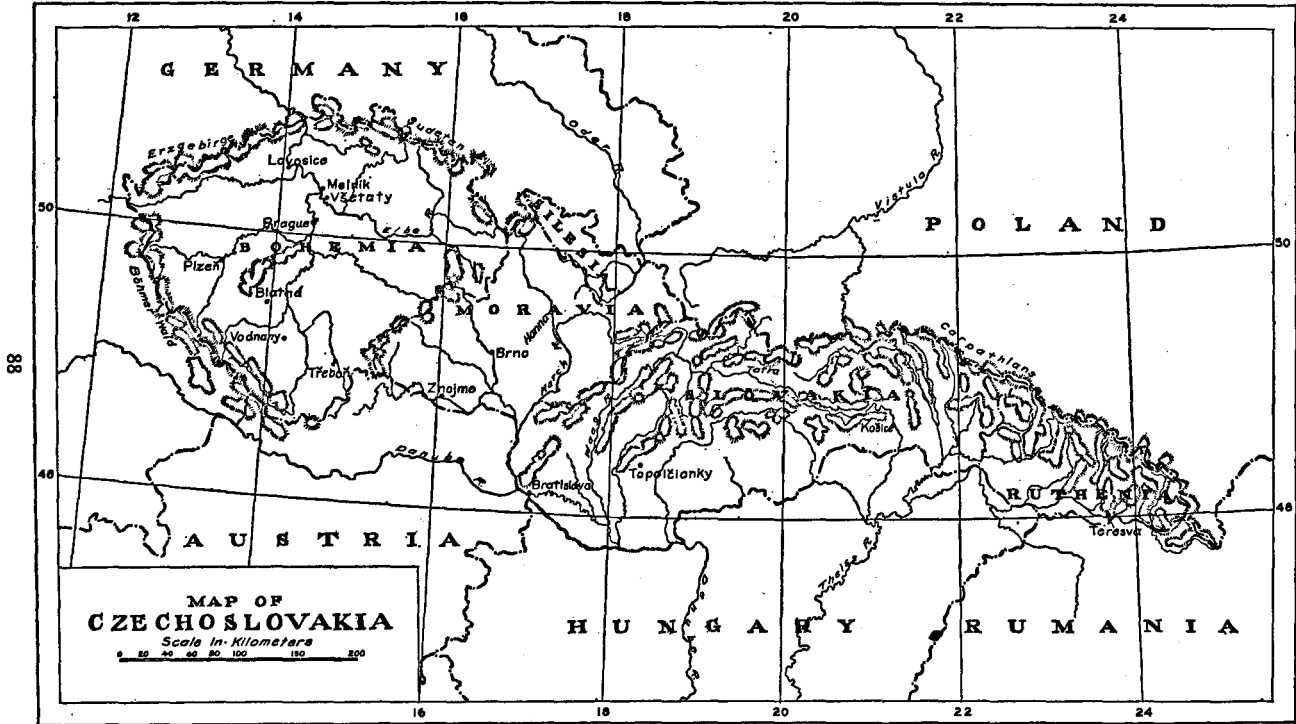
CZECHOSLOVAK AGRICULTURE

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CZECHOSLOVAK AGRICULTURE

I. INTRODUCTION

SITUATION OF THE REPUBLIC: The Czechoslovak Republic was created in 1918 by uniting the western so-called historical provinces (Bohemia, Moravia, Silesia) formerly parts of Austria, with the eastern provinces (Slovakia, Sub-Carpathian Ruthenia) formerly belonging to Hungary. It is a central European state not only on account of its geographical situation but also in view of its political position. Its historical evolution has always been associated with interests of central Europe. Its area has long been a corridor for the north and the south of Europe. Even in ancient times this territory served as an intermediary between the north and the Roman Empire on which it bordered. The routes crossing this land in the Middle Ages survive today in their full importance. Being the westernmost Slav country, it has also been used in all times as a bridge between western Europe and the other Slav states.

GEOGRAPHY: Czechoslovakia is a land-locked state. This inconvenient situation is partially compensated by watercourses which provide access to the sea. The navigable reaches of the Elbe, Oder, and Danube measuring from the frontiers are respectively 615, 850 and 1,660 kilometers long. The form of the Republic is that of an east-west belt. The greatest width of this belt is about 244 km. From west to east it lies between $12^{\circ} 5' 15''$ to $24^{\circ} 37' 50''$ east Gr., approximating 845 km. and equaling the east-west width of France. The boundaries of Czechoslovakia are for the most part natural, such as mountain ranges, rivers or marshy lowlands.

In the west the frontiers are a result of long political evolution. Of their total length (3,145 km.) the German frontier represents 1,247 km., Hungarian 620 km., and Austrian 548 km. In a comparison of this frontier length with the circumference of a circle of the same area Czechoslovakia is an adversely bounded state. Equally adverse is the proportion between the number of Czechoslovak population and that of other countries, viz., 1:9 (Poland only 1:7, France 1:35, Germany 1:2). The above frontier length encloses an area of 140,394 sq. km., of which Bohemia covers 52,064, Moravia-Silesia 26,738, Slovakia 48,936 and Sub-Carpathian Ruthenia 12,656.

Geographically Czechoslovakia is divided into two regions, viz., the Bohemian and the Carpathian Massif, the character of each being in many respects distinct. Still the language and ethnographic features of the midland population act as a common and most powerful bond of the whole state. All the minorities occur only along the frontiers and not one of them (e.g., the large German minority) occupies any coherent territory. Another equally powerful bond is the picturesque element in the peasant culture. This bears out the fact that the Czechoslovak nation, whose eastern and western branches are guided by a common idea of the self-preservation, integrity, and progress of the State, is now, and was in the historical times, autochthonic on the present area.

AREA AND POPULATION: Within its boundaries secured by the treaties of Saint-Germain and Trianon, Czechoslovakia occupies 140,394 sq. km. and has a population, according to the returns of the latest census of December 1, 1930, of 14,726,158, which gives a density of 104.9 per sq. km. Respecting political administration the State is divided into four territories derived by historical evolution and therefore called "historical countries," these countries again being subdivided into political districts, each having one or two Court districts. Table 1 shows the population according to the various countries.

TABLE 1. AREA AND POPULATION ACCORDING TO COUNTRIES

COUNTRY	AREA Sq. Km.	POPULATION ¹		POPULATION ² ENGAGED IN AGRICULTURE AND FORESTRY—%
		Total	Per 1 Sq. Km.	
Bohemia	52,064	7,106,766	136.5	29.7
Moravia-Silesia	26,738	3,563,157	133.2	35.3
Slovakia	48,936	3,330,885	68.3	60.6
Sub-Carpathian Ruthenia	12,656	725,350	57.3	67.7
Czechoslovakia	140,394	14,726,158	104.9	39.6

As can be seen from Table 1, Czechoslovakia consists of two parts which differ in point of population and economic conditions. The two parts are: The western region, densely populated and preponderantly industrial (politically united with Austria until the coup d'état of 1918), and the eastern region, thinly populated and preponderantly

¹ According to census, December 1, 1930.

² According to census of 1921, data of 1930 census not yet available.

agricultural (politically united with Hungary until 1918). By connecting the industrial West with the agricultural East the economic and social equipoise was restored, which is extremely important if a land-locked state is not to lose its independence. However, despite this favorable circumstance the Czechoslovak industry, which has swallowed 34% of the industrial population and only 22.5% of the area of former Austria-Hungary, i.e., 50% more population than area, remains in many lines dependent on foreign markets for the sale of its products, defended or won against keen foreign competition after its post-war reconstruction and rationalization.

Rapid progress has also been made in agricultural production. In 1918 it was reduced, owing to war conditions and to state control of private enterprise to 40% of its pre-war capacity. This rehabilitation is due on the one hand to the natural wealth of the country, on the other to the diligence, frugality, resolution and cultural advance of the agricultural class, and to the practical policy of the Government.¹ As a result of this the exchange of the crown rose and was stabilized in 1922, since when it has remained one of the firmest.

INDUSTRIAL PRODUCTION: Ours is an agricultural-industrial state. The industries are considerably advanced and of ancient origin. The growth of the industries was brought about by the mineral and agricultural wealth of the country. From early times the population has been noted for high culture and even in the Middle Ages crafts were flourishing on the territory of the present state. Despite the decline due to the Thirty Years War as well as to later struggles, the artisan tradition and skill of the Czechoslovak people have not disappeared, as a result of which the modern industries have a supply of skilled labor. As early as 1463 we read of coal in Bohemia. Of course, coal at that time was used only by blacksmiths. It is instructive that the mountainous regions, which earlier were famous for the manufacture of high grade linen goods, became later the seat of an extensive cotton industry. Of traditional age are other industries, such as manufacture of iron, glass, earthenware, delft-ware, china and beer. There are industries that utilize native materials, or such as completely or partly work up raw materials, imported not infrequently from overseas.

The first group includes the highly developed agricultural industries, viz.: sugar factories, breweries, malhouses, starch plants, fruit preserving plants, coffee surrogates, ham-curing, etc. Considerably advanced is the wood-working industry of which the manufacture of

¹ Act governing the sale of artificial fertilizers at prices commensurate with cereal prices, abolition of state control of private enterprise, etc.

bentwood furniture is the most important export item. Wood is also much used in the production of cellulose and paper.

The mineral wealth of the country provides a base for mining, of which anthracite and lignite are the most important. In 1928 the output of hard coal was 14,560,000 tons, and of brown coal was 20,451,000. This coal output covers nearly the total domestic consumption. Some is exported.

The industries that work up native raw materials comprise the china and earthenware industries.

Metallurgy takes an important place in the national economy. The principal mined metals are ores of iron, lead, copper, zinc, antimony, gold, silver and mercury. In 1928 the following quantities were produced: 1,569,000 T. iron ore, 3,065 T. lead, 3,701 T. copper, 8,039 T. zinc, 221 kg. gold, and 23,881 kg. silver.

The iron ores are for the most part domestically consumed. It is necessary however in the manufacture of iron to import considerable quantities of raw materials. The manufacture of iron is a big industry. It turns out engines, motors, machine tools, complete plants, machinery, locomotives, wagons, motor cars and agricultural machines. The electrotechnical industry has of late assumed considerable dimensions.

To the industries that partly depend on imported raw materials belong the manufacture of window and plate glass, of bottles, and of hollow glass. To the latter belongs the superbly cut Bohemian glass. This group of industries also includes tanning, shoe manufacture,¹ manufacture of gloves and of leather goods in general. Foreign materials are much employed also in the chemical industry which latterly has made great progress.

Almost exclusively imported materials are used in the well-developed textile industry. This industry works up cotton, wool, flax, jute and silk, producing all kinds of textiles. The extent of the textile industry is best reflected in the number of spindles and looms. In 1926 in only the larger mills there were 5,110,973 spinning and 120,543 twisting spindles, 159,309 power looms, and 42,089 other textile machines. Besides, great numbers of workers are employed in the manufacture of ready-mades.

The importance of Czechoslovak industry in its multifarious lines of export activity, for the fiscal period 1928-1929, is analyzed in Table VII, Appendix,² under the several heads: livestock, foodstuffs, raw materials and finished products.

¹ For example, the famous Batá Shoe Factory.

² For statistical details see page 135.

2. CONDITIONS OF AGRICULTURAL PRODUCTION

NATURAL CONDITIONS: Climate is determined by the geographical situation and by the altitude above the sea level. The winter climate lies between the maritime climate of western Europe and the continental climate of Russia; the summer climate is determined directly by solar radiation. The climate along the Moravian-Slovakian border is 50% continental, lying along the skirts of the main routes of the barometric minima of Europe. Czechoslovakia has rather variable weather but the topography makes the climatic and agricultural conditions very favorable in a considerable number of districts. The temperature is fairly uniform. The difference between the hottest and coldest months is 20°-23° C. in the lowlands and about 18° C. in altitudes above 100 meters.

The continental character of climate is reflected in the rainfall. The most rainy months are June and July, and in southern Moravia, Slovakia, and Sub-Carpathian Ruthenia the second or autumn maximum sets in. The disadvantage of a low average annual rainfall (about 650 mm.) is overcome by a favorable distribution of rainfall, two-thirds of which falls in spring and summer months. Evaporation amounts to 60-70% of the rainfall. The anemometric conditions correspond with the geographical situation of Czechoslovakia. The eastern and southeastern winds bring continental weather (dry, clear: in summer warm, in winter cold), the southwestern and western winds bring maritime weather (humid: in winter warm, in summer cool).

SOIL: The geological and soil conditions are not of uniform character. There are almost all kinds of geological formations and nearly every kind of soil, from deep, fertile deposits in level stretches to gravelly lands in mountainous regions; from impervious loams requiring drainage, to sterile sands, at best suitable only for fir culture, and here and there containing lime.

CROP REGIONS: The quality of the soil in combination with the climate and economic conditions, determines the kinds of crops grown. In the lowlands, on the deepest and most fertile soils and up to the altitude of 350 m. above sea level, mostly sugar beets, wheat, and barley are raised, in Slovakia also maize. This is called the sugar-beet area. In higher altitudes (up to 450 m.) is the grain area, the largest, where grains of all kinds are cultivated: wheat and barley in lower situations and rye with oats in higher places. With the increasing elevation, the soils become lighter, sandy, and are suitable only for less demanding crops, e.g., potatoes, rye, and oats. This is a grain-

potato area (up to 700 m.). The highest situations (above 700 m.) suitable still for agriculture, are characterized chiefly by meadows and pastures, the forage crop area. There exist all possible transitions between the various areas, and especially the field cultivation of forage crops (alfalfa, clover, etc.) is common also on the non-forage areas. The intensity of production is in inverse proportion to the altitude above the sea. Similarly, the intensity decreases from the western regions eastward, due in part to the lack of specific advance of the population in the east.

In addition to this the chemical and physical properties of certain soils in favorable combination with climatic conditions have in limited districts brought about the cultivation of special crops of unusual quality.¹ In general, crops are not grown, except in isolated places among mountainous crags, for, where cropping ceases, forests, mostly coniferous, are cultivated and economically exploited.

The location and form of Czechoslovakia is very unfavorable if we consider that the industrial products of the west must be transported to the east, and the agricultural products of the agrarian east must be conveyed to the west across a distance equalling that between Prague and Paris. However, this inconvenient form has brought about a very welcome diversity in the various lines of agricultural production, manifested in an almost complete independence as regards natural commodities and in a steady base for the nutrition of the masses at large.

POPULATION: In order to form an opinion of the economic structure of Czechoslovakia we must know the occupation of each class of the population. To judge whether the population can obtain sufficient food from the land now under cultivation we must consider the density of population per km² and the total population compared to the part engaged in agriculture. To criticize the intensity of agricultural settlement we must learn the number of farm workers employed per 100 ha. of cultivated land exclusive of woods. (Cf. Table I, Appendix.)

Czechoslovakia, with 105 persons per km², ranks with the most densely populated European countries. If its soil can provide a living for such a mass of people it is a sign of advanced agriculture. Regarding the occupation of the population, Czechoslovakia belongs to the group of states which can be designated as agro-industrial in distinction from

¹ These districts are: the barley area of Moravia (the Hana district); the hops area in Bohemia (Zatec); the green crop districts of Všetaty and Znojmo; the fruit regions of Lovosice, Žernoseky and Terešva; the vine growing districts of Mělník, Berehovo, Modrá; and tobacco region in southern Slovakia. In higher places flax and hemp are raised on a larger scale. Mention should also be made of the excellent alpine pastures, the so-called *poloninas* in Sub-Carpathian Ruthenia. These are the main source of horned cattle for general purposes in lowlands.

the group of agrarian states in southeast Europe and from the group of the preponderantly industrial states in northwest Europe (England, Belgium, Holland, and Germany). Also as regards the ratio ($\times 10$)¹ of total population to all agricultural workers, Czechoslovakia with 56 falls in the group between the agrarian and the industrial states. It is neither agriculturally overcrowded, nor is its agricultural land thinly settled, bearing in mind that 28 persons are agriculturally engaged on each 100 ha. of cultivated land, exclusive of woods. Bulgaria is agriculturally overcrowded (58.6), and England thinly settled (7.6).

Respecting the socio-economic position of the agriculturally active population the conditions in Czechoslovakia are quite favorable lately, having been still more improved by the realization of land reform. It has been possible to satisfy to a high degree the innate passion of the rural class for land property. Of the population engaged in agriculture 60% are landowners or dependents of land-owning families and 40% are hired workers. Less than 1/2% of the agriculturally engaged population are land tenants.

PRICE CONDITIONS: The possibility of increasing farm profits by increasing the intensity of operations and thus also promoting productivity depends upon price as well as natural conditions. The prices of agricultural products have been unfavorably affected by the tariffs which before June, 1926, left agriculture unprotected or protected only with the so-called mobile import duties. In 1931 agricultural tariffs proportional to industrial tariffs have been imposed whereby has been obtained a more favorable relation between agri-

TABLE 2. INDEX NUMBERS OF PRICES PAID BY FARMERS IN BOHEMIA
YEAR 1913-1914 = 100

YEAR	PRICE INDEXES				% PRICE DISPARITY ²
	Paid to farmers for		Total Farm Receipts	Expenditure in Agriculture	
	Vegetable Products	Animal Products			
1925 . . .	968	814	888	897	99
1926 . . .	832	732	780	903	86
1927 . . .	964	754	852	933	91
1928 . . .	907	739	815	948	86
1929 . . .	726	808	765	944	81
1930 . . .	575	735	658	903	73

¹ See Table I, Appendix.

² That is, % by which farmer sells his products cheaper than the price he pays for materials consumed in production.

cultural and industrial prices. Unfortunately the world crisis of agriculture, starting in 1928, is constantly increasing the disparity between farm produce sale prices and farm supply purchase prices. This is shown in Table 2. Since 1925 the relation between the prices received for farm products and those paid for farm supplies has been below the parity of the balanced pre-war conditions. Compared with 1925 the farm income from agricultural products has sunk 26% while the expenditure for materials required in agricultural production has risen 1%.

TARIFF POLICY: One of the inner causes of the above-mentioned agricultural price depression is the disparity between the tariff protection on agricultural and on industrial products. In 1920 and 1921, when agricultural products were still controlled by the state (especially crops, animal products were gradually released) so that there was no need for any agricultural tariffs, import duties were put on industrial products which duties represented high multiples of pre-war rates. Beginning in 1921, after the release of animal products from state control, moderate protective tariffs were imposed instead. Later, in 1926, protective tariffs were introduced for other agricultural products (cereals). These tariffs were revised upward in 1930 but being too low they have proved ineffectual. Contrasted with the pre-war conditions, industrial production is protected not less than twice as much as agricultural production. Even on comparison of the Czechoslovak agricultural tariffs with those of the neighboring states Czechoslovakia lags behind in many a productional line, especially so as regards Germany.¹ The Czechoslovak agricultural tariff does not yet form a complete system (duty on meat is higher than on pigs, live weight), and thus the protection against foreign competition is quite insufficient.

TAX CONDITIONS: Tax conditions are very complicated. The general encumbrance of the population with state taxes, duties, monopolies, stamps, and charges in 1928 was 762.39 cr. per head. This figure does not include the public imposts for the various provinces, districts, and communities. The ratio of the tax burden resting on agricultural production as against pre-war conditions is 8:1 (income tax not included). This index is thus higher than the index of the farmer's receipts.

AGRICULTURAL WORKERS AND WAGES: Generally there is no shortage of agricultural workers. Not even the Eight Hours Act of 1919

¹ Duty in Czechoslovakia and in Germany, respectively, on wheat per q.: 55 and 200 Cz. crowns; on barley 70 and 160 crowns; on butter 210 and 403 crowns; on lard 150 and 362 crowns, etc.

has proved detrimental to the conditions in agriculture, because the majority of workers consist of landowners with the dependents of their families. Regarding the wages of hired labor, though lower than in industry, they are advancing at the same rate as the wages paid in industry, i.e., corresponding with the general price index.

EDUCATION AND RESEARCH: Public and private attention to the promotion of agriculture is considerable. In the first place agricultural education is being scrupulously cared for. In proportion to the area and population, agricultural education is very advanced and specialized. In 1930-1931 instruction was given in 276 agricultural schools and in 971 people's schools for farmers, an increase since 1918 of 115 of the former and 943 of the latter. In addition to 3 high schools with departments for agriculture and forestry there are 13 higher agricultural schools, 30 farmer schools, 132 farmer's winter schools, 10 special higher and lower schools of agriculture, 11 higher and lower schools of gardening, 51 home economics schools, etc.

To promote agricultural research and new methods and trends of practical production, and to take care of the technical problems, central State and Provincial Institutes of Agricultural Research have been set up in Prague, Brno, Bratislava and Košice, with a complete network of substations, besides the Institute of Agricultural Accountancy and Economics, to solve economic problems. Some 50 special papers are published to popularize agricultural science, and for the same purpose lectures, exhibitions, agricultural broadcasting, etc., are arranged. Further, the Ministry of Agriculture, Agricultural Boards (public provincial authorities), and the Farmers' Union (highest private organization) with its district branches, and a series of other special agricultural organizations, all watch out for the interests of agriculture.

In a more scientific sense agriculture is aided by II. Department Academy set up by Act of 1920 and the Academy of Agriculture founded in 1925. Over 10,000 highly specialized agricultural coöperatives (buying, selling, credit) with over 1,000,000 members are organized in the Central Coöperative as their highest authority. Agricultural credit is provided by the mutual credit coöperatives¹ and especially by Mortgage Banks as well as by the Provincial and District Farmers' Loan Banks. Agriculture is assisted by another important agent, viz., by subsidies granted from public funds for irrigation and drainage improvements, consisting mostly in laying open drains on level stretches. Since 1919, 203,000 ha. have been thus improved at

¹ The so-called *Kampelička*: Kampelik, name of founder.

a cost of 760 million cr., and executed chiefly in the sugar-beet districts of Bohemia and Moravia-Silesia.

AGRARIAN MOVEMENT: The agrarian movement deserves to be treated at length, on account of its extent, ancient origin, and ideological base. In brief the movement began to spread in Bohemia towards the end of the 19th century. By 1900 the Bohemian Agrarian Party was founded. The movement soon extended to Moravia and Slovakia. In 1901 the new Agrarian Party for the first time took part in the election of the Diet of the Kingdom of Bohemia and won 26 deputies. By the election of 1908 the party had 45 deputies. In the Austrian Imperial Diet in Vienna the Agrarian Party was at that time represented by 5 members. These few figures sketch the pre-war growth of the party.

In 1918 the Agrarian Party under the name of the Republican Party of the Agricultural People and Small Holders in the Czechoslovak Republic united the greater part of the agricultural class. In the first election (1920) the Republican Agrarian Party concentrated as many as 845,000 votes, i.e., 12% of all votes cast. The party sent 41 deputies to Parliament, the largest political party in the Republic. At the parliamentary elections of 1929 the Agrarian Party received 1,105,000 votes, i.e., 15% of all ballots legally cast. In the present House of Deputies the party is represented by 46 seats, i.e., 15.4% of all the mandates (300 deputies¹). Thus the Republican Party has become the nucleus of any majority and its representatives now hold the most important portfolios in the coalition, viz., that of the Interior, of War, of Agriculture and the prime minister. Its ideological and political basis is provided by the principles of agrarianism, democratism, and republicanism.

LAND REFORM: The Land Reform and the distribution of agricultural establishments according to size merits comment. The division of agricultural lands (without woods) 8,650,000 ha., into the various size groups of establishments (and so not according to ownership) has been, on the whole, little affected by the Land Reform, as illustrated by Table 3.² The establishments of small and medium scale agriculturists (to 20 ha.) occupy over 70% of the agricultural area (without woods). As a result of the Land Reform a scant 6% of the agricultural area (without woods) has shifted from group 5 to the other groups (excepting group 1). The area of group 1 has decreased by extension of the establishments through Land Reform

¹ There are 15 political parties sending deputies to the Lower Chamber. The next largest party is the Socialist Democratic with 43 deputies. Ed.

² See Reference 6, Bibliography.

TABLE 3. DIVISION OF AGRICULTURAL AREA¹

SIZE GROUP OF ESTABLISHMENT	% OF AGRICULTURAL AREA		LAND REFORM HAS INCREASED (+) OR DECREASED (-) SIZE OF GROUP
	Before Land Reform	After Land Reform	
1. 0- 2 ha.	7.8	7.3	- 6.0
2. 2- 5 ha.	14.3	15.6	+ 9.0
3. 5- 20 ha.	44.1	47.6	+ 8.0
4. 20-100 ha.	17.8	18.8	+ 6.0
5. over 100 ha.	16.0	10.7	- 33.0
Total	100.0	100.0	—

allotments and consequent transfer to group 2. In the composition of the size groups no great changes have taken place. This means that the Reform has in no wise affected the course of agricultural production, whether from the economic or the social point of view. Naturally the conditions of the enterprise have been less affected by the Reform than the status of ownership. Thus by Dec. 31, 1930 as a result of the Reform, 11.2% of the total area (woods included), i.e., over 1,500,000 ha., had passed into the hands of new holders, old landowners having retained 8.8% while 9% of the total area is still under seizure and not distributed.

Before the Land Reform the inequity of land distribution was not so much due to the fact that large holdings, compared with other states, occupied a disproportionately large area, as that full 60% of the large estate area (above 100 ha.) were in latifundia (estates over 1000 ha.); in the western provinces even as much as 73%. Titles to latifundia were not secured by free competition for the soil but by political power in the past centuries. Two-thirds of large landed estates were in the hands of the quondam aristocracy, of the Church, Crown or State, factors which in the past represented the political power. A wholesale concentration of lands began after Bohemia had lost her independence² when the property of more than 500 Bohemian nobles and landowners was confiscated in order to augment the lands of those nobles who fought in the ranks of the enemy of the Bohemian people.

However, the Land Reform has not been brought about by reason of this historical injustice but by economic, social and political considerations which were in contradiction of the idea of latifundia. The Reform served as a means of suppressing the post-war revolu-

¹ Not including woods.

² Battle of the White Mountain in 1620.

tionary currents and mitigating the avidity for land. Land Reform has not altogether removed the large estates. Far more than the legally determined maximum of 250 ha. has been left to former holders in order to preserve and maintain historically valuable and artistically precious buildings, parks, etc.

The Land Reform has been carried out organically, without precipitation, on a legal base, and with proper indemnification of former landowners. Its realization signifies an economic profit for the State, for on the whole the animal production has increased and the balance of trade has been relieved just where the greatest deficit is recorded (swine, fats). The Reform has strengthened the agricultural element that in its sound conservatism represents the social base of the nation. This element is especially important owing to the fact that so considerable a part of the former Austrian industry with the workers involved has remained in Czechoslovak territory. Hence the Reform has also helped to readjust social equipoise. If on a given area of small rural holdings there live three times as many agriculturally active persons as on a like area of large estates, then the multiplication of small and medium scale holdings signifies an extraordinary invigoration of the inland market for industrial and mechanical products. This side of the Reform is of profound importance to the Republic, because its industry is largely dependent upon exports. Thus the Land Reform performs its task both in the economic and the social consolidation of the State and has in a penetrating manner facilitated the dangerous and abrupt change in the structure of the State.

3. ORGANIZATION OF AGRICULTURAL PRODUCTION

Agricultural production is organized on the principle of private enterprise on the separate establishments. Apart from natural conditions (climate, altitude, quality of soil) characteristic of the agricultural areas, considerable influence is exercised on organization by the size of the enterprise. Organization of agricultural production means the choice of the most favorable conditions of production and the determination of their extent, and the choice of the most suitable means of production together with their intensity. The organization of agricultural enterprises is characterized especially by the relationship of cultures, crops, animals, and the amount of the invested capitals.

RELATION OF CULTURES: The base of agricultural organization is given by natural conditions reflected in the relation of the various

cultures. A synopsis of the division of the various cultures in selected European states is given in Table II, Appendix, showing in fourteen European countries Yugoslavia with the least of its total area under cultivation (46.6%) and Hungary with the most (81%).

The greatest area of all the cultures in Czechoslovakia is occupied by fields. These, per unit of area, require a greater expenditure of labor and capital than all the other cultures (except gardens and vineyards) and their high percentage is a sign partly of generally favorable conditions for agriculture, partly of intensiveness of this production. Contrariwise, the rising percentage of meadows, pastures, forests and uncultivated ground is a sign of extensive conditions. There is thus a decline in the intensity of agricultural production from west to east, as set forth in Table 4.

TABLE 4. DISTRIBUTION OF AREA IN CULTURES

PROVINCE (Country)	CULTIVATED AREA IN % OF TOTAL AREA						REMAINDER AREA IN % TOTAL AREA			TOTAL
	Fields	Gardens	Vineyards	Meadows	Pastures	Total	Forest	Water	Other	
Bohemia .	47.8	1.3	0.01	10.8	4.7	64.6	30.2	0.9	4.3	100.0
Moravia .										
Silesia .	51.5	1.3	0.2	7.5	5.3	65.8	29.8	0.4	4.0	100.0
Slovakia .	38.7	1.1	0.2	8.9	11.9	60.8	34.1	0.2	4.9	100.0
Sub-Carpathian Ruthenia .	18.1	0.9	0.3	13.8	14.6	47.7	48.7	0.3	3.3	100.0
Czechoslovakia .	42.7	1.2	0.1	9.8	8.2	62.0	33.1	0.5	4.4	100.0
Czechoslovakia in 1000 ha.	5991.7	163.7	16.9	1,372.1	1,151.7	8,696.1	4,647.8	74.6	617.8	14,036.3

In comparison with the other European states the forest percentage of 33% in Czechoslovakia is relatively high. In Sub-Carpathian Ruthenia forests cover almost one-half of the entire area.

The quality of cultivated areas is comparatively well reflected by the net cadastral yields recorded in the middle of the past century and partially revised in 1896. These represent fairly an estimate of the lands as regards their yields in cash for the assessment of land taxes. The out-turn per ha. of the various cultures has up to the present remained a good criterion of the quality of the soil; for account has been taken, during occasional revisions of the cadaster, of changes in the cultures or in the quality of the land resulting from improvement. The characteristic variations in fertility of the provinces of the several

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crop areas are given in Table 5. Fertility decreases from west to east and from the sugar-beet area to the forage crop area.

TABLE 5. NET YIELDS IN CROP AREAS¹

PROVINCE (Country)	PRODUCTION AREAS				AVERAGE OF PROVINCE (Country)
	Sugar Beet	Cereals	Cereals Potatoes	Fodder	
Bohemia	36.89	23.09	16.65	19.09	23.89
Moravia-Silesia	39.31	25.19	14.53	10.03	24.27
Slovakia	23.64	14.06	7.38	3.85	12.01
Sub-Carpathian Ruthenia . . . . .	....	8.31	....	2.63	4.78
Czechoslovakia	32.82	19.77	12.92	8.33	18.89

The relationship of the individual cultures (exclusive of woods) is shown in Table 6.

TABLE 6. RELATION OF CROP CULTURES TO ARABLE AREA

PRODUCTION AREA	FIELDS	MEADOWS	GARDENS	VINE- YARDS	PASTURES	TOTAL
Sugar Beet	84.2	7.6	2.3	0.3	5.6	100.0
Cereals	72.0	14.5	2.1	0.3	11.1	100.0
Grain-Potato	66.2	18.0	1.6	..	14.2	100.0
Fodder	50.7	24.4	1.3	..	23.6	100.0

As intensity of production decreases as shown in field crops, extensive culture as shown in meadows and pastures increases. The influence of the size of agricultural enterprise on the percentage of cultures is not so great as that of the productional areas, as brought out in Table 7.

TABLE 7. EFFECT OF SIZE OF CULTURE ON INTENSITY²

ENTERPRISE SIZE OF GROUP	FIELDS	MEADOWS	GARDENS	VINE- YARDS	PASTURES	TOTAL
2- 5 ha.	73.5	15.1	1.9	0.4	9.1	100.0
5- 20 ha.	74.2	14.7	1.5	0.2	9.4	100.0
20-100 ha.	75.4	14.7	1.3	0.1	8.5	100.0
Above 100 ha.	76.9	10.8	0.9	0.3	11.1	100.0

The manner in which arable lands are exploited is, besides the relation of individual cultures, decisive for the organization of agricultural production. Table III, Appendix, shows the utilization

¹ Average of net cadastral yield in crowns per 1 ha. of agricultural area

² Relation in % of cultures to individual size groups of enterprises.

of arable land compared with selected European states. In relation to cultures Czechoslovakia is between the littoral states of western Europe having a high percentage of field fodder crops, and the continental states of eastern Europe with high grain culture. If sugar-beet culture is indicative of the most intensive agricultural conditions, Czechoslovakia, Belgium and Holland occupy first place.

DIVERSIFICATION: In Czechoslovakia a relatively equal area is devoted to cereals (wheat, rye, barley, oats), succeeded by potatoes and fodder crops¹ each covering approximately 12 to 17% of the arable land. A smaller area is sown to maize, pulses and industrial crops (flax, hemp, hops, poppy, rape, etc.). About 3% of fields lie fallow, unsown. This area increases from the west to the east. Thus specialization is relatively symmetrical and diversified.

The choice of crops is decided first by the conditions of the soil and climate (altitude) as shown by Table 8 below, which gives the relation of cultures according to the various agricultural production areas. The comparatively high percentage of fodder crops in the sugar-beet area is explained by a shortage of natural fodder areas (meadows and pastures), and by intensive dairy farming to supply large towns and overcrowded industrial districts. Table 8 gives the characteristic crops of the production areas: (1) wheat, barley, and sugar beet on the sugar-beet area; (2) all cereals on the grain area; (3) rye, oats, and potatoes on the grain-potato area; and (4) on the fodder area the same cereals as on area (3), plus a considerable amount of mountain meadows and pasture.

TABLE 8. RELATION OF PRINCIPAL CROPS IN CZECHOSLOVAKIA

CROP	IN PRODUCTION AREA OF			
	Sugar Beet	Grain	Grain-Potato	Fodder
Wheat	17.3	16.3	8.4	4.6
Rye	14.1	18.9	21.9	16.6
Barley	19.4	10.5	7.6	8.7
Oats	6.0	13.3	21.6	21.8
Maize	2.4	3.0	0.1	1.7
Potatoes	8.4	11.6	16.2	16.7
Sugar Beet	12.0	1.9	0.3	0.1
Fodder Crops ²	16.1	17.7	17.9	18.4
Other Crops	3.7	4.5	3.9	4.3
Fallow Land	0.6	2.3	2.1	7.1
Total % arable land	100.0	100.0	100.0	100.0

¹ Temporary meadows, clovers, fodder maslin, fodder beet and other root crops for fodder.

² Including root crops for fodder.

The significant relation of cultures from the standpoint of enterprise size of groups is shown in Table 9. The family conditions, especially the number of the enterpriser's dependents, exercise a greater influence than natural conditions.

TABLE 9. RELATION OF CROPS TO SIZE OF ENTERPRISE

SIZE GROUP OF ENTERPRISE	CROPS ON ARABLE LAND IN % OF ARABLE LAND								Total
	Wheat	Rye	Barley	Oats	Potatoes	Sugar Beet	Fodder	Other ¹	
2- 5 ha. . . .	11.9	21.2	13.5	11.5	13.6	3.4	16.3	8.6	100.0
5- 20 ha. . . .	12.4	18.9	14.3	15.0	10.0	3.4	17.3	8.7	100.0
10-100 ha. . . .	11.4	16.7	13.2	15.8	8.0	6.4	20.2	8.3	100.0
Above 100 ha. . . .	13.8	12.5	18.0	9.7	7.4	11.3	17.7	9.6	100.0

As the size of the enterprise increases the percentages of rye and potatoes fall and of barley and sugar beets increase.

IMPROVEMENT OF FIELD FARMING: The object of crop improvement activities is to increase yield and to improve quality of crops important from the agricultural and economic point of view. The improvement is carried out according to the varying character of the individual regions. In Bohemia, Moravia, and Silesia the improvement is continued along the lines of the pre-war activities of the agricultural boards and societies. In Slovakia and Sub-Carpathian Ruthenia it was necessary to start from the very beginning through the intermediary of the agricultural district inspectors, and later to work also through the Agricultural Board for Slovakia and through the Institutes for Agricultural Research and their various stations.

The improvement activities are headed by the Ministry of Agriculture. In the early post-war years these activities were but slowly understood in practical agriculture, especially so in Slovakia and Sub-Carpathian Ruthenia. Later on, after conditions had straightened out both inland and abroad, these activities were extended and improved, particularly due to the release of trade control, so that in later years, especially in Bohemia, Moravia, and Silesia the improvement action was demanded on such a scale that it was impossible to satisfy all the applicants owing to insufficient credit funds of the Ministry of Agriculture.

The activities of the Ministry of Agriculture directed toward improving crops are: (a) cultivation of field crops: experiments to demonstrate the importance of proper tillage by means of the principal

¹ Crops and fallow land.

agricultural machines and intensive methods; to show the usefulness of valuable, well-selected seeds; of care given to crops in growth; experiments with the various species of cereals, legumes, chicory, oil-yielding plants; experiments with cultures of hops, etc.; (b) cultivation of fodder crops on fields and meadows: the propagation of fodder plants on the fields, especially of clovers; fodder beets, carrots, and of various kinds of maslin; (c) demonstration experiments, etc.

The improvement activities respecting meadows are of large importance. The area in meadows is 1,500,000 ha. So, even a slight increase in fodder yields signifies a great economic profit reflected partly in a larger number of cattle, and partly in lower imports of concentrates.

SEED PRODUCTION: The production of seed grains and of seeds in Czech countries was neglected under Austrian rule, exactly as was agricultural production in general. The Czechoslovak Ministry of Agriculture has therefore concerned itself with this production line, partly by legislation, and partly by granting subsidies towards the purchase of seed and plant materials. Regarding the legislation, the Act of 1921 deserves attention, recognizing the origin of varieties, seed grains, and plant material, and providing for tests of culture plants varieties. This Act fills its task excellently, for it enables the growers to give their improved seed and plant materials an adequate, legally protected designation by which they are distinguished from illegal, inferior materials. In addition, consumers, by purchasing a definite grade of legally certified grain or plant materials, are guaranteed a standardized quality at a fair price. A supplementary Act was passed in 1924, the object of which Act was to enable plant breeders and propagators of cross-pollinating plants to work undisturbed. This Act prohibited cultivation of the same or allied species or varieties in the vicinity of grounds on which such improving is being done, in order to prevent undesirable cross-pollination. Another legislative measure affecting seed production was the Government Order of 1920, wherein were laid down rules for dealers in seeds of red clover and alfalfa. This Order entrusted the control to the public institutes and stations for research and the control of seeds.

The *subsidizing* of purchases of suitable improved seeds and plant materials in order to propagate remunerative varieties is very important from the standpoint of national economics. In this way it is possible for Czechoslovakia to become independent in the production of the most essential commodities of life, particularly of wheat and early potatoes. In order also that less advanced farmers might learn, on the strength of their own observations, of the influence of improved

varieties, etc., on the yield of field crops, and then give up cultivation of unfit varieties, the Ministry of Agriculture grants every year subsidies to coöperative organizations so that they can provide their members with recognized seeds at reduced prices. In granting these subsidies the Ministry of Agriculture also makes it a condition that the various crops shall be grown in regions with congenial conditions, and that the various larger or smaller districts shall grow, within their natural possibilities, *only one variety*, or only a limited number of the most suitable varieties.

State Care of *Viniculture* consists especially in the realization of important preparatory schemes essential to bring about conditions on which depends the success of all activities and efforts for the greatest possible development of this line. For that purpose the State has organized a special vinicultural service, and has also appointed vineyard overseers and coaches whose first duty it is to instruct winegrowers as to the use of American stocks in viniculture, and to impart to them the latest information respecting vineyard and wine vault management. The model State Experimental Vineyards and Cellars, founded successively in all the important viniferous regions, set a good example to the viniculturists. These experimental vineyards have also helped to make considerable progress towards the solution of the extremely important question of a correct choice of varieties suitable for the various wine-growing districts.

FRUIT CULTIVATION, GARDENING, AND MARKET GARDENING: The importance of fruit cultivation for agriculture will be best borne out by the fact that in Czechoslovakia there are about 34 million fruit trees yielding under normal conditions some 82,000 carloads of fruit to the value of about one milliard Cr. The measures taken by the State in order to improve horticulture had for their object the organizing of State fruit tree nurseries, the improvement of fruit trade, the encouragement of efforts for the establishment of a direct contact between the producer and the dealer, the foundation of orchards on waste communal areas and in general the rationalization of fruit culture.

Respecting improvement activities of market gardening the chief object is the increase of domestic yields and the development of domestic cultivation of some vegetable species, imported in large quantities, e.g., onions, garlic, cauliflower, tomatoes, and early greens. In Bratisláva a State Experimental Vegetable Garden has been founded and its object is to furnish information on the cultivation of new vegetable species, to care for the improvement of domestic vegetables, to improve cultivation methods, and in general to further new trends in the field of market gardening. For the promotion of garden-

ing, an arboretum has been founded at Topolčanky in Slovakia and another site, Průhonice, near Prague has been purchased. In order to encourage the cultivation and study of medicinal plants large plantations have been established in connection with the State Institutes for Agricultural Research and with regional Stations. These plantations serve not only the purposes of research but supply also seedlings and seeds to the interested domestic producers.

PROTECTION OF PLANTS AGAINST DISEASES: Regarding the protection of plants from harmful agents, former Austria-Hungary restricted its activities to the enactment of a few rules which were not observed, as their enforcement had been entrusted to communities with insufficient jurisdiction and in many instances perhaps also with little good will and technical ability to compel observation of these rules. In the post-war period, light penalties, especially in view of the depreciation of Czechoslovak currency and the inadequacy of information as to the significance of detrimental factors in agriculture, did not create respect for legal measures. As a result an intelligent and scrupulous farmer did nothing to check specified detrimental factors, especially when he saw that, except by concentration, he could not obtain results. Thus in order to place plant sanitation on a modern base, to remove all surviving deficiencies, and to organize a phytopathological service, an Act was passed in 1924 extending protection to plant production. Against the old legislative measures this Act has the advantage that judicial authority has been vested in political authorities of the first instance. These are obliged to cooperate through their organs for the enforcement of the law. Further advantage of this Act is that technical control has been entrusted to the Institutes of Agricultural Research.

In connection with this Act a Government Order has also been issued providing that measures be taken to check potato rot and to exterminate rose bugs and mice. By Notice of the Ministry of Agriculture compulsory cultivation of rot-resistant potato varieties has been ordered in infested and suspected regions. In order to increase interest in the establishment and equipment of stations for the purification and selection of grains and seeds for sowing, the Ministry of Agriculture grants subsidies every year, subject to special conditions, to agricultural cooperative societies towards the cost of station machinery. With this support the societies have up to the present set up 65 large purification and selection stations, 25 small purification stations and over 40 stations for the purification of clover and grass seed. Subsidies are also granted to the newly set up stations for the treatment of cereal seeds.

ORGANIZATION OF CATTLE FARMING: The relative status of animal husbandry—horses, cattle and swine in Czechoslovakia and selected European states—is given in Table IV, Appendix.

The figures expressing the status of cattle per 100 ha. of agricultural area (exclusive of woods) show the eminence of cattle farming in the organization of enterprises, as the data on the number of animals per 1,000 inhabitants indicate the importance of cattle farming from the standpoint of providing supplies. In Czechoslovakia the most numerous class is horned cattle, and of this again milk cows. The importance of cattle will be still better seen on comparison of the live weights of animal classes: Of the total live weight of livestock, cattle constitutes 77.3%, of which milk cows make up 57%; horses 13.4%; swine 6.2%; sheep 0.7%; poultry 1.2% and goats 0.2%.

The considerable reduction of cattle during the war was rectified in the first three years after the war, since when the number of cattle has risen.

INTENSITY: As in vegetable production, so in animal production intensity is high in the west and low in the east of the Republic. The marked decrease is in cattle, while the reversal in trend in sheep is explicable partly by extensive pastures, partly by the custom of the local people to wear fabrics made at home.

TABLE 10. LIVESTOCK DISTRIBUTION¹

PROVINCE	HORSES	CATTLE	SWINE	SHEEP	GOATS	POULTRY	TOTAL
Bohemia	34.9	314.0	19.0	1.5	1.0	4.4	375.3
Moravia-Silesia	53.2	255.4	29.5	1.1	1.0	5.2	345.4
Slovakia	47.0	183.2	15.3	10.4	0.1	3.1	261.3
Sub-Carpathian Ruthenia	32.2	139.4	10.6	14.1	1.1	2.0	200.0
Czechoslovakia	42.6	246.0	19.3	5.3	0.7	3.9	318.8

The relation of animals in regions of agricultural production is shown in Table 11.

TABLE 11. STATUS OF LIVE STOCK ON AREAS OF AGRICULTURAL PRODUCTION

PRODUCTION AREA OF	PER 100 HA. OF AGRICULTURAL AREA												TOTAL
	Number of Head						Live Weight in Quintals						
	Horses	Cattle	Swine	Sheep	Goats	Poult.	Horses	Cattle	Swine	Sheep	Goats	Poult.	
Sugar Beet	13.2	73.2	33.1	11.5	2.2	275	60	281	25	3.8	0.6	4.9	376
Grain	10.9	69.4	28.8	9.4	2.4	232	45	247	20	2.4	0.7	4.1	321
Grain-Potato	7.0	72.4	29.0	36.8	2.2	228	29	252	19	7.6	0.6	4.2	313
Fodder	8.8	64.1	19.2	44.9	2.7	150	33	205	13	10.1	0.8	2.5	265

¹ Status per 1 ha. of agricultural area (exclusive of woods) in kg. of live weight.

It is worth while to compare Table 11 with the percentage that fodder crops (meadows, pastures, field herbage and fodder root crops) constitute of the agricultural area: In (1) sugar-beet area fodder crops cover 29.3% of the agricultural area, (2) grain area 43.3%, (3) grain-potato area 50.1%, and (4) fodder area 65.9%. Despite the fact that the area devoted to fodder crops and providing a base for animal farming increases with the intensity of the area, the status of animals per 100 ha. sinks. It is *irrefutable proof* that the production of fodder in intensive regions is greater than in extensive regions. For an intensive area, especially of beet production, it is of course favorable that apart from the staple crops there remains a great quantity of fodder offal (straw, cossettes, beet tops, vinasse, molasses, etc.), and that rations are largely supplemented by purchased concentrates. Thus, e.g., the quantity of such feed per 1 ha. of agricultural area is respectively for the above four regions, (1) 115 kg., (2) 57 kg., (3) 42 kg., and (4) 36 kg.

Still more striking than the influence of varying conditions of production on the status of cattle is the influence of the size of enterprise or of the number of the enterpriser's family members per 100 ha. of the area, as set forth in Table 12.

TABLE 12. LIVESTOCK RELATION TO SIZE OF ENTERPRISE¹

SIZE OF ENTERPRISE	PER 100 HA. OF AGRICULTURAL AREA												TOTAL
	Number of Head						Live Weight in Quintals						
	Horses	Cattle	Swine	Sheep	Goats	Poult.	Horses	Cattle	Swine	Sheep	Goats	Poult.	
2-5 ha. . .	7.4	100.3	50.3	12.6	5.0	409	27	340	30	2.3	1.4	7.4	409
5-20 ha. . .	12.4	69.6	28.3	16.6	2.3	232	51	239	21	3.5	0.7	4.1	320
20-100 ha. . .	10.9	57.6	18.4	27.3	1.5	153	49	207	15	6.5	0.4	2.6	280
Above 100 ha. . .	4.2	44.1	5.4	55.7	0.0	12	19	204	4	16.1	0.0	0.2	243

The status of each class (except sheep) decreases almost regularly with the increasing size of the establishment, more in number of head than according to live weight. This is another proof that with the increasing enterprise size, the average live weight of the individual animal increases also. Thus, e.g., the average live weight of cattle, according to the enterprise size, is 140 kg. for the 2-20 ha. class, 360 kg. for the 20-100 ha., and 460 kg. for the "above 100 ha." The size of the enterprise is decisive in the choice of production line in cattle farming. In small enterprises dairy farming is predominant, while on large estates dairying recedes and beef cattle farming prevails. The

¹ Status per 100 ha. of agricultural area according to the various enterprise sizes.

following are the live weights of beef cattle per hectare in the enterprise size categories (Table 12): (1) 2-5 ha., 1 kg., (2) next, 8 kg., (3) next, 18 kg., and largest, 18 kg.

HORSE RAISING: Horse breeding is governed chiefly by the requirements of agriculture, army, and industry, and is in high degree influenced by natural conditions and the cultural level of the agricultural class. For that reason in Czechoslovakia horses of various breeds are raised, beginning with the heaviest occidental horses of Belgium blood in the west of the Republic and ending in the light Arabian or small mountain horse in the east. In Bohemia is raised the Belgian and the oriental horse of the Oldenbourg stock. In Moravia both the occidental and the oriental horse are bred, the latter being of the stronger English or of the Arabian halfbred type. In western Slovakia they raise in the southern districts the English thoroughbred, in the northern regions the Arab and the Lipicaner. In the mountainous parts of Slovakia and Sub-Carpathian Ruthenia they raise the Hucul,¹ a hardy horse of smaller stature. There is an effort to meet the demand for horses of any strain by domestic production.

CATTLE RAISING: The Act and Order governing the propagation of special purpose animals divides the entire area of the Czechoslovak Republic into specialized breeding regions. Based on this Act breeders raise mostly the red-dappled cattle of the mountain type, derived from the original domestic red cattle crossed with Bernese and Simmenthaler strains. An exception is found in Slovakia only, where in the mountainous region the Pinzgau breeds are raised, and in similar Sub-Carpathian territory where are raised partly the Pinzgau, and partly the gray-brown Carpathian cattle. In eastern Slovakia and in the lowlands of Sub-Carpathian Ruthenia are met the remnants of lowland cattle and the buffalo. Beef cattle farming is susceptible of great development and its improvement both in point of quality and quantity is very desirable.

The improvement of cattle farming constitutes the program of the technical agricultural circles which especially encourages rational feeding, correct handling and rearing. The legally regulated propagation is supplemented by steadily increasing stable control extended to stock and recorded herds. The object of beef cattle farming is the improvement of the above-mentioned breeds for all purposes, the most important being milk yield, then beef production, then draft.

PIG FARMING: The object of pig farming is to produce a sound farm-use pig which will satisfy the consumer with quality products.

¹ Huculs are the inhabitants of the Carpathian Mountains; pronounce "hootsool."

To this end the selection of breeds is guided both by physical signs and usefulness of the animal, determined by definite standards. Pig improvement activities center around officially recognized breed herds. Of the several breeds the most numerous is the "fine white" hog remarkable for its quick growth, remunerative feeding, and excellent meat quality. It is either marketed as fresh pork or first processed in smokehouse products, e.g., the excellent "Prague ham." In the eastern part of the Republic they breed the bacon type, i.e., the "mongolica."

SHEEP FARMING: In the western part of the Republic sheep farming has declined considerably in importance. Sheep farming chiefly for wool, formerly flourishing, declined in consequence of severe foreign competition. In the east, particularly in the foothills and mountainous regions where up to the present exists an abundance of sheep pastures, the importance of sheep farming is still considerable. Sheep are here kept for several purposes, especially for milk and wool. The milk is made into cheese and from the coarse wool the peasants make articles of apparel, carpets, etc. The object of breeding is to produce a sheep with finer wool and high milk yield. Special care is devoted also to the fur sheep type.

GOAT FARMING: Goat raising is wide-spread, especially in the vicinity of larger towns and industrial districts in the western part of the Republic. The socially weaker class uses the goat as substitute for the cow. The white hornless goat predominates. An effort is made to obtain a sound and useful type by selective breeding, proper rearing and good feeding.

POULTRY FARMING: Poultry raising is represented in the first place by the breeding and fattening of the Bohemian goose remarkable for its palatable meat, large liver, fine feather quality, low percentage of offal, etc. The centers of goose farming are particularly in southern Bohemia. Chickens are raised in considerable numbers, not only on small enterprises but also on most of the farms. Therefore there is no possibility for any great number of specialized poultry farms operated as, e.g., in England, America, etc. To secure independence of the importation of foreign eggs, egg-laying contests are arranged and egg-records are taken of chicken breeds. Racially the breeds have not yet attained any definite character. The breeds are represented by Rhode Island Reds, White Leghorns, Wyandottes, Orpingtons, etc. While eggs are still imported, fattened Bohemian geese and feathers are exported.

SILK PRODUCTION: Sericulture exists on a small scale in Slovakia where it finds favorable climatic, social, and economic conditions.

FISH PRODUCTION: Fish farming is represented by the quondam celebrated carp of Třeboň from the ponds of southern Bohemia (Třeboň, Vodňany, Blatná). Most of the ponds belong to the state-owned estates. Trout culture has favorable conditions in the mountainous districts. In order to encourage fish consumption increased care is paid to planting running waters with fish, and to preventing stream pollution.

APICULTURE depends on amateurs from the ranks of agriculturists. The State Apicultural Institute with the assistance of a network of breeding and fertilizing stations and with the help of trained instructors works in a very promising manner for the improvement of Bohemian bee-keeping, specifically by extending bee pastures, disseminating technical knowledge, and protecting domestic production against imports.

AGRICULTURAL INDUSTRY: The agricultural industry of Czechoslovakia is reputed all over the world. Almost one-fourth of the weight of the total harvest is processed. The Czechoslovak industry is organized in various forms of enterprise, viz., in plants belonging to individual agriculturists or other kind of enterprisers, to joint-stock companies, and to coöperative societies. Plants now at work include: 148 sugar factories, 450 breweries, 897 distilleries, 80 starch plants, 12 yeast plants, 108 independent malthouses, 396 malthouses connected with breweries, 380 factories for processing fruit and vegetables, over 600 dairy factories, nearly 10,000 flour mills which besides grinding domestic grains also grind imported cereals, 50 chicory plants and factories for the production of coffee admixtures, etc.

CAPITAL VALUE OF AGRICULTURAL ENTERPRISES: The aggregate value of agricultural property (exclusive of forests) is estimated by the Czechoslovak State Institute of Agricultural Accountancy and Economics at 150 milliards Cr. Of these (1) lands are 50.8%, (2) fruit trees 1.3%, (3) buildings 20.0%, (4) livestock 14.4%, (5) inventory 7.3% and (6) supplies (except cash), 6.2%. Both the absolute value of the individual capital and the mutual ratio of the latter change considerably with the conditions of production, especially with the production region and with the enterprise size. Thus, e.g., the aggregate capital per hectare of agricultural area is in regions (A): (1) sugar beet 25,400 Cr., (2) grain 17,700 Cr., (3) grain-potato 14,400 Cr., and (4) fodder 10,800 Cr.; and in enterprise (B): (1) 2-5 ha. 19,900 Cr., (2) 5-20 ha. 17,100 Cr., (3) 20-100 ha. 16,800 Cr. and (4) above 100 ha. 14,400 Cr. Regarding the extensive relations, the capital of land and building predominates, in the intensive relations on the contrary the working capital (the capital of the tenant) predominates.

FORESTRY: The forests of the Czechoslovak Republic produce as an annual average about 16,000,000 cubic meters of timber on an area of 4,600,000 ha. Part of this timber is exported, the remainder is worked up in a great variety of establishments, or is utilized as fuel and half-finished products.

The forestry of Czechoslovakia is of the most varied and heterogeneous nature. In Bohemia, Moravia, and Silesia, where there is a dense net of railways and highways, an adequate distribution of the output of the annual crop is possible. The proximity of both domestic and foreign industrial centers makes feasible a careful immediate sorting of timber in the forest. In Slovakia and Sub-Carpathian Ruthenia it was necessary first to build many miles of narrow-gauge railways, of highways, and to invest many millions of crowns in order to convert the streams and rivers into waterways suitable for timber transport. Production is centered in the districts of these new routes and the market is supplied with large quantities of unworked timber destined for export, since in the territory there is a shortage of sawmills and of other woodworking plants.

Generally speaking the output of timber comes on the market as stock to be further worked up, or as mining lumber, sleepers, telegraph poles and other half-finished wood products for domestic and foreign consumption, paper pulp wood, and fuel. Naturally, the best prices are to be had for timber suitable for technical conversion, while fuel sells at a minimum. The ratio of the crop of quality timber to fuel is called the percentage of utility which in the western provinces fluctuates between 70 and 80%, and falls in the eastern below 50%, according to the kind of timber. Both lumber and pulp wood is worked up in domestic woodworking plants, sawmills, match plants, cellulose works, cooperage and furniture factories. While the west of the Republic demands mostly the wood of coniferous trees used chiefly by builders, joiners, and pulp mills, the south of Moravia supplies the main part of timber from deciduous trees, worked up in factories producing parquetry, veneers, or bent-wood furniture. Eastern Slovakia exports the greater part of its production.

In the Republic there are 1,600 woodworking plants of which fully four-fifths are in the so-called historical countries, and the rest in Slovakia. Numerical first place is occupied by the sawmills usually connected with box works and woodwool plants. In some localities special industries have arisen, such as the manufacture of sound boards, wooden toys, wood alcohol, acetic acid, or other derivatives of tar. The chemical plants consume large quantities of cheap raw materials, especially of beech wood, and are distributed chiefly

throughout Sub-Carpathian Ruthenia. Still they have to meet the keen competition of synthetic products. Mention must also be made of the declining tan-bark production in which in former days large quantities of beech and pine bark were utilized, this industry representing the main source of income for many forest enterprises. These enterprises have been now compelled to change their program, owing to the importation of cheap tropical woods, very rich in tannin. However, the progress in chemical science has brought about new industries. Taking first place is the manufacture of heat and sound insulating boards for concrete structures, and the production of beech pulp cellulose. By the latter industry, particularly remote Sub-Carpathian Ruthenia benefits, since it is mostly overgrown with extensive virgin beech forests.

As to the ownership, 16% of the total afforested area is held by the State (notably in Slovakia and Sub-Carpathian Ruthenia), other public authorities (chiefly communities) holding another 16%, the remaining 68% being in private hands.

4. AGRICULTURAL PRODUCTION RESULTS

Reliable statistical results of agricultural production in European countries are available only on plant crops and agricultural industries. Similar data relative to animal production are either entirely lacking or fragmentary.

The advance of agriculture in vegetable production is best expressed by the hectare yields of the principal crops. Hence in Table V (Appendix) the hectare yields of most European countries are compared according to the five-year average 1926-1930, or the four-year period of 1926-1929.

The yields of the principal crops in Czechoslovakia are on a level with the yields recorded in the agriculturally advanced states of western Europe and are above the yields of the agrarian states of east and south Europe. The influence of productional regions (influence of soil and climate conditions) upon the yields is shown in Table 13.

Yields during the last 30 years (excepting the war and post-war years) show a rising tendency. Comparing the post-war period 1925-1929 with the pre-war 1909-1913 we find that yields have risen in the case of cereals by 10%, of potatoes by 25%, while the yield of sugar beets has increased by but 2%. Sugar-beet culture was already on a high level before the war.

⁹
TABLE 13. YIELD OF SIX CHIEF CZECHOSLOVAK CROPS

PRODUCTION REGION	YIELDS PER 1 HA. IN QUINTALS					
	Winter Wheat	Winter Rye	Barley	Oats	Maize	Potatoes
Sugar Beet	20.6	18.8	21.8	20.9	21.1	160.4
Grain	16.3	16.6	18.0	18.0	15.7	141.2
Grain-Potato	16.4	17.6	15.4	17.7	15.0	147.0
Fodder Crops	14.9	14.9	13.4	14.1	14.6	118.3

The influence of enterprise size on yield is not so remarkable as that of production region, nevertheless it is distinctly noticeable, as shown in Table 14. *Yields increase with the size of the enterprise.*

TABLE 14. YIELDS IN ENTERPRISE SIZE¹

ENTERPRISE SIZE	YIELDS PER 1 HA. IN QUINTALS					
	Wheat	Rye	Barley	Oats	Potatoes	Sugar Beet
0- 2 ha.	15.3	14.7	16.6	15.5	100.0	203.0
2- 5 ha.	16.3	15.4	16.4	17.4	111.0	291.0
5- 20 ha.	17.5	15.5	17.7	17.0	110.0	295.0
20-100 ha.	18.6	16.3	18.7	17.7	114.0	307.0
Over 100 ha.	20.0	18.9	21.9	19.8	116.0	296.0

This tendency is valid despite the fact that Table 14 cites average results in investigations for 1909-1913 with reference to estates having technically trained staffs, and despite the fact that production data do not correspond exactly with official statistics.

For the sake of completeness Table 15 shows a synoptic comparison of the production of the principal agricultural crops and agricultural industries of Czechoslovakia with similar world production. This synopsis shows in which production lines Czechoslovakia excels.

In world production Czechoslovakia is represented particularly by the production of hops, occupying first place among exporting states; in sugar beet and beet sugar, in point of quantity heading the list of exporting states; and in malt barley, again first as to quantity among exporting states. Regarding quality Czechoslovak hops (Žatec), malt, and Haná barley, and Plzeň beer occupy first place in the face of international competition.

¹ According to investigations of the Institute of Agricultural Accountancy and Economics of the Czechoslovak Republic.

TABLE 15. PRODUCTION SUMMARY, CZECHOSLOVAKIA VS. WORLD

KIND OF PRODUCTION	WORLD	CZECHOSLOVAKIA	IN % OF THE WORLD PRODUCTION	AVERAGE FOR
Wheat	1,194.3 millions q.	13.8 millions q.	1.2	1927-29
Rye	455.6 "	17.1 "	3.8	"
Barley	395.7 "	13.6 "	3.4	"
Oats	698.5 "	14.6 "	2.1	"
Maize	1,105.8 "	2.4 "	0.2	"
Potatoes	1,931.0 "	93.0 "	4.8	"
Sugar Beet	613.0 "	67.0 "	11.0	"
Hops	584,000. q.	100,000. q.	17.0	1926-28
Beet Sugar	94.0 mil. q.	11.0 mil. q.	12.0	1927-29
Beet and Cane Sugar	280.0 "	11.0 "	4.0	"
Beer . . . . .	.....	11.4 mil. hl.	....	1928-30
Alcohol . . . . .	.....	581,000. hl.	....	1926-27
Wine	165.0 mil. hl.	3.2 mil. hl.	0.12	1925-28

MONEY VALUE OF THE CZECHOSLOVAK AGRICULTURAL PRODUCTION:

The State Institute of Agricultural Accountancy and Economics estimates the value of the Czechoslovak agricultural production at 22 milliards crowns. This figure naturally fluctuates with production and prices. One-half of this sum is derived from vegetable products, the other half from animal products. The value of the net agricultural production, after deductions for supplies, exceeds seven times that of mines and five times that of the textile production (the largest industry). The value of milk products alone is higher than that of the output of mines.

Of the total money value of agricultural production of the enterprise sizes, 9.4% derives from the enterprises under 2 ha., 19.4% from 2-5 ha., 44.4% from 5-20 ha., 17% from 20-100 ha., and 9.8% from over 100 ha.

The total value of production due to animal production decreases with increasing enterprise size. This amounts to 80% in the smallest enterprise class, and to 25% in the "over 100 ha." Comparison of the percentages of production with the percentages of area in the various size categories, shows that in the direction of larger enterprises yield declines. This is positive proof of profit derived from the realization of the Land Reform from the standpoint of national economics.

AGRICULTURAL PRODUCTION THAT COMES ON THE MARKET: Of the total agricultural production the greater part, 70%, is marketed, and about 30% is consumed directly as food for the enterpriser's family and workers. The marketed products are represented in the total turnover as shown on next page and in Appendix Table VI.

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Cereals: wheat	7.6%	
rye	6.1%	
barley	10.8%	
oats	3.1%	
	<hr/>	27.6%
Sugar Beet		7.4%
Potatoes		4.2%
Other vegetable products		8.0%
		<hr/>
<i>Vegetable production</i>		47.2%
Cattle	16.9%	
Swine and suckling pigs	12.1%	
Milk products	15.6%	
Poultry and other animal products	6.8%	
	<hr/>	
<i>Animal production</i>		51.4%
<i>Industrial production</i>		1.4%
		<hr/>
Total		100.0%

The amount of receipts for agricultural products, as well as the percentage of the individual products relative to the total amount of receipts, is influenced both by the size of the enterprise and by the agricultural region. (See Appendix, Table VI.) With the decreasing intensity of operation from the sugar beet to fodder crops region, the total value of receipts declines from 2,640 gold crowns to 888 per ha. Likewise there is a parallel transition from high receipts in plant production to high receipts in animal production. From small to large enterprises the total value of receipts increases in consequence of a relatively greater consumption in small establishments, and a parallel transition occurs in high receipts from animal to high from plant production.

TABLE 16. ENTERPRISE PRODUCTION THAT APPEARS IN MARKETS

PRODUCT	PERCENT OF PRODUCTION COMING ON THE MARKET								
	AVERAGE OF STATE	In Production Region of				In Enterprise Size			
		Beet	Grain	Grain-Potato	Fodder	2-5 ha.	5-20 ha.	20-100 ha.	Over 100 ha.
Wheat	51.0	62.1	47.2	38.0	22.1	29.2	47.9	62.7	70.1
Rye	33.4	34.0	36.7	33.5	21.8	18.5	30.4	48.5	51.6
Barley	53.8	62.8	53.4	37.2	19.2	34.7	51.1	64.0	65.8
Oats	25.3	9.6	24.2	39.3	20.0	36.9	23.4	18.4	36.4
Potatoes	18.2	17.5	19.2	20.5	14.2	8.2	17.8	29.1	24.2
Sugar Beet	97.8	98.2	96.7	91.5	100.0	99.5	99.0	99.4	93.6
Cattle	100.0	99.9	100.0	99.9	99.9	100.0	100.0	99.8	100.0
Swine	51.7	51.5	53.1	57.7	42.2	46.7	52.0	57.6	82.8
Milk	30.2	36.8	34.2	17.4	23.6	20.0	26.4	43.2	69.9
Butter	57.3	65.0	54.6	50.7	57.0	57.7	55.4	60.5	89.1
Poultry	40.9	33.1	46.1	53.4	33.7	43.4	41.3	33.2	15.3
Eggs	41.3	45.7	41.0	40.3	36.0	38.1	41.3	49.9	36.5

The percentage of the total production of the principal products of the enterprise, coming on the market, varies with the production region and the enterprise size. This is shown in Table 16. What is not marketed directly is used on the enterprise for food, feed, sowing, payment in kind, or is processed; e.g., potatoes are converted into alcohol, milk into butter, etc.

INCOME RESULTS: The agricultural enterpriser organizes his establishment so as to obtain the highest possible long-run yield, i.e., the highest possible income. This yield or income is chiefly decided by the three factors: (1) the quantity amount of production (crops, milk production, etc.), (2) prices obtained for products, and (3) prices paid for supplies.

The development of price conditions in Czechoslovakia, clearly reflected in survey data (unfortunately for the agriculturist) has of late been a very unfavorable one. The State Institute of Agricultural Accountancy and Economics controls the accounts and studies the annual yield of about 300 agricultural establishments. This control and study has been maintained since 1913 by means of systematic accounting methods and covers selected enterprises in Bohemia, Moravia, and Silesia. Results are given in Table 17.

TABLE 17. FARM INCOMES, SUMMARY APPROXIMATELY 300 ACCOUNTS¹

ACCOUNT YEAR	NO. OF ENTERPRISES IN HA.	AV. SIZE ENTERPRISES IN HA.	NET YIELD PER HA. IN CR.				1927 = 100
			Vegetable Prod'n	Animal Prod'n	Other Prod'n	Total Prod'n	
1925	205	27.0	858	89	4	951	72
1926	188	30.5	890	- 2	1	889	67
1927	176	28.3	1268	57	0	1325	100
1928	188	26.8	1194	- 113	0	1081	82
1929	164	23.7	411	237	10	658	50
1930	189	24.9	350	29	0	379	29

Since 1927, when for the last quinquennium the highest net yields were realized, the profits in farming fell off in 1928 by approximately one-fifth, in 1929 by one-half, and in 1930 by more than two-thirds. This decline is due, as is the case in general throughout the world, to the protracted depression in agricultural prices, consequent on (a) over-production, and (b) tariff policies adopted by the majority of the importing states. It is axiomatic that exactly as the net yield declines, so fall the farm income and the agriculturist's purchasing

¹ Net yields per ha. of agricultural area in Bohemia, Moravia and Silesia.

power, both for consumption and the requirements of his enterprises. This trend registers a parallel decline in the intensity of operation, and national economic profit. Latterly farm income has not fully met the personal needs of the agriculturist's family, so that the farmer has had to touch the very substance of his property or to obtain loans. Table 18 sketches statistically the evolution of the conditions of income and consumption on the same enterprises as cited in Table 17.

TABLE 18. INCOME AND CONSUMPTION¹

ACCOUNT YEAR	PER 1 HA. OF AGRICULTURAL AREA IN CR.			
	Agr'l Income	Family Expenditure	Surplus	Deficit
1925	1893	1843	50	..
1926	1896	1881	15	..
1927	2068	1889	179	..
1928	1718	1843	..	125
1929	1391	1908	..	517
1930	996	1652	..	656

In the first three-year period (1925-1927), when agricultural incomes exceeded expenditure, it was possible to save 244 cr., whereas in the second three-year period it was necessary to defray as much as 1,298 cr. from the property. Hence during the control period of six years 1,054 cr. were added to the income, per ha. of agricultural area, in order to maintain the family of the agriculturist. Here is felt the most painfully the prevailing agricultural depression.

RENTABILITY: From the foregoing data supplied by the Institute, it is possible to scrutinize the causes of the decline in the rentability of agricultural enterprises, especially of specific lines of production. The limits of the study are set by data obtained by scrupulous and systematic accounting methods, applied among other objectives to the determination of the production costs of the various crops and animal products. Legitimate deductions, supported also by Table 17, are these: (1) very low net yields, if not losses, are the results in animal production despite the fact that the greater part of the receipts proceeds just from this line of production, (2) yield of vegetable production in the last two years especially has declined while animal production has increased a little, and (3) rentability decline has been greater in the sugar-beet region than in the region of fodder crops, and greater in the large than in the small enterprises. Limited space, however, prevents a minute analysis.

¹Agricultural income and personal consumption in Bohemia, Moravia and Silesia.

5. AGRICULTURE REFLECTED IN FOREIGN TRADE

Though Czechoslovak agriculture is on a high production level it does not, due to dense population, suffice to meet in all lines domestic demands. Nevertheless in certain production lines there is considerable surplusage. Therefore from the standpoint of national economics it has been of some advantage to grow exportation crops (high-grade brewery barley, hops, sugar beet) instead of imported crops (wheat, maize). Even at the price of 100 cr. paid on the international market for a quintal of Czechoslovak sugar, the Republic can for the money received abroad for sugar produced on a hectare import as much wheat as it can grow at home on 2 ha. Thus even with the annual output of 30 millions q. of bread crops it is necessary to import 57,000 carloads of wheat (of rye there has been no shortage in the last 2 years), besides 30,000 carloads of maize for feed, and 1,000,000 q. animal products (pork, mostly live animals, and lard¹). Respecting exports, Czechoslovakia is "active" chiefly in barley and/or malt, of which it exports 35,000 carloads; then in hops, exporting 70% of production; sugar, exporting two-thirds of production; timber; beer (Pilsen); and alcohol; besides a considerable number of less important minor crops and agricultural products.

TABLE 19. PRODUCTION, CONSUMPTION NEED, SURPLUS OR SHORTAGE OF SELECTED AGRICULTURAL PRODUCTS

PRODUCT	IN CARLOADS		SURPLUS		SHORTAGE		
	Production	Consumption Requirement	In carloads	% of Total	In carloads	Per cent of total	
						Consumption	Production
Wheat	130,175	180,810	....	..	57,635	30.7	44.3
Rye	160,546	166,450	....	..	5,904	3.5	3.7
Barley	129,143	94,601	34,542	26.7	....	....	....
Oats	139,825	134,775	5,050	3.6	....	....	....
Maize	24,499	54,705	....	..	30,206	55.2	123.3
Potatoes	859,527	859,073	454	0.05	....	....	....
Sugar	110,392	36,079	74,313	67.3	....	....	....
Hops	1,063	311	752	70.7	....	....	....
Alcohol	4,508	4,171	337	7.5	....	....	....
Beer	103,196	99,246	3,950	3.8	....	....	....
Meat	29,200	35,711	....	..	6,511	18.2	22.3
Lard	11,024	14,284	....	..	3,260	22.8	29.6
Butter	5,000	5,018	....	..	18	0.4	0.4
Timber	2,200,000	2,020,000	180,000	8.2	....	....	....

¹ Though the animal domestic production of meat and fat is 4,000,000 q.

A synopsis of production, consumption needs, surpluses, and shortages of the principal agricultural products, of agricultural industry, and forestry, will be found in Table 19. Data refer to the average production for 1925-29 and the foreign trade in 1926-30.

If the surpluses are expressed in percentages of total production, it is found what part of the production unconditionally depends on the competition of the international market. In first place is hops with a surplus of 71%, then sugar with 67%, and barley with 27%. In these export lines Czechoslovakia suffers considerable losses due to international overproduction and to the protective tariffs of the importing states. If the shortages are put in percentages of production, the figures obtained indicate by what per cent it would be necessary to increase production in order to meet domestic demands. In the case of maize it would be 123%, of wheat 44%, meat 22%, lard 30%. If we express the shortage in the percentage of the total domestic demand, the figures obtained indicate the comparative dependence on foreign states. The respective percentages are: for maize 55%, wheat 31%, meat 18%, lard 23%.

Up to 1928 the Czechoslovak foreign trade was active every year with 2 milliards crowns. In 1929 export sank, due to the fall in prices to 500 million cr., but in 1930 it rose to 1,700 millions cr. The structure of Czechoslovak foreign trade, average of 1928-1930 and in the nomenclature of Brussels, is given in Table 20.

TABLE 20. STRUCTURE OF CZECHOSLOVAK FOREIGN TRADE

CLASS OF GOODS	IMPORTS		EXPORTS	
	Millions Cr.	%	Millions Cr.	%
I. Live animals	797.6	4.4	50.8	0.2
II. Foodstuffs and beverages	3,021.2	16.6	2,316.0	11.8
III. Raw materials and half-finished products	8,684.2	47.6	3,298.1	16.8
IV. Finished products	5,730.7	31.4	14,008.6	71.2
Total	18,233.7	100.0	19,673.5	100.0
Active balance	1,439.8			
Totals	19,673.5		19,673.5	

In brief, it is fair to characterize the Czechoslovak commercial statement as the importation of raw materials and the exportation of finished products. The area of the Republic cannot meet the huge requirements of the industrial plants for raw materials which in

many instances are of tropical origin, e.g., cotton and tropical fruit. (In the Appendix, Table VII presents a detailed analysis of the foreign trade according to the average of 1928-1929). Imports of most moment are the raw materials for the textile industry, viz., cotton, wool, flax, hemp, jute, and silk. These are followed by products of metal industries and raw materials for the latter, wheat and wheat flour, swine, chemical products, raw hides, and mineral oils. Exports rank in decreasing importance as follows: textile products, metal ware, leather goods, sugar, glass, coal, timber, barley with malt, ready-mades, china, ceramics, etc. Naturally the increasing imports of raw materials, when followed by increasing exports of finished products, are entirely welcome from the standpoint of national economics.

SHARE OF AGRICULTURE IN FOREIGN TRADE: If in the statement of foreign trade regard is had for those products of agriculture, forestry, and agricultural industries which can be domestically produced, then the 1925-1928 average of the active balance of agriculture amounts to 700 million cr. annually, i.e., 47% or *nearly one half* of the total active balance of 1,500 million cr. In consequence of the fall of agricultural prices, this percentage had so decreased since 1927 that in 1929 the surplus of agricultural products in the Czechoslovak foreign trade was only 114 million cr., i.e., 22% of the active balance in the commercial statement, while in 1930 there was in the foreign trade a passive item of 122 million cr. respecting agricultural products.

With such a considerable decrease in the value of the exported agricultural products it is necessary to pay attention to the almost stationary position of imports of deficit food materials, i.e., flour, pigs, lard, etc., and to attempt by adequate measures to reduce imports to correspond to exports.

6. AGRICULTURAL COÖPERATIVES

GENERAL INFORMATION: The Czechoslovak coöperative movement is remarkable for its extent, strength, and minutely planned organization — proof of its technical advance. It can, therefore, be justly compared with the most progressive coöperative organizations of the leading cultural states. It is backed by a history and experience of some 50 years. The first agricultural credit coöperatives arose in Moravia-Silesia in 1886, and in Bohemia in 1888. Since that time their number has been growing at a steadily increasing rate. The idea of a common purchase of agricultural supplies spread almost simultaneously and was brought into effect by local farmers' societies. Beginning in 1890 the buying function was taken over by properly

organized coöperatives and subsequently the idea of coöperation was extended also to production coöperatives in order to clear the way for the commercialization and industrialization of agriculture, by working out all its lines. A definite direction and system was given to the organization program, after the foundation of the central associations.

The movement soon arrived at the conviction that only well-organized coöperation can successfully fill its mission. The first associations of this kind were found in Moravia-Silesia in 1893 and 1894. In Bohemia the first associations were founded in 1895 and 1896. The development of Czechoslovak coöperatives is helped in the first place by a considerable economic, cultural, and political advance of the agricultural class, perfectly organized by trades and backed by specific agricultural schooling. The farmers not only fully understand the significance of coöperation action but are also capable of managing with self-sacrifice and proper care their coöperative establishments. Their organizations according to interest and technical line are alive to the ideal of the coöperative movement and in a most thorough-going manner promote its progress in the country.

The State Administration also manifests an adequate understanding of the principle of coöperation. It devotes proper care also to the education required in connection with coöperation activities. The science of coöperation is a lecture topic in the High Schools of Agriculture, and is also on the educational program of all schools instructing students of agriculture.

Apart from this, the Associations of Coöperative Organizations have set up in Prague the Higher School of Agricultural Coöperation managed by a Curatorial Board appointed by the Ministry of Agriculture from representatives of the Associations of coöperatives. This school throughout the year trains students in the necessary knowledge for all the departments involved in coöperative enterprising. It is jointly maintained by the Associations, and is besides subsidized by the State.

EDUCATION: The Coöperation Associations also employ other means effectively to promote coöperation and to spread education and knowledge among the members and functionaries. In the foremost place is coöperative publications. Each agricultural coöperative association issues its own gazette for its members, and this contains analyses of general and special economic problems, particularly as concerns coöperation. Further these organs serve the purpose of informing the members as to the current events within the Association. Attention is also directed to coöperative literature. The association publications include a series of first-rate practical books on coöperative

enterprising. A very important part is taken in the promotion of coöperative ideas and in the deepening of practical coöperative knowledge by regular courses systematically arranged by the association institutions. To these propaganda methods agricultural films and broadcasting have of late been added.

RANGE OF ACTIVITY: The coöperative movement in Czechoslovakia has encompassed the economic activities of the agricultural class in all their departments and components. First of all, its activities are extended to the department of credit transactions, of production and improvement of agricultural products, of acquisition of agricultural supplies and sale of agricultural products, of electrification of rural districts, of insurance, etc. The organization of agricultural coöperatives is of a varied nature because coöperatives join into associations partly according to nationality and political party, and partly to province (Bohemia, Moravia-Silesia, Slovakia, Sub-Carpathian Ruthenia). Finally, in some forms the associations specialize according to the objectives of coöperative activities.

NUMBER: According to status towards the close of 1930 there were all-told 11,029 agricultural coöperatives, with a membership of 1,100,000. Since the realization of the land reform there are in Czechoslovakia 1,618,000 agricultural enterprises; so this enrollment means that fully two-thirds participate in coöperation.

Coöperation has extended its activities to all the departments of agricultural enterprising. In addition to the large number of actual coöperative societies, there has been built a whole series of organizations on the lines of joint-stock companies with limited liability. However, these on account of their character, activities, and organization must be regarded as tantamount to coöperative societies, and with their economic mission they supplement coöperatives on a large scale. The majority of them are both in point of interests and organization linked with coöperative societies in the Association.

GROWTH: The rapid advances made by the organization of agricultural coöperatives is seen from their growth in the decade 1921-1930. The total number was 7,336 in 1921, increasing to 11,029 in 1930, i.e., by 3,693 or more than 50%. The average annual accrue ment in the decade was 369 agricultural coöperatives. In the credit group the increase in the decade was from 4,468 to 5,853; in the non-credit group it was from 2,868 to 5,176. However, the organization of coöperatives has not yet stopped. Great possibilities of development are open, especially in connection with the industrialization of some branches of agricultural production by means of coöperation enterprising in the eastern regions, Slovakia and Sub-Carpathian Ruthenia.

FEDERATION: The agricultural coöperatives are leagued into associations which form the natural base of their economic life and development. At present there are twelve. These associations have the right of revision, perform the organization and representation functions for their members, and administer their financial affairs. The associations of agricultural coöperatives were early federated. At the outset ways were sought that would lead to union and to building up a common central organization of interests. The organization of agricultural coöperation reached its culminating point in 1921 when the coöperation leaders, guided by the requirements of organization and effectively supported by the Ministry of Agriculture, succeeded in their efforts and founded the "Centrokoöperative." This is the union of the Czechoslovak agricultural coöperative associations located in Prague, and is their supreme organization of interest. The "Centrokoöperative" is specifically empowered to protect and represent coöperative interests and effect revisions, all commercial activity being excluded from its program.

Coöperative Credit Societies provide the base for building up coöperative organization in general and are the chief institution of agricultural credit. There are two types of agricultural credit societies. One type is based on the principle of unlimited liability, i.e., Savings and Loan Societies, 5,200 in number; the other one is based on the principle of limited liability, i.e., Farmers' Loan Banks, 653 in number. The chief object of coöperative credit societies is to grant to their members short-time credit towards enterprise operation.

The financial means required for this purpose are derived from the savings of the rural class. The credit coöperatives are managed at a very low cost. Their administration on the principle of honorary functions is strictly observed so that the difference between the credit and the debit rate of interest can be very small, mostly about 1.5%. In consequence this credit is the cheapest and most accessible to the rural class. The twelve provincial associations are organization centers and clearing institutions of the credit coöperatives. These associations give direction to the activities of the associated coöperatives regarding deposits or loans, and the policy of the rates of interest. These rates in the western provinces move between $5\frac{1}{2}$ and 7% on loans on bonds and drafts. In the eastern provinces the rate is 8 to 10%. Besides the credit coöperatives the provincial mortgage emission banks procure for the agriculturist long-time mortgage credit. Mortgage credit is granted against emission of redemption bonds.

Coöperative purchase and sale (elevator) societies, numbering 351 in 1930, are operated on commercial lines and their object is to procure

for the agriculturist everything he requires in the operation of his enterprise, (implements, fertilizers, feeds, engine fuels, etc.) and to negotiate the sale of crops (cereals, potatoes, seeds, etc.)

The elevator coöperatives are mostly established to serve only one district. They require a large investment and operating capital. As a rule they are situated along railroads, and are equipped either with adequate elevators, or with affiliated elevator buildings. The majority of them are equipped to clean and grade grain and seeds. The chief objectives of these coöperatives is to improve agricultural produce by introducing uniform sowing and planting materials, and preparing the products for the market by cleaning and grading. In a series of products, coöperative trading predominates (fertilizer, feeds), while in the case of other kinds it is steadily increasing. In many districts the larger part of grain crops is bought up by the coöperatives. Some of their societies have their own or leased industrial establishments, namely, flour mills, bakeries, machine works, and electric power stations. There are 56 flour mills of this kind, either independent or connected with coöperative elevators.

The organization of commercial coöperatives includes also the group of agricultural supplying coöperatives, of which there are in Czechoslovakia 1,088. The latter coöperatives are a typical feature in the eastern provinces.

Coöperative marketing of animal products has not yet met with remarkable success, but intensive activities are also in progress in this direction.

PROCESSING COÖPERATIVES: Producing coöperatives are a remarkable element in the rural districts and express the industrialization and commercialization of agriculture by coöperative action. In some production lines this industrialization has gone so far that coöperative plants process finally the market products. As example of these, there are now 306 distilleries which are steadily enlarging the base of their membership by transforming large estate distilleries into coöperative plants under a clause of the Land Reform Act. Distilleries produce 36.5% of the total alcohol production. Their commercial focus is the Coöperative of Agricultural Distilleries in Prague, which manages the sale of alcohol and the provision of engine fuels or other auxiliary materials of production. Its membership includes agricultural distilleries, both coöperative and connected with large estates. In point of interests and organization the distillery coöperatives have their central institution in the Association of the potato industry. The category of coöperatives for potato industry comprises 7 starch plants and 8 potato drying houses.

Of other producing coöperatives brief mention at least can be made of the following: 386 coöperative dairies, 33 coöperative chicory drying houses, 18 farmers' malhouses and 18 farmers' sugar factories, the latter being organized as joint-stock companies. The shareholders of these sugar factories are obliged to supply sugar beets to the factories. Fruit and vegetable production coöperatives have recently begun to develop on a large scale. All told, 75 fruit coöperatives have been founded and are mostly engaged in the production of fruit preserves, while 19 coöperatives are engaged in preserving vegetables.

MACHINERY AND ELECTRICITY: The coöperative societies for providing machines and for founding electric power plants have rendered priceless service to the Czechoslovak agricultural world. The machine coöperatives, 166 in number, make it possible for the majority of small holders to secure the use of common, expensive machinery (steam plows, steam or gasoline-driven threshing machines, etc.). Much more important are the electric power coöperatives. The advantages of electricity in the operation of agricultural enterprises, even before the War, stimulated the formation of the Electric Power Coöperatives. In 1918 and subsequently, the Czechoslovak State proceeded to the realization of a systematic *rural electrification* plan; and, from 1918 dates the enormous growth of the agricultural coöperatives for the distribution and consumption of electricity. Up to 1930, a total of 8,355 communities were electrified, of which 1,755 communities were by coöperative action. There still remain in the Republic approximately 7,000 communities, particularly in the eastern regions, to be systematically electrified.

7. CONCLUSION

There is no doubt but that Czechoslovakia can by technical means considerably increase its agricultural production and thus also its active balance in the commercial statement. The following policy factors of production are specifically cited: (1) reclamation projects; (2) encouragement of various improving activities; (3) economic measures (automatically guided by the interests of the agriculturist) which are closely connected with the tariff and trade policy; and (4) the promotion of technical progress by schooling, coöperation, popularized science publications, exhibitions, etc. While in the western Czech provinces, especially in the intensive central regions, any further increase of production is contingent on the utilization of a higher degree of scientific progress, in the eastern

provinces there are still greater possibilities for the increase of production if the local population is encouraged by cultural facilities to develop fully its agricultural opportunities.

The easily obtainable increase of agricultural production by a mere 5% represents in value more than 1 milliard crowns, which sum would increase the active balance in the commercial statement of the State.

From the foregoing reflections it is plain that, even in agricultural-industrial Czechoslovakia, an extraordinary importance attaches to agriculture. An adequate policy in agricultural production is important, not alone for the commercial balance of the State, but also at the same time to promote the stabilization of exchange of the Czechoslovak crown. This is especially the case in periods in which industries, depending mostly on export, suffer from depression of the international market.

APPENDIX

TABLE I. POPULATIONS OF SOME EUROPEAN STATES

STATES	DENSITY OF POP. PER SQ. KM.	PROFESSIONALLY WORKING PERSONS		RATIO (X 10) ³	NUMBER OF FARM WORKERS PER 100 HA. ¹
		Agriculture and Forestry	Industry, Mines		
Norway	8.7	36.8	28.9	67.3	16.4
Finland	9.2	68.9	12.8	32.6	36.4
Sweden	13.6	40.7	31.0	55.8	21.2
Estonia	23.5	65.6	13.4	27.0	14.6
Latvia	28.6	68.00	11.1	24.0	19.8
Lithuania	41.6	79.4	6.2	18.6	26.1
Ireland	42.8	52.1	14.7	43.8	13.9
Spain	44.4	56.1	20.9	47.0	20.6
Greece	49.2	53.7	15.9	42.0	..
Yugoslavia	53.6	76.0	9.0	26.3	40.8
Bulgaria	55.4	82.4	8.1	25.6	58.6
Rumania	59.2	79.5	8.0	24.6	41.1
Portugal	65.6	57.5	21.9	40.8	29.0
France	74.4	41.5	29.9	45.2	25.0
Poland	78.3	75.9	9.4	26.5	43.3
Austria	79.6	31.9	33.3	65.3	22.6
Denmark	81.5	34.8	27.0	72.4	16.4
Hungary	92.5	58.2	19.7	37.5	28.5
Switzerland	95.7	25.9	44.4	80.4	22.0
Czechoslovakia	104.9	40.3	36.8	56.1	28.0
Italy	132.8	56.1	24.6	37.7	47.5
Germany	136.9	30.5	41.3	63.9	34.3
Great Britain	195.0	7.1	47.2	309.7	7.6
Holland	236.6	23.6	37.8	106.9	28.6
Belgium	262.6	19.1	46.5	121.7	34.8

¹ No. of agr. workers per 100 ha. of cultivated land exclusive of woods.

² Total population divided by agricultural workers, multiplied by 10.

TABLE II. PERCENTAGE OF CULTURES ON THE WHOLE MEASURED AREA¹

STATES	AREA UNDER CULTIVATION				WOODED AREA	OTHER AREA
	Fields	Meadows and Pastures	Gardens and Vineyards	Total		
1. Yugoslavia . . .	25.8	18.6	2.2	46.6		53.4
2. Austria . . .	22.9	27.6	1.5	52.0	37.5	10.5
3. Switzerland . . .	12.3	40.6	0.3	53.2	21.8	25.0
4. Rumania . . .	42.6	14.0	2.0	58.6	24.5	16.9
5. Belgium . . .	40.3	17.0	2.2	59.5		40.5
6. Czechoslovakia . . .	42.1	18.4	1.2	61.7	33.1	5.2
7. Germany . . .	43.8	17.0	1.0	61.9		38.1
8. Poland . . .	47.1	16.4	1.3	64.8		35.2
9. France . . .	41.3	20.7	4.4	66.4	19.1	14.5
10. Denmark . . .	61.0	7.0	..	68.0		32.0
11. Holland . . .	28.4	38.9	2.6	69.9	7.3	22.8
12. Italy . . .	42.7	21.8	7.2	71.7	16.0	12.3
13. Great Britain and N. Ireland . . .	24.1	55.9	0.5	80.5		19.5
14. Hungary . . .	59.5	18.0	3.5	81.0	11.7	7.3

¹ Five-year average: 1925-1929, in % of total area.

TABLE III. RELATION OF PRINCIPAL CROPS, AVERAGE OF 1925-29 IN PERCENTAGE OF ARABLE LAND

STATES ¹	WHEAT	RYE	BAR-LEY	OATS	MAIZE	POTA-TOES	SUGAR BEET	TEM-PORARY MEA-DOWS & FODDER CROPS ²	OTHER CROPS & FAL-LOW LAND	TOTAL
1. Denmark . . .	3.8	6.9	12.8	15.8	..	2.7	1.4	41.6	15.0	100.0
2. Holland . . .	5.9	21.3	3.1	16.4	..	18.9	6.8	11.8	15.8	100.0
3. Poland . . .	7.3	31.1	6.3	11.1	0.5	13.6	1.1	6.4	22.6	100.0
4. Germany . . .	8.0	22.9	7.3	17.0	..	13.6	2.1	16.2	12.9	100.0
5. Switzerland . . .	9.8	3.9	1.3	4.0	0.3	9.3	0.3	64.3	6.8	100.0
6. Austria . . .	10.6	19.9	7.8	15.9	3.1	9.5	1.3	17.9	14.0	100.0
7. Great Britain and N. Ireland . . .	10.8	0.2	8.9	21.1	..	5.5	1.2	44.5	7.8	100.0
8. Belgium . . .	12.4	18.7	2.6	22.4	..	13.5	5.3	18.8	6.3	100.0
9. Czechoslovakia . . .	13.2	17.3	12.6	14.2	2.3	12.3	4.3	17.4	6.4	100.0 ³
10. France . . .	23.8	3.6	3.1	15.4	1.5	6.6	1.0	23.4	21.6	100.0 ⁴
11. Rumania . . .	25.0	2.3	14.0	9.1	34.2	2.1	0.5	5.0	7.8	100.0
12. Hungary . . .	28.0	12.1	7.7	5.0	19.6	4.9	1.2	14.0	7.5	100.0
13. Yugoslavia . . .	28.9	3.3	6.0	5.7	32.7	3.5	0.7	4.2	15.0	100.0
14. Italy . . .	36.8	0.9	1.8	3.8	11.5	2.7	0.7	10.7	25.1	100.0

¹ Listed according to the increasing percentage of wheat acreage.

² Clover crops, lucerne, stock beets and fodder crops, beans, and green fodder.

³ 4 years' average 1927-1930.

⁴ 4 years' average 1925-1928.

TABLE IV. RELATIVE STATUS OF DOMESTIC ANIMALS IN SELECTED EUROPEAN STATES¹

STATES	PER 100 HA. OF AGR. AREA			PER 1000 INHABITANTS		
	Cattle	Swine	Horses	Cattle	Swine	Horses
Hungary	24.4	34.0	11.9	211.8	295.2	103.3
Rumania	26.8	16.9	11.0	263.4	165.7	108.4
Yugoslavia	32.1	23.7	9.7	276.1	203.8	83.1
Italy	33.1	12.8	4.7	178.3	68.7	25.3
Poland	35.7	22.6	16.5	287.3	181.6	133.0
France	40.7	16.3	8.1	356.0	142.9	70.5
Great Britain and N. Ireland	41.3	15.0	6.9	180.1	65.6	30.2
Austria	49.6	33.8	6.5	322.6	219.7	42.2
Czechoslovakia	54.2	29.3	8.6	321.2	173.8	50.7
Germany	61.2	67.9	13.0	274.5	304.4	58.5
Switzerland	72.3	29.0	6.4	391.8	157.2	34.5
Holland	90.3	66.5	15.9	263.3	194.0	46.4
Belgium	94.8	64.0	13.9	213.3	143.8	31.2
Denmark	99.7	112.0	18.1	821.0	922.1	149.4

¹ Average number head of animals for 1928-1929, or as per last census.

TABLE V. HECTARE YIELDS OF PRINCIPAL CROPS OF SELECTED EUROPEAN COUNTRIES¹

STATES	YIELDS PER 1 HA. IN QUINTALS						
	Wheat	Rye	Barley	Oats	Maize	Potatoes	Sugar Beets
Rumania	9.8	10.1	10.4	9.9	10.2	89.4	164.8
Yugoslavia	11.6	8.9	9.5	8.5	13.6	48.9	166.6
Poland	12.3	10.9	12.1	11.4	10.3	107.9	199.5
Italy	12.4	13.2	10.2	11.7	16.5	55.1	258.2
Hungary	13.7	11.1	13.6	12.6	15.0	68.6	213.0
France	13.9	10.9	15.3	14.6	12.3	95.6	228.5
Austria	15.2	13.3	15.9	14.2	19.3	125.3	250.4
Czechoslovakia	17.0	16.0	17.8	16.4	16.8	120.4	252.3
Germany	19.7	16.0	19.0	18.6	..	137.5	256.1
Switzerland	21.5	20.4	18.6	20.5	31.7	142.0	256.8
Great Britain and N. Ireland	22.0	17.4	20.7	20.0	..	166.9	201.7
Belgium	25.5	23.7	26.7	24.2	..	200.1	289.6
Denmark	27.6	16.1	27.3	24.3	..	137.2	295.3
Holland	29.0	19.3	30.0	21.0	..	183.7	331.2

¹ Averages for 1926-1930 or 1926-1929.

TABLE VI. HECTARE MARKET VALUES¹ OF AGRICULTURAL PRODUCTION ON AGRICULTURAL AREAS AND ENTERPRISES

PRODUCT	% OF TOTAL RECEIPTS IN PRODUCTION REGION OF				AGRICULTURAL PRODUCTS FROM ENTERPRISES OF			
	Sugar Beet	Grain	Grain-Potato	Fodder	2-5 ha.	5-20 ha.	20-100 ha.	100 ha. +
Wheat	9.7	8.0	3.6	1.0	4.0	7.3	9.0	7.7
Rye	3.6	6.5	7.4	3.9	3.4	5.5	7.5	4.0
Barley	11.7	7.0	3.0	1.6	4.2	7.3	8.9	9.1
Oats	0.4	2.8	7.6	3.3	3.3	3.0	2.3	1.9
Maize	0.3	0.3	...	0.4	0.3	0.4	0.2	0.1
Cereals	25.7	24.6	21.6	10.2	15.5	23.5	27.9	28.8
Potatoes	1.4	2.5	4.0	3.2	1.6	2.7	3.1	1.8
Sugar Beet	22.2	4.9	1.6	0.1	6.8	7.8	13.5	14.1
Misc'l Vegetables	6.1	8.7	3.0	3.2	4.6	7.4	6.1	5.2
<i>Total Vegetables</i>	<i>55.4</i>	<i>40.7</i>	<i>30.2</i>	<i>16.7</i>	<i>28.2</i>	<i>41.4</i>	<i>50.6</i>	<i>43.9</i>
Cattle	19.2	24.0	29.2	28.8	24.2	22.7	21.4	28.5
Swine and suckling pigs	7.8	11.2	13.2	10.2	16.2	12.2	7.6	1.7
Milk and products	11.5	13.9	10.6	20.8	16.9	12.8	12.7	12.2
Poultry and products	1.8	2.5	3.2	2.2	4.6	2.7	1.5	0.8
Misc'l Animals	3.0	5.8	9.3	19.4	9.9	8.1	5.1	3.0
<i>Total Animals</i>	<i>43.3</i>	<i>57.4</i>	<i>65.5</i>	<i>80.9</i>	<i>71.8</i>	<i>58.5</i>	<i>48.3</i>	<i>45.5</i>
Industrial Production	1.3	1.9	4.3	2.4	..	0.1	1.1	10.6
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Value Cr.	2640	1667	1350	888	1589	1476	1715	2400

¹Statistical material prepared by the Institute of Agricultural Accountancy and Economics, based on stabilized pre-war conditions, and converted according to the gold index into Czechoslovak crowns.

TABLE VII. CZECHOSLOVAK FOREIGN TRADE IN 1928-1929 ACCORDING TO PRINCIPAL CLASSES OF GOODS

CLASS AND KIND OF GOODS		MILLIONS CR.	% OF REL- LATIVE CLASS	MILLIONS CR.	% OF REL- ATIVE CLASS
I. Live Animals:	Swine	675.58	81.0	.....	.....
II. Foodstuffs:	Sugar . . . . .	.....	.....	1,358.0	52.0
	Barley, malt . . . . .	.....	.....	654.5	25.0
	Hops . . . . .	.....	.....	224.0	8.5
	Beer . . . . .	.....	.....	51.5	2.0
	Wheat, rye, flour	957.0	30.0	.....	.....
	Maize	362.0	11.0	.....	.....
	Fruit (esp. southern)	325.0	10.0	.....	.....
	Lard	308.0	9.5	.....	.....
	Coffee	233.5	7.0	.....	.....
	Rice	140.5	4.5	.....	.....
III. Raw Materials:	Textile	3,961.5	42.0	.....	.....
	Iron ores, pig iron, other metals	1,215.0	13.0	.....	.....
	Raw hides	567.5	6.0	.....	.....
	Coal, coke	542.0	6.0	900.0	25.5
	Mineral oils	490.5	5.0	.....	.....
	Raw tobacco	358.0	4.0	.....	.....
	Timber	289.0	3.0	740.5	21.0
	Cellulose . . . . .	.....	.....	199.0	5.5
	Kaolin . . . . .	.....	.....	82.0	2.5
IV. Finished Products:	Textile	1,726.0	28.5	6,217.5	43.0
	Metal	3,119.0	52.0	3,279.5	22.5
	Leather (shoes) . . . . .	.....	.....	1,425.0	10.0
	Glass . . . . .	.....	.....	1,323.5	9.0
	Ready-mades . . . . .	.....	.....	644.4	4.5
	China, ceramics . . . . .	.....	.....	447.0	3.0
	Wood . . . . .	.....	.....	329.5	2.0
	Chemicals, dyes, varnishes, etc.	760.5	12.5	298.5	2.0
	Paper	262.0	2.0
	Pneumatic tires	148.5	2.5

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NOTES:

1 hectare	2.4711 acres
1 square kilometer	0.3861 sq. miles
1 metric quintal wheat	3.67 bushels
1 " " rye	3.94 "
1 " " barley	4.59 "
1 " " oats	6.89 "
1 carload	100 metric quintals
1 hectoliter	26.42 gallons
1 dollar	33.75 Czechoslovak Crowns

ABBREVIATIONS:

q.	Metric quintal (100 kilograms)
ha.	hectare.

CHAPTER FOUR

THE AGRICULTURAL POLICY OF GREECE

BY

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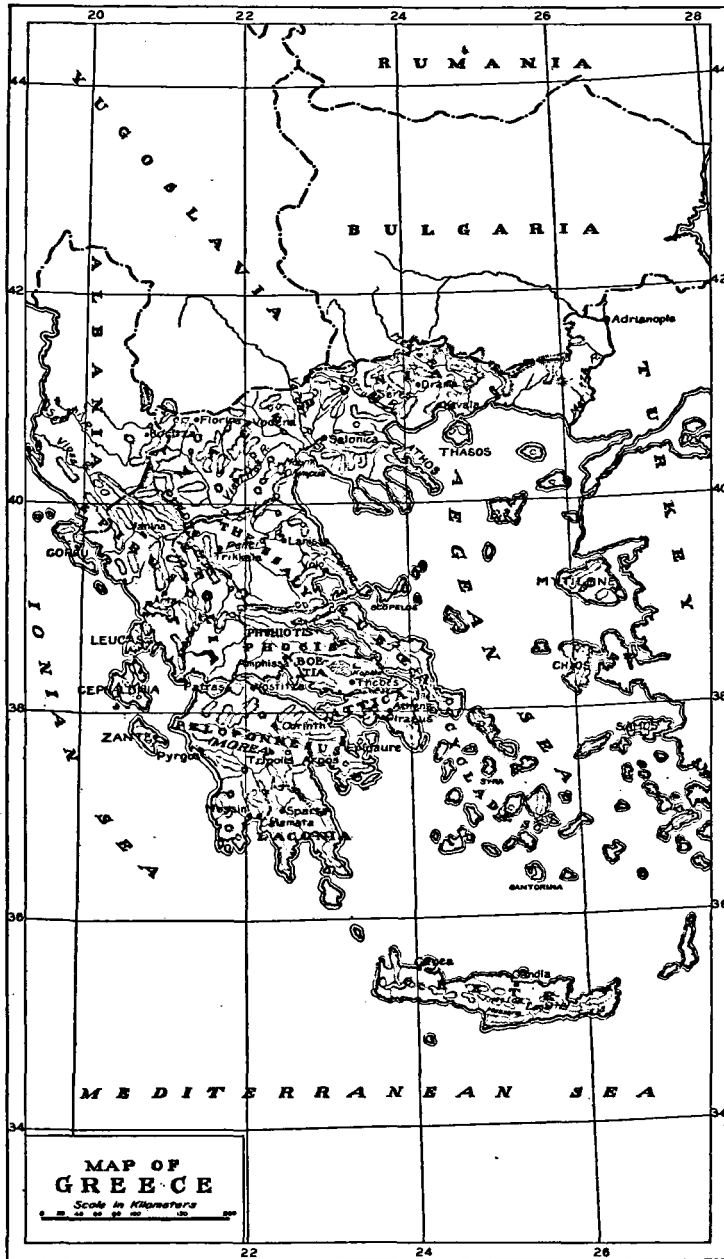
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THE AGRICULTURAL POLICY OF GREECE

I. PHYSICAL FACTORS

The mainland of Greece occupies the south part of the Balkan Peninsula. It is bounded on the north by Albania, Yugoslavia and Bulgaria; on the east by Turkey and the Aegean Sea; on the south by the Mediterranean Sea; and on the west by the Ionian Sea. The extreme south part of Greece (Crete) is in latitude $34^{\circ} 55'$ and the extreme north (Thrace) is $41^{\circ} 38'$; the extreme west (Corfu) is in longitude $19^{\circ} 37'$ (Greenwich) and the extreme east $27^{\circ} 6'$. The fact that Greece is bounded so largely by sea gives her many climatic and commercial advantages.

SOIL FORMATION: The great variety found in Greek soils is due chiefly to its geological evolution. The variety of the soil horizons is due to a very strong vertical movement resulting in crumbling of its soil and in an upheaval of the subsoil. These phenomena accomplished during Miocene and Pliocene periods of the Tertiary era bequeathed to Greece the low basins often closed on all sides, and the variety of geological rocks which form the surface of Greece. The number of these basins is larger in eastern Greece owing to the crushing of strata which occurred during the Pliocene period and the Quaternary era, due to the immersion of the Aegean area between Greece and Asia Minor.

The greatest part of Greece continued to be under the sea during the Mesozoic and the beginning of the Cenozoic era. For the most part present day Greece rose out of the sea in the Oligocene period of the Cenozoic era. The land that broke from the sea, divided and amorphous, includes Greece interspersed with the Aegean and Ionian Seas, Crete, Cyprus and western Asia Minor. The present aspect of Greece, therefore, is mainly the result of the crumbling of the Aegean soil during this period. These vertical movements continue, unfortunately, at different points of the Aegean area, often causing disastrous earthquakes in many parts of Greece.

RIVERS: The largest rivers of Greece are found in the north and their importance decreases southward where there are only creeks. Greek rivers are not navigable owing to their shallowness. They also are of little use for pisciculture. Many of them at flood in the winter cause serious damage to agriculture.

LAKES: The lakes of Greece are not navigable because they do not have a uniform level. This is due to the underground flow of waters, facilitated by limestone rocks. Pisciculture is not greatly developed in the lakes. In many places in Greece lakes are a liability, because they change into malaria infested marshes. After the war, Greece undertook to resolve its river and lake question, so as to reap profit instead of damages therefrom.

CLIMATE: Greece has in the main the climate of temperate neighboring regions, viz., the Mediterranean climate, characteristics of which are rains during the winter months and dryness during the other seasons. However, there are noticeable differences between districts owing to natural conditions, and especially to distance from the sea. Thus the northern districts have a climate approximating in duration and severity the continental climate. In the maritime districts the mild winter barely begins in December and it is over by the close of March. Cold and snows are not great obstacles in these regions, while in those with continental climate winter is usually very severe.

Summer begins generally in June and is very hot and continuous, the prevailing drought being very seldom interrupted by rains. Temperature during summer is very high, especially in the plains, not infrequently attaining a maximum of 40° C. (104° F.). It varies ordinarily between 32° and 36°, while in winter and near the sea it seldom drops to 0° C. (32° F.).

PRECIPITATION: Rains are very irregular in Greece, usually abundant in winter and particularly in December, which is the wettest month of the year. They are rare during the other seasons. For this reason Greece can be divided into two districts, one including the western district relatively rich in rains, and the other, the eastern, which is poor in rains. This is due to the disposition of its mountains. The annual precipitation varies between 370 and 1,200 mm. Near the sea and on the plains it seldom snows, but snow falls abundantly in the mountainous and northern regions.

2. POPULATION

The total population of Greece according to the census of 1928 is 6,204,684. The average population per sq. km. is 48.86. This shows a great increase over the population of a century ago,¹ although population is still relatively sparse.

¹ Then there was 19 per sq. km. (Annual Statistics of Greece). This increase in great part is due to the exchange of population in 1923-1924.

The rural population, that is, the villages which do not exceed 2,000 inhabitants, is 3,568,253, viz., 58%¹ of the total. To this may fairly be added a large part of agriculturists living in small towns of from 2,000 to 5,000.² Consequently the total rural population surpasses considerably the urban population. Furthermore, in ranking the different occupations,³ agriculture stands highest, viz., 61.11%.

THE GREEK PEASANT: In general the Greek peasant is intelligent and industrious. Although the soil is poor and the peasant is obliged to work hard to wring a living from it, he does his best with the primitive and limited means at his disposal. In the mountains where good crop-land is rare, he cultivates the small terraces, or improvises soil terraces by bringing the soil in sacks on his shoulders. But he too, like most land-cultivators, has the characteristic of being an individualist. He often spurns the sound advice of scientists. Still the propaganda which the Government has spread in the last few years, and particularly the progress realized by the agricultural coöperatives, have stirred the peasant so that he has ceased to reject entirely the modern methods of cultivation.

His mode of living is extremely simple. His food is of the plainest and he can be deprived of most of the comforts of life without missing them.

The unsanitary state of the rural population is deplorable, connected as it is with the malaria scourge, putting a continual and oppressive brake upon the activity of the people. This condition is attributable in summer to streams and pest holes of malaria infection. Because the amelioration of this condition requires much and protracted work, the Government introduced a widespread propaganda on malaria⁴ prevention measures. Great works are in progress aimed to control the menace of bodies of fresh water where danger still exists.

PEASANT HOME: The condition of the peasant's home is not uniformly satisfactory, frequently presenting great inconveniences. Two types of home are apparent: (1) The first type of home is composed of one or two rooms with no stable or storehouse. This sort of home is not hygienic because people and animals live together, or side by side. This inconvenience is, however, often slight, as the

¹ Annual Statistics of Greece, 1930, p. 34.

² The population of this category of towns was 571,735, equalling 9% of the total, *op. cit.*, p. 34.

³ Of the 2,415,078 people 10 years of age or older, who have declared an occupation, 1,475,641 are agriculturists (this includes farmers, fishermen and huntsmen) of whom 1,001,956 are men and 467,685 women.

⁴ The Government monopolized with good results the quinine supply and sale in 1908. From 29% of morbidity existing then, it fell 9.83% in 1915. Because of the lack of quinine during the war, it rose to 38%.

peasant's domestic animals are usually one or two goats, which due to the warm climate live mostly out of doors. (2) The second type of home, usually met in villages is one somewhat larger than the first, consisting of a ground-floor and upper floor. The former is used for a stable or/and storehouse and the latter for family living quarters. Aside from these two kinds of homes, cottages are to be found in certain villages of Thessaly and Macedonia just as small villas are to be found on the islands off the Peloponnesus.

Most of the homes which the Government built for the refugees who came in and settled after the war consisted of two rooms with or without stables or storehouses. Special kinds of houses have been constructed for the fishermen, and growers of silk-worms and tobacco.

3. LAND UTILIZATION

The total surface of Greece is 130,199 sq. km. One part is quite unsuitable for cultivation and is unproductive. The area of this barren land is not precisely known. It is calculated to be between 42,000-45,000 sq. km., the greatest part of which is composed of rocky and abrupt mountains or water area, i.e., rivers and lakes. This leaves some 6,000,000 hectares of crop land. Forests occupy 2,406,501 ha.; arable land, 2,400,000 ha.; and pastures the rest.

FORESTS: Of 2,406,501 ha. of forest, 1,668,468 ha. is state land, and 738,032 ha. private property. Even though the area, in comparison with the rest of the crop land, appears large, forests are not of great importance, since the greater part, 1,313,306 ha., is covered by brush and shrubs. Most of the Greek forests are composed of pines, fir, and oaks.

PASTURES: Pastures and meadows occupy 1,209,191 ha. Besides there are mountainous pastures the area of which is not exactly known but which has been calculated at three million ha. No one gives special attention to all these pasture lands and their present produce is not considered of great importance.

CULTIVATED LAND: According to the 1929 census data the tilled land is divided as follows: arable 2,033,256 ha., vineyards 196,134 ha., olive and fruit orchards 171,902 ha., totalling 2,401,293 ha. The arable lands are divided as follows: (1) 1,348,495 ha. actually cropped with cereals, vegetables, industrial plants, etc.; (2) 557,295 ha., fallow (mostly cultivated); and (3) 127,466 ha. potentially arable land.

The area of arable land could thus be augmented first by cultivating the third category of land and abolishing the fallow, and

second, by diminishing the pasture area and draining the marshes. Although there is no precise data on the fallow, its area is diminishing, owing to the settlement thereon of native peasants as well as refugees, and to the intensification of culture.

The practicability of reducing pasture areas is not great, because the actual pastures are mountainous, thus unsuited to cultivation. Through the drainage and reclamation of marshes and of some shallow lakes, considerable and valuable areas could be added to the arable fraction of land. The surface thus occupied by marshes is calculated to be 115,931 ha., that occupied by the shallow lakes, 258,358 ha.

4. SUMMARY OF THE PROGRESS OF AGRICULTURE, 1918-1931

POSITION: Agriculture takes an important place in the national economy of Greece. That the agricultural population exceeds the rest of the population is evident. In addition, the annual income from agriculture and forestry is estimated as 20,400,000,000 drachmas¹ of 47,000,000,000 dr., the total national income. That is, the income from the land is 43% of the total. In export trade, agricultural products account for 94% of the total. The exportation of four products — tobacco, dried raisins, wine, and oil, form 82.72% of the total exports of Greece.

This eminence of agriculture has always caused the Government to take an interest in agricultural progress. Since Greece won its independence the Government has taken measures particularly aimed to effect the agricultural education of the peasants. These measures are, however, very limited and inadequate because of the lack of financial means and of the depressed condition of the peasant. The correlated problem that has engaged the attention of the state has been the distribution of rural property. It has proceeded at intervals to distribute a part of the national lands and also the land left to the Government by wealthy Greeks. Since the situation, especially that of peasants of Thessaly, was unsatisfactory, the state, backed by a constitutional decision, expropriated all large land-holdings for the benefit of peasants.

MINISTRY: In 1917 the agricultural and forestry services, and also those of the divisions of the state were consolidated into an independent Ministry of Agriculture. This was a measure of great significance. From this time dates the development of Greek modern agriculture. An onerous work fell to the Ministry, due to the primi-

¹ Par value of the drachma is 1.3 cents.

tive state of agriculture, the ignorance and individualism of the peasants, and the thorny task of distribution of state property. Thus the Ministry had to solve two completely different problems: (a) the agricultural reform, and (b) the amelioration of agriculture.

For the foregoing reasons, the post-war period of agriculture can be separated into two different periods: one from 1917 to the end of 1928, and the other from 1928 to the present. During the first period, the efforts were concentrated on agricultural reform and the settlement of the refugees. This work having been satisfactorily settled, a proper agricultural campaign then began. Nevertheless, during the first period many important legislative measures became effective in the attempt to put agriculture ahead.

The characteristics of the second period are the application and development of these latter measures. However, the crisis which fell on agriculture in 1929 obliged the state to take other measures for the betterment of the conditions and the marketing of the most important agricultural products. A full discussion is given below. Herewith is sketched the most important of these measures.

LAND REFORM AND THE REFUGEES: The Agricultural Reform of 1917 and the settlement of the refugees (1922-1928) were the chief problems to engage the attention of the successive governments of these periods. These reforms were expensive and extensive and required expert generalship to bring them to successful issue. To awaken the peasant, to focus his attention on the new methods of culture, and to make him love his profession, were new aims for the ministry.

EDUCATION: In order to accomplish these objectives, agricultural teaching has been organized in all its forms. The superior school of agriculture of Athens was founded in 1919, another middle agricultural school in Patras in 1920, various practical schools in 1929, agricultural extension courses in 1930, travelling schools of agriculture in 1931, besides continuing a national system of conferences of agriculturists. Chambers of Agriculture were inaugurated in 1919-1928. Agricultural coöperation has been fostered. Special inspection service has been operating since 1919. If these measures have not completely changed the peasant, they have aided greatly in ameliorating crude methods and stubborn opposition to modern farming methods.

CREDIT: In order to give to the peasant financial means to prosecute modern agriculture, the Agricultural Act of 1914 was supplemented by the Agricultural Warrant of 1920, resulting finally in the founding of the Agricultural Bank in 1929.

TAXES: Because of the crisis certain taxes on oil, for example, were exempted in the years 1929-1931; customs duties were raised, for example, on wheat seed, oil and cotton. On the other hand, duties on some export products, for example, olive oil, have been abolished.

TECHNICAL SERVICES: A technical service was founded in 1930, which developed a compulsory association for drainage and reclamation of streams and marshes. This resulted occasionally in irrigation systems. In 1929 the five agricultural experiment stations were increased to nineteen. This was done to bring about an improvement in crop and orchard practices. In 1930 demonstration fields on properties of peasants were started. In 1919 modern agricultural mechanization was recognized as desirable and agricultural machines were imported free of duty and sold to the peasants at cost. The service was abolished in 1924 to be reorganized in 1929; in the latter period traction-drawn plows for deep tillage were introduced. In plant culture, special strains have been introduced from time to time, but the improvement of cereals by the introduction of imported varieties was widely introduced in 1930-1931. The many wild olive trees in Greece require grafting in order to make them economically productive. A law was passed in 1926 requiring peasants with olive trees on their properties to graft them. Since 1919 local organizations have been founded to fight the pests of the olive. Throughout the period under consideration, improvement in the production of olive oil has been pushed. Organized groups have fought against the *Phylloxera* by introducing resistant American nursery stock.

Agricultural insurance through coöperatives has been developed. Besides the above-named institutions for scientific research work, there have been established in the period of 1926-1931 the Pedagogical Institute, the Plant Breeding Institute, the Cotton Institute, and the Tobacco Institute.

MARKETING REFORM: Though the present agricultural crisis has affected Greece seriously, difficulty in marketing some Greek products antedate this period. Thus for the continuance and development of the trade in currants, an independent organization was founded in 1925. As a part of the program of this organization, improved processing and packaging methods were instituted. Similarly, for the development of tobacco growing interests, much specific work has been done. In order to improve the market for local wheat, Greek flour mills were required, in 1927 and subsequently, to mill increasing amounts of locally grown wheat. To facilitate this method, there was organized in 1929 a system of wheat markets, the prices paid to peasants in these markets being above the price in the international

market. In line with the foregoing, the government has increased the tariff on wheat.

In order to promote oil production, taxes have been reduced on olive oil and duties on exports have been abolished, and tariffs have been increased on vegetable seed oils. A Statute forbids the mixing of olive oil with seed oils. The state encourages cotton production.

The state has founded and supported several fundamental agricultural organizations, e.g., (1) the preparation of Cretan wine (Santorine), 1930, (2) the agricultural credit association of Corfu (1926), (3) the compulsory association of citron production and products (1929), and (4) the Office of Fig Protection (1930). To promote livestock development the state has established special stations in different districts as well as imported high-grade breeding stock. A part of the taxes on breeding stock goes to support these stations.

MORATORIA: Temporary farm-aid measures by the state include the suspension of taxes on corn and barley, and suspension of payments on debts. This moratorium on farm debts was necessitated by unfavorable climatic, coupled with depressed economic conditions. When peasants could prove to the satisfaction of state agents that they had suffered severely, mortgage payments were temporarily suspended. With conditions not improving in 1931 this suspension was extended for a period of five years. Thereafter debts will be paid by annuities.

5. EXPROPRIATION AND LAND REFORM

The distribution of farm property in pre-war times showed very important differences according to regions. In the southern part of Greece small farms predominated.¹ In the northern part, on the contrary, the large holdings occupied half of the total territory. There were some 2,259 of which 818 were situated in Macedonia, 584 in Thessaly, 410 in Epirus, 84 in the western Thrace, and 363 in old Greece. Their respective areas varied from 200 to 2,000 ha.

In May, 1917, the revolutionary movement of Salonica published the first decree of peasant land reform for Macedonia and Epirus. By the end of the year the reform had been legalized for the rest of Greece by Law 1072. According to this and supplementary laws²

¹ This has been calculated by Senator Mylonas, ex-minister of Agriculture, at about eleven stremmas (1.1 ha.) for Morea and less for the islands (Elefteron Vima, Feb. 1927). The fact that the farms could not be more than 10 ha. during the different distributions of the national lands in the 19th Century, explains the predominance of small properties in these areas of Greece.

² Prior to this, the Constitution of 1911 foresaw the expropriation of estates for the purpose of establishing the peasants deprived of arable land.

both state and church lands could be alienated by public expropriation. If these lands were not sufficient to provide a small farm for local peasants, private lands, if of more than 350-500 stremmas, were also expropriated.¹ An exception was made for large areas on which the proprietor lived, for areas between 50-200 ha., if operated for the profit of the proprietors who were directly cultivating these lands, and also for forests and wood-land if they are not indispensable for the settled peasants.

The cultivators and agricultural workmen living on the expropriated land, their widows and orphans, and also all other neighboring inhabitants who could not settle elsewhere had the first right in the division of these lands. These pieces of allotted land had to be large enough for a building site and had to have enough area for a small garden, besides that necessary for farming with a family of five. Small lots large enough for a garden were given to village artisans.

The lands were proclaimed expropriated after the decision of the Ministry of Agriculture and after advising with the Council of Colonization. From this period till the definite distribution of lots the peasants were obliged to pay a rent fixed by the local chief of the Service of Colonization. The rent was paid to the proprietors. All who have a right to these lands were obliged to form a local coöperative, which was and is responsible to the former proprietors for the payments of indemnities or rents. This coöperative has unlimited liability. The colonists are forbidden to sell, mortgage or rent their lots. They are obliged to cultivate their lands themselves.

A local commission of three members with a justice presiding, was organized to see that the members of the coöperative fulfilled the terms of the law, and to fix the rents due the former proprietors. These rents are calculated to be twenty times as much as the rents paid in the pre-war times plus a surcharge of 50-90%. From this surcharge 20-40% went to the coöperative and 50% to the State. These lots of land were temporarily given to the peasants, definite assignment taking place later after a special office of the Ministry of Agriculture measured the lots.

END OF ALIENATION: Five years' time was given by a provision of the 1927 Constitution for the alienation of lands; subsequent to 1932 no more land can be expropriated. Those peasants who have no lots definitely assigned them by the Special Commission lose all rights to them.

Up to the end of 1931, 1,626 areas had been expropriated and 272

¹ The areas left to proprietors depended on the amount of disposal land in the region, and on the density of population.

were in question before the Council. For 1,400 areas, a decision of the Special Commission has been already issued. Their total area is 1,142,051 ha., of which 765,074 ha. have been given to the peasants and 376,976 ha. have been exempted according to legal terms.

The lots given vary from 4-13 ha.¹ according to region, density of population, fertility of the land and prevailing type of agriculture. The indemnities which must be paid to the proprietors amount to 789,682,516 drachmas, 573,307,508 of which are charged against the coöperatives and 216,375,008 against the state. The Government was unable to provide other material aid to the peasants settled in Greece.

REFUGEE PROBLEM: The agricultural reform was not yet concluded when political events forced a new distribution of land due to increasing thousands of Greeks returning to Greece from their homes in Turkey and Bulgaria. This trek began at the opening of the War and reached its climax after the great disaster to the Greek army in Asia Minor (1922). This movement of Greeks came to head under the name of Exchange of Population after the treaty of Neuilly between Bulgaria and Greece (1919), and that of Lausanne between Turkey and Greece in 1923.

SOLUTION: These refugees from Turkey numbered 1,100,000, and from Bulgaria 50,000. To these must be added 58,000² coming from Russia. Thus an acute settlement problem was forced upon Greece. The magnitude of the problem was accentuated as the refugees from Turkey were deprived of everything. Greece was unable to provide place and subsistence for the hordes of refugees. Two big loans, totaling £13,000,000 were contracted under the auspices of the League of Nations. The oversight of the settlement of refugees was entrusted to an independent Office for the Settlement of Refugees, instituted for the purpose. The work was conducted with such intensity that within five years the greater part of the refugees were settled. For those derived from urban population extemporized colonies were constructed outside of towns; for peasants, lands were allotted. These peasants, 500,000 of them, were equipped with not only a house but also enough land, work animals, and capital to provide a living.

This replanted population, numbering 135,225 families, 538,048 persons, were settled in 1,954 small rural colonies³ of which 462 were

¹ In the central part of Greece the total area of the lots is 100 to 120 stremmas, in Thessaly it varies from 48 stremmas (Trikkala) to more than 130 (Larissa), in Epirus from 40-50 stremmas, and in Macedonia 40 to 120 stremmas. See Appendix for *measures*.

² See Annual Statistics of Greece, 1930.

³ 1,047 colonies are situated in Macedonia, 574 in Thrace and 373 in other districts.

completely new. The state provided for them 144,421 houses, of which 67,048 were built by the Independent Office, and 13,487 by the state. The rest, i.e., 63,886 houses were vacated when the exchanged Turks and Bulgarians returned to their respective countries. The expense incurred by the settlement amounted to £2,717,583; the area of land distributed was 839,044 ha. of which 503,537 ha. were arable.

Part of these lands, i.e., 592,130 ha., was vacated by the Turks and Bulgarians left at the time of the exchange of population. The state gave 53,639 ha., while 145,136 ha. were alienated from proprietors, Greeks of foreign extraction. Besides the above, 48,138 ha. of community or church lands have been expropriated and disposed of. The total value of all these lands is estimated at £5,500,000.

The land allotted each family varies according to the regions. It ordinarily totals 5-6 ha., of which a part is cultivated and another smaller part, pasture land. When used for tobacco or for gardening, the lots varied between 0.9 and 2 ha. They were set up with the necessary animals, tools and machinery, costing £2,534,567, of which 2,075,950 was for purchase of animals and 458,657 for equipment. A small monetary capital was also provided totaling £3,233,272. Besides, the Independent Office has executed work of general utility, i.e., the installation of water systems, drainage, irrigation, roads, etc., in a total of £794,822.

EFFECTS: The magnitude of this reform can be seen on considering that the new cultural lands occupy 14,000,000 of a total of 36,000,000 stremmas of agricultural area. One can easily see, but not so easily understand, what confusion this caused to Greek agriculture. No opinion of the long-term results of this transformation is yet formulated. The lack of sufficient capital and the smallness of the lots given to the refugees have contributed to their precariousness, a situation aggravated by the world crisis in agriculture.

One may note in Greece, as in the other countries which have also applied agricultural reforms, a diminution of profits; contrariwise, there is a perceptible increase in the cultivated lands, and consequently in agricultural production. The cultivated land of 12 to 14 million stremmas of the 1911-1920 period expanded to 14 to 17 million stremmas by 1931.

The Government and the Agricultural Bank direct all their efforts to ameliorate the reform. The measures they have taken foresee increases in the lots awarded as well as in the rental income. They, for example, increase available lands by promoting the reclamation of marshes and shallow lakes, and raise rentals by devising means to increase the peasants' margin of profits in products.

"CHECKER BOARD": The distribution of land, as stated at the outset, existed at first only in parts of the country, latterly to become generalized upon the initiation of the land reform and the establishment of the refugees. Statistics (1929) show that the productive surface of Greece is divided into 5,356,819 lots, averaging 7 stremmas (0.7 ha.) in area. This division of the land is serious. Not infrequently is met the case of a proprietor's disposing of 4 or 5 lots of those whose total area did not exceed 1-5 stremmas. The reform aggravated this condition, for the lands of the small proprietors which then existed have not been touched. The reform increased the existing number by the fractionation of expropriated estates.

THE "DOMKA" SYSTEM: Meanwhile for Thessaly and Macedonia the inequities and unscientific attributes of the reform are compensated by the *domka* system of cultivation. It consists of the application of the same kind of culture used on wide areas irrespective of ownership. The area is usually divided into 3 parts, one for crops, one for short and one for long fallow. The fallows are used for pasture. This method permits mechanized culture as well as other rational land management procedures. Domka and lack of registry offices and clear titles largely explain the slow progress of the reform in the north.

6. TECHNIQUES AND PRODUCTION

The varied climates of Greece allow a great variety of culture; but they are unfavorable to their high development. Because peasants continue certain ill-adapted cultures, production is limited and unprofitable, aggravating the consequences of climatic conditions.

TECHNIQUES: The technique of culture is generally unsatisfactory, due to a variety of causes, i.e., the peasants' elementary technical knowledge, lack of sufficient equipment, neglect of soil conditions, and to small, widely separated lots of land. There are cultures, e.g., currants and tobacco, well-adapted to climate, soil, equipment and area, practiced along rational methods.

Much effort has been expended latterly by the Government to ameliorate this situation. But on account of the predominance of small scattered property extensive modern farm machines are seldom practicable. Thus the modern steel plow has not replaced that of Hesiod's age.¹

¹ Statistics for 1929 on agricultural machines were: Plows with one plowshare: wooden — 286,534, metal — 271,548; tractors — 700; harrows: wooden — 129,748, metal — 20,327; rollers — 63,760; seeders and drills — 181; fertilizers distributors — 27; straw and grass-tying machines — 454; rakes — 214; hay presses — 1061; reapers and mowing machines — 3046; threshing — 606; seed-cleaning machines — 1562.

The use of commercial fertilizers has made real progress in southern Greece, especially in Morea and Crete. Unfortunately, the decline of prices of farm products has not been accompanied by a corresponding drop in fertilizers prices, seriously affecting since 1928 the advance being made.¹

As peasants were quite unable to clear unused brush and shrub land, the Government undertook the work through a service division of mechanical culture of the Ministry of Agriculture. This service put into the field, especially in the north, 117 mechanical plows. Besides clearing land, this service will make periodic deep plowings of fields of those peasants contracting for it. This deep tilling results in an important increase of yields, particularly for spring crops. During the past five years 236,679 stremmas, formerly lands occupied by woods and useless meadows, have been brought into cultivation by the service. Much work still remains to be done in Thrace.

CONTROL WORK: Plant pests and diseases are under careful control. Owing to the sub-tropical climate of the country insect pests are extremely abundant, and if the peasants did not take efficient measures to protect their crops against them damage would be very serious. Great care is given to controlling grape diseases. Cereal diseases are not yet very prevalent. The fight against fruit-tree insects is generally neglected. Insect damage done the olive has led the state to establish, with special powers, regional insect control organizations.

As an example of careful scientific control organization the olive production² organizations merit brief description. They were established in 1923. A central council in the Ministry of Agriculture controlled the regional group. Loans, accessories and instructions were given by the central to the regional group. Funds were raised by levying a small tax on olive oil production. The receipts in 1931 were 30,766,140 dr., expenses 35,488,084 dr., with deficit covered from a reserve. All the wild and grafted olive trees in orchards, pastures and forests of olive growing regions, are organized under central and regional associations.

CEREALS: Based on the area occupied and the total value of products, the culture of cereals is the most important. There is not a village or agricultural colony in all Greece where cereals are not

¹ Beginning with 1920 and closing with 1931, the tonnage of fertilizer used annually by Greek farmers was 5,011; 10,976; 13,628; 10,722; 19,313; 20,526; 27,689; 49,047; 50,626; 50,623; 37,874; 35,910. A wider use of fertilizers will reduce the amazing area (29% of arable lands) now annually in fallows. This aspect of intensification is of fundamental importance to Greece.

² Central and Regional Protective Association.

cultivated. Their culture will rank first or second in importance. Cereals predominate on the plains of Thessaly, in central Macedonia, in western Thrace and in certain parts of central Greece. In Morea and Crete and on the islands, cereals lose their predominance.

According to the average statistics of the years 1926-1930 cereals were grown on 53.42% of the cultivated area. The average value of cereal production of this period was 3,121 million drachmas, equal to 32.3% of the total value of agricultural production. The average annual production of cereals for 1920-1930 was 774,684 tons.¹ Wheat and maize cultures ordinarily occupy the more fertile lands of plain and plateau. Maize is often on irrigated lands. On the less fertile lands, especially those of Morea and the islands, wheat is replaced by barley and maslin. Rye is cultivated more frequently in the mountainous districts.

The pre-sowing preparation of the soil varies with the cereal to be sown, and according to region, soil, exposure, and rotation. Special soil preparation steps are taken when a field is to be used for wheat or maize. Then the soil receives ordinarily two or three plowings, the last one of which is used for the sowing (seed being dropped in the furrow). Sometimes the soil preparation is completed by a number of harrowings. But unfortunately many cases occur when the wheat is sown without any previous soil preparation, in which case the seed is covered by a shallow plowing and then left. In northern Greece, the peasants usually have relatively strong draft animals, and use steel plows; whereas in the south fewer peasants are so equipped. Consequently, the work of the north is better done. But the peasants of the south use commercial fertilizers more frequently than peasants of the north.

ROTATIONS: Rotations of various sorts are employed in cropping the cereals. One of the more common is the rotation of a cereal followed by fallow. After the settlement of the refugees the fallow lost its accustomed place owing to the lack of sufficient lands for cultivation. However it occupies even yet a considerable area as we have already seen. In case lands are very poor two of the three years of a rotation are reserved for fallow. A frequent rotation in Attica and the islands is wheat one year, succeeded by one year of non-worked fallow. In Thessaly the general rotation type is the 2-year fallow-cereal, the fallow sometimes worked.

The 3-year rotation comprises: corn interplanted with vegetables, maize with wheat or barley, and fallow. This is often met as is also

¹ Wheat production was 325,020 tons, barley 151,203, maize 163,156, oats 72,349, rye 40,729 and maslin 22,227.

the 2-year rotation of maize and wheat. In the cereal regions of the central part of Macedonia and Thrace, heavily settled by refugees, where there is a great lack of crop lands, non-rotation of crop, i.e., continuous cropping, is frequent. In some of the villages of these districts there is alternation of crops and not infrequently either fallow or cultivated fallow. In some parts of Macedonia refugees have introduced legumes in their rotation. Often the culture of tobacco determines the rotation. In central Macedonia tobacco is cultivated first, using half of the land, while sesame and dry legumes occupy the other half. In the second year wheat occupies the whole area.

In the south is met the 3-year rotation, i.e., fallow, wheat and barley or oats. Frequently in Bœotia there is the rotation of cotton-maize on the irrigated lands, and of cotton-wheat-vetch (hay). In Attica a usual rotation is: fallow, vetch hay, barley. In western Greece, especially in Epirus, maize occupies the same land without interruption on irrigated as well as on non-irrigated lands.

Cereals are usually sown broadcast and the seed is usually covered by the wooden plow. Maize is seeded in rather irregular rows furrowed out by the plow.

Harvesting is generally done with the scythe. In the central part of Macedonia and in Thessaly many agricultural coöperatives have reaping and threshing machines. In these regions there are contractors who possess these modern machines which they rent to the peasants, receiving as service rent 8-10% of the harvested grain.

Favorable conditions for the production of cereals do not exist everywhere in Greece. The irregularity of rains which is most noticeable in south Greece, and the long dry period which commences in spring and often lasts till late November, hampers cereal culture. To unfavorable natural conditions are added irrational methods of culture, and the poverty of the soil in plant foods and organic matter. To these are added the slow reduction of fallowing in the different parts of the country, especially among the peasant refugees, and the substitution on unfertilized lands of continuous for rotation culture.

The respective area production and yield of the years 1921-1930 are given in detail in the Appendix, Tables I and I-A. A glance at these data shows unsatisfactory cereals production. Yet in spite of this discouraging condition, the culture of cereals, especially of wheat, does not lose its importance for the country, and this for many reasons. The replacement of this widely diffused culture by another is hard to effect, due to the difficulties attendant upon the introduction of new techniques, and to the lack of necessary capital

for substitute cultures, often requiring expenses greater than the low production costs of the cereal cultures.

But the chief reason for continuing the culture of the cereals lies in the peasants' crying need for bread, their principal food. Especially in a crisis like the present one it is unwise to replace popular though climatically ill-adapted crops (the products of which have an assured place in local markets) with climatically adapted ones whose products exceeding the needs of the country would encounter export difficulty. In fact, the production of the different cereals does not meet the domestic needs of the country, the deficit requiring large imports of foreign cereals, especially of wheat.

TOBACCO: The second place from the point of view of the value of production is occupied by tobacco. The average area put to tobacco (1926-1930) was 928,903 stremmas, i.e., 5.18% of the total cultivated area. (See Table II, Appendix.) The average production was 55,588 tons, and the crop value amounted to 2,030 million drachmas representing 21% of the total value of agricultural production.

The high quality of Macedonian tobacco is due to a combination of special conditions of climate and soil of certain districts of Macedonia, notably the valleys of the Nestos and the Struma. Tobacco culture is not a recent introduction in this section, but it was only after the annexation of Macedonia and Thrace, exceptionally fitted to produce choice leaf, that tobacco farming developed. Recently settled refugees are very expert in tobacco culture and have made great contributions to its extension.

Tobacco culture now occupies some six times the area cultivated in 1911, when 154,649 stremmas were grown, whereas 928,903 stremmas was the yearly average for 1926-1930. In contrast, the area in cereals in the same period passed from 5,721,990 to 9,362,548 stremmas. The value of tobacco exports in 1913 was 14.6% of the total exports as against the average tobacco exports for 1928-1930, being 56.27% of the total exports. The production of Greek tobacco is 40% of the total production of Oriental tobacco and represents 3.5% of the world production of all tobaccos.

The great importance of our tobacco culture for our country is clear if one considers that there are 166,399 families working in it, i.e., nearly 20% of the peasant farm families. Besides that there are 43,666 workmen corresponding roughly to an equal number of families, who participate in the processing of tobacco, of which 12,900 have no other occupation.

Tobacco contributes a large share of the income of the state. In the budget estimate of income for 1930-1931, 280,000,000 dr. are

anticipated from taxes on tobacco production. The sum of 1,265,000,000 dr. is expected to accrue from consumption taxes with a total income of 5,734,308,000 dr. from direct and indirect taxes.

Tobacco land, usually loam or sandy loam, is the most fertile; its tillage before and after planting is done most scrupulously. Tobacco in rotation is not unusual, but aside from such, tobacco is usually single cropped, monoculture. Due to the care lavished on tobacco, this culture gives comparatively satisfactory yields.

TOBACCO TECHNIQUE: Tobacco culture is divided into four parts: (a) The sowing of seed in the spring in the carefully prepared and tended nursery. Here the seedlings receive great care until they become 10-12 cm. high, or the spring frosts are over, when (b) they are transplanted to deep-plowed and subsequently shallow-plowed and harrowed fields. The seedlings are planted in rows 35-70 cm. apart according to variety. (c) The field care given is the replacement of weak plants, three or four hoeings, and irrigation for some kinds of inferior tobacco. (d) The harvesting of leaves is done five or six times, since leaf maturity is irregular.

The time of harvesting is important because it influences the quality of the product. The gathered leaves are left to dry in the shade for 48 hours and then are exposed to the sun's rays for 7-20 days. In case of rain or of heavy frost, the drying leaves are covered. After drying the leaves are stored till dampness makes them soft enough to handle without breaking. The cost to peasants of manipulation varies from 1 to 10 dr. per kilo.¹

Yield of tobacco varies greatly as to region, due to soil fertility, the diligence of the cultivators and the variety of tobacco. Thus the variety *Basmas*, with thin small leaves, producing tobacco of superior quality, yields but 130 kilos per str. Yield of other varieties varies from 85 to much above 130 kilos, especially for the irrigated varieties. Because the qualities of tobacco are very much influenced by the kind of culture one cannot obtain greater yields, especially for choice tobaccos, by the intensification of cultural methods, since the use of strong fertilizers will increase yield but reduce quality.

VINEYARDS: The value of vineyard products, 1,863,730,196 dr., i.e., 19.29% of all agricultural products, exceeds that of tobacco.² Vineyards³ occupied in 1930, 2,153,058 stremmas, 11.04% of the total cultivated area. The largest area, 1,368,030 str., was occupied

¹ Tobacco variety cost in drachma per kilo: *Basmas*: 5.50 to 9.50; *Basti-Bagli*: 4.00 to 6.25; *Smyrna Perfumed*: 0.80 to 1.20; *Kaba-Koulak*: 4.00 to 5.50; *Samsoun*: 1.00 to —; *Trebizond*: 2.30 to —.

² Average annual value, 1926-30. See also Appendix, Table III.

³ Average annual value, 1926-30. See Appendix, Table III.

by vine for must (juice), 99,400 str. for table grapes, followed by 623,216 str. currants and raisin grapes (Corinthian) and 62,414 str. of Sultanina raisin grapes. It is obvious that table grape culture has not yet attained the vogue it merits. Of the total annual value of agricultural products the value of must is 7.22%, table grapes 0.88%, dry currants and raisins (Corinthian) 10.13%, and Sultanina dry raisin 1.07%.

The average annual production¹ is 153,322 tons and is a characteristic culture of our country. Before the annexation of the new lands to Greece (Macedonia, Thrace, Epirus, Crete, and the islands of Aegean), the vines for raisins constituted the chief culture, the only culture producing an important export. For example, the approximate value of the exports of the three years 1901-1903 was 36,534,000 gold drachmas, while the export value of dry currants and raisins (Corinthian) for this period was 34,875,000 gold drachmas, thus constituting 40.32% of the total export value for the country. In contrast the approximate annual export value of this product for the three years 1928-1930 was but 10.33% of exports.

CURRENTS AND RAISINS: In the pre-annexation period, the dry currants and raisin crop was the axis round which revolved the public and the private economy of Greece. A reduction of production or of export of this product caused very grave trouble alike in trade and national budget. When forty years ago the market of France was closed because of the *Phylloxera*, France importing great quantities of dried raisins for the manufacture of its wines, a serious crisis was thereby precipitated in Greece, causing the crash of 1893 after the Greco-Turkish War. Today dried vineyard products are no more the monopoly of Greece. Australia has introduced the culture extensively, raising a serious competitor of Greek dried currants and raisins in foreign markets, in spite of the choicer quality of our products.

Vine culture for dried products however continues to be, for the most part of Morea and for certain Ionian Islands, the key culture on whose export value depends the welfare of the peasants. The yield of grapes for currants (Corinthian) and raisins varies. The highest yields are obtained from the vineyards situated in the fertile lands, especially those of Massenia and Helia. Where yields are high, e.g., sometimes exceeding 600 kg. per str., the product is of inferior quality. In the Aegean region where vines produce choice raisins (Bostizza), the yield is approximately 260 kg. per str.

The culture of Sultanina grapes for dried raisins was introduced

¹ Average 1926-1930.

from Asia Minor in 1838 and was first in Morea. Later, in 1906, it was also introduced from Asia Minor to Candia, where it was found to be most favorably adapted. Since 1906 the Sultanina has spread to Crete and Morea so as to constitute one of the most important cultures. The growth of the Sultanina for dried raisins is indicated in production, being 64,015 quintals in 1923 and 157,187 q. in 1930.¹

The basis for the development of Sultanina raisin culture when that of the Corinthian is stationary, lies in the fact that the product of Sultanina met less export obstacles than that of the Corinthian, and further, that among the refugees there were very expert cultivators of Sultanina, who made new plantations. The Sultanina is an excellent quality table grape, very much appreciated by the local and foreign markets, to the latter of which it was first exported in 1930. Large yields, e.g., 500 kg., are had in many regions of Crete where the culture is highly perfected. At Sitia the yields are often 800 kg., and exceptionally, 1200 kg.

MUST: Vineyards for must are general, but their great importance is in special regions of Morea, Euboea, the central part of Greece, Crete and the Ionian Islands. They occupy a greater area but have a smaller production value than those of the Corinthian vines. According to official statistics the average annual production (1926-1930) of must was 255,861 tons and its value including that of table grapes was 781,793,974 dr., 8.28% of the average value of agricultural production.

CULTURE: The culture of vineyards and the preparation of wine and dried raisins was known in our country from olden times, and their origin is attributed to Bacchus, considered the protector of the vine. Homer often speaks of the vine grown and the wine used by the Greeks of his epoch. The culture of the vine in general is practiced with care. The greatest care is usual in Morea, Crete and some islands. The intensive cultivation is nearly all done by hand. The closeness of the vines makes plowing difficult.

Equally effective scientific measures of pest control are not taken everywhere. *Oidium* control is usual, but *Peronospora* control is omitted in some regions which ordinarily are not infected by the pest, due to favorable climatic conditions. Preventive measures are applied regularly in the regions growing currants and Sultanina vines, and in regions of frequent rains and consequent humidity.

The yield of grapes for must is in general higher in vineyards situated on plains than on hillsides. Similarly yields in south Greece

¹ Beginning in 1923 and concluding with 1930 the production for the respective years in quintals was: 64,015; 82,576; 77,688; 75,348; 64,573; 112,394; 127,263, and 157,187.

are generally higher due to greater care being exercised there than elsewhere. A yield of 300 kg. is average, occasionally it is more than 500 kg. per stremma.

THE OLIVE: The olive tree¹ is of the tropics and subtropics and finds congenial climatic conditions for growth around the Mediterranean basin where it grows wild. The olive is a very strong tree. It has the virtue of growing a new trunk from its roots when the old trunk has been completely destroyed. The great number of olive trees which had been cut down during the Mohammedan Conquest, sprang up again and now form productive plantations. The olive tree lives for centuries. In Eptanese and Crete trees exist which were planted by the Venetians four or five centuries ago, and there are olive trees of even greater longevity.

But its vital importance is more evident when it is realized that its chief products, i.e., the olive and the oil, constitute, with bread, the essential food of the peasants. The annual production of olives is 82,141 tons of oil and 27,727 tons of edible olives. Among the countries of large production of oil, Greece occupies third place, led by Spain and Italy. Its oil production is 12.5% of world production.

The olive is not grown equally in all the country. The most important oil-producing regions are Crete, Mytilene, Euboea, the Ionian Islands and especially Corfu, some regions of central Greece and Morea. The most important regions for the production of table olives are Amphissa, Volos, Attica, Arta and Calamata.

There are occupied by the olive (1929) 1,507,392 stremmas, of which 1,371,335 are in trees grown exclusively for oil, while 136,057 str. are in trees cultivated for their crop of table olives. Besides olive trees planted in olive groves there are a considerable number of them (11,125,143) scattered in fields of other cultures. The entire area devoted to olives (1930) is 7.70% of the total cultivated area. The average annual value (1926-1930) is 1,586,268,838 dr., i.e., 16.8% of the total value of agricultural production. Eighty-three per cent of all the oil production and 46% of the table olives are domestically consumed, the rest is exported.

The culture of the olive tree is usually carelessly executed. Some proprietors pretend that it is useless to give great care to the olive

¹ It was known in Greece from ancient times, and to Minerva is attributed the introduction of its culture in Greece. Mythology has it that she planted the first olive tree under the rock of the Acropolis, since when the olive tree has been the symbol of peace. Branches of the tree were presented to the winners of Olympic games. Olive oil was also used for illumination and for the preparation of perfumes or for medicines. The people knew from this epoch the different ways of preserving olives. It was in order to protect this precious tree and to spread its culture that the ancients attributed its origin to Minerva, Athens' Goddess of Protection.

trees because of their low produce, but one cannot effect good results from trees which do not receive any cultural care. There are proprietors who never visit their olive groves except at the time of harvest. Sometimes the olive trees are intercropped with barley, oats, and vetch, in which case the soil is plowed once or twice, but such practice is usually unfavorable to the trees, reducing available water and plant foods. The competition is less severe when the intercrop, e.g., vetch, is harvested early in the spring prior to the season of soil moisture scarcity. In some regions of Mytilene, Crete, Sparta and Pelion the olive groves receive more rational cultural care, viz., one or two deep plowings, a fertilization of farm manure or commercial fertilizer once in two to four years, and a pruning every four years.

The fruit of the olive matures in the late summer and harvesting is done in different ways. More often peasants allow the fruit to fall and then gather it. This method is objectionable chiefly because of the deterioration to the fruit which ensues, this causing a reduction in the quality of the prepared oil. Sometimes the harvesting method is that of shaking the branches of the tree with a pole. The drawback to this method is that very often young branches are broken off which would have given fruit the following season. More rarely olives are gathered by hand with the help of a ladder, only the higher branches being shaken.

From the foregoing it becomes clear why olive production is very low. The yield of the olive tree even under careful culture does not result in an annual crop. This inconvenience is accentuated when little or no care is given to trees. In years of light production olive groves often do not give any fruit at all. Such off-years are frequent for olive trees which do not receive any cultural care. In olive-growing it is the custom to estimate tree-yield. In districts where care is given to the trees we get 2-3 kilos of oil per tree when the trees are well developed, but from trees receiving rational cultural care we get 4-5 k. The average yield however is lower, while trees which are uncared for yield 1.5 k. or less. The average yield of oil per stremma is only 16.8 k., i.e., 1.4 k. per tree.¹

The cultures already explained are the most important and engrossing for great masses of peasants, constituting the basis of both private and public economy of the diverse agricultural regions. Other cultures have ordinarily only local interest, due mostly to climatic conditions. Among these cultures are other fruit trees, legumes, sesame, cotton and anise.

¹ L'olivier grec (en grec) Athenes, 1931, P. Anagnostopoulos.

LEGUMES: The culture of legumes prospers in all the country but has limited importance. Small fields of legumes are found everywhere, very few on a large scale. But owing to their importance to the different rotations these crops are entitled to larger use. By increasing the area in legumes, livestock management would be facilitated, besides often furnishing an excellent addition to the food supply of peasants. The most important cultivated dry legumes are beans, horse beans, peas and lentils. Among the legumes cultivated for their seeds are the vetches, clovers and lupins. The average annual area devoted to dry legumes (1926-1930) was 576,194 str. or 3.7% of the total cultivated area. The annual average production for this period was 29,629 tons, valued at 141,573,300 dr., representing about 1.48% of the total production value.

VEGETABLES: Garden vegetables are cultivated to a small extent everywhere. In 1930 garden crops occupied an area of 324,957 str., i.e., 1.68% of the total cultivated lands. The average annual (1925-1930) value was 268,108,925 dr., or 3.78% of the total production value. Some crops also are cultivated in fields, the most important among which is the potato.

COTTON: Cotton occupies an important place among the secondary cultures and is destined to occupy a larger one in the near future. The most important centers of the cotton production are Bœotia, Phthiotis, Serres, Salonica and Laconia. The cotton cultivated area (average 1926-1931) was 171,212 str., or 0.6% of the total cultivated area. The average annual production of this period was 10,910 tons, valued at 102,752,000 dr. The yield per str. of non-irrigated lands varies between 50-100 k., of irrigated lands, 100-175 k. (See Appendix, Table II, p. 197.)

The cotton field technique is not ordinarily very rational. For example, the seeding is done broadcast. Cotton, if irrigated, is grown every year on the same lands without rotation. Fertilization is completely omitted or done only rarely. Natural quality of the product is very good and is comparable to the American grade, strict middling, but owing to the fact that peasants do not usually give proper care to their crop, quality suffers. In order to encourage the diffusion of modern cultural methods, the Government has recently set up a special Cotton Institute.

FRUIT TREES: The most important cultivated fruit trees are figs and citrus fruits. Citrus fruits are cultivated in very few regions because only a few have favorable climatic conditions. Furthermore, these trees require deep, rich, well-drained soil. The most important centers of citrus culture are special regions of Crete, Laconia and

Messina, Chios, Arta and Corfu. The annual value of citrus production (average 1928-1930) was 80,023,139 dr.

The fig tree is cultivated to a small extent nearly everywhere, but the most important centers of production are Messina and Laconia. The annual value of fig production (average 1928-1930) was 81,013,375 dr.

The almond tree is also cultivated to a small extent everywhere in south Greece. The most important surplus regions are Chios and Lassithi in Crete. Plantations of almond trees are rare and ordinarily these trees are scattered in cultivated fields and in vineyards. The annual value of almond production is 29,074,659 dr. Other cultivated fruit trees, listed in descending order of importance, are: other nuts, pear, carob, apple, and chestnut.

Fruit tree culture is usually performed with great diligence. The citrus groves of Chios, Crete and Laconia, apple orchards in Pelion, as well as figs in Messina and Laconia receive great cultural care. In general less care is given to the almond, the chestnut and other nut trees. Sometimes carob trees are quite neglected, except at harvest time.

All agree that great efforts should be expended on the development of arboriculture in Greece, where climate and soil in general are favorable, and where economic demand is unsatisfied. The fact that the intelligence of the arboriculturists is greater than that of the other cultivators, and that they are more adapted to technical progress, is guaranty of success when concerted promotional efforts are made.

LIVESTOCK: The dominant form of animal husbandry has been determined by the natural environment. In Greece there is available no great expanse of rich vegetation all the year round, nor are conditions suitable for the establishment of large-scale artificial meadows. These strictures have imposed nomadic animal husbandry.

SHEEP AND GOATS: The animals raised by the nomadic husbandmen are mostly sheep and fewer goats. It is not possible to raise cattle under nomadic conditions, as cattle cannot follow flocks of sheep in the mountainous places when the growing grass is very sparse. Shepherds usually form temporary associations among themselves for the purpose of hiring a common range for general pasturing and breeding their animals. The nomadic shepherds with their families have with few exceptions no special place of shelter, but follow their flocks and remain in temporary campings; summer times, on the mountains; winter times, on the plains. As they do not stay in one place permanently it is impossible to store supplies of feed, very necessary in winter when pastures are snow-covered. Thus

stock is not provided for in bad weather, and this results in considerable losses, in the heavier winters, of young, undernourished animals.

During the settlement of landless local peasants and refugees in accord with the terms of the Land Reform Acts, the most of the plain's pastures were united as integral parts of the allotted farm lands. These new owners might use these former pastures, after clearing them, to complete their allotments. If the areas of these lots were as usual small, there was, of course, insufficient pasturage to support much of a livestock enterprise. For this reason the pasture areas on plains which had been previously rented by the nomadic shepherds, have been reduced, resulting in a decline in nomadic husbandry. The number of families of nomadic husbandmen of north Greece, including Thessalia, diminished during the land adjustment period from 9,653 to 3,580 and that of sheep and goats kept by them, from 1,700,000 to 950,000.¹ (See Table IV, Appendix.) This striking decrease of nomadic husbandry has been counterbalanced by the development of the peasants' efforts, so that after a short time the losses to the national industry have been made good through the peasants.

The breed of sheep kept by the nomadic shepherds is small, weighing when mature but 30-35 k. per head. They drop one lamb, very rarely two, and produce about 35 k. of milk after lamb weaning. In breeding these sheep, shepherds watch out to make for production of milk and meat, but pay very little attention to wool qualities.

The peasants' activities in sheep raising has had great developments in districts dominated by wheat culture, since here are abundant pasture areas. Sheep selected by peasant shepherds belong to the same breed as the stock used by the nomadic shepherds, but owing to the greater care exercised by peasants, better and more plentiful rations, the sheep of peasants are larger, more prolific, and weigh when mature, from 45-50 kg. Their lambs, at 2-2.5 months, weigh 15 kg. each. The stock of all the peasants of each community pasture in common, but their breeding is not done in common, as is done by the association of nomadic shepherds. On this one point only do the peasants fall short of the practices of nomadic breeders.

If milking of sheep were done in common, it would be possible to have proper installations for the preparation of good quality cheese. Likewise sale in common of the products could then be done at prices more favorable to producers. This system of husbandry is known in other regions, but generally pasturing of flocks is not done in common

¹ An estimate by M. Syrakis, General Inspector of the Ministry of Agriculture.

but separately by each peasant who entrusts the care of the stock to the smaller children of the family.

In some regions of the southern part of Greece and especially in the islands of Scopelos, Mytilene, Chios and Syra are highly selected strains of native sheep. Thus a ewe of Chios will give $2\frac{1}{2}$ -3 kg. of milk daily, making a record of 200 kg. for the lactation period, after weaning the lamb. They usually drop two lambs and occasionally three a year. These lambs at two months often weigh as much as 20 okes.¹ In these lands of south Greece, nomadic shepherds are found with the difference that here the shepherds have a fixed establishment in the mountainous villages, but the size of the flock is small in comparison to the nomadic flocks of north Greece.

GOATS: Goat herding is generally done by the nomadic system, since goat pastures in the most stony and mountainous area, inaccessible to sheep, can be used. Goats bred under nomadic conditions usually weigh 40-50 kg., bear one kid yearly, and are kept chiefly for their milk. They browse and feed on all sorts of forage and are easily acclimated, yet suffer from severe cold more than sheep. From goat's milk a good grade of butter is made, but goat's cheese is inferior in quality to that made from sheep milk. Domestic goats kept by families in the outskirts of villages are carefully selected to provide milk. These goats bear 2-3 kids a year, and give 250 kg. of milk in the lactation period subsequent to weaning the kid.

SWINE: Swine are bred in herds in regions where are found oak woods and wild chestnut trees. They belong to local races, and are not very exacting in feed requirements. They are small-sized at maturity, and the number of pigs in their litter is limited. A better race of swine is bred in the outskirts of towns, where they can find cheaper as well as more abundant and varied feed.

HORSES: Until recent years cattle and horses were reared on free range pasture lands, especially in Thessaly, Epirus, Etolia, Helia, etc., but today this method is outmoded. Horses were largely breeds used for saddle horses, hauling carts or as pack-animals. The great increase of the automobile, in some places replacing the former means of communication, has reduced the number of horses used for transport. More horses than formerly, however, are used for draft animals on the land, there replacing oxen, especially in farm colonies. Here peasants can use the same horse and cart for farm and local transport work. Horses required for farm work are usually imported.

BEEF: Beef cattle raising was formerly done on the free range, but no longer. Domestic meat requirements are mostly met by

¹ 1 oke = 2.82 lb.

importing beef animals. Oxen for draft purposes are supplied locally and domestically.

DAIRYING: Dairies are maintained in the outskirts of the cities, e.g., Athens, Piraeus, Patras and Salonica. The herd is usually large, stable fed, and kept rather closely in stables. The cows are generally imported. They are fed and bred carefully, giving very satisfactory yearly yields as high as 50-57 hectoliters. (For statistical data as to numbers of livestock see Appendix, Table IV.)

7. MARKETING AND MARKETING PROGRAM

Until recent years practically no measures aimed at trade protection and valorization of agricultural products have been taken. Exception was made to trade in currants, attention to which has been given since late in the past century. The present crisis and the competition of foreign products have compelled the State to grade and standardize products and to regulate domestic production in order to keep local as well as foreign markets. To attain these ends the State has inaugurated a protectionist policy on selected products and has tried to obtain advantageous commercial treaties.

CURRANTS AND RAISINS: Since the *Phylloxera* crisis, which boomed grape products, Greek viticulturists have extended their vineyards beyond all reason. With the re-establishment of the devastated vineyards in France a serious crisis befell Greek viticulture. The exportations which up to then were of 320 to 350 million Venetian pounds suddenly dropped to 220-250 (very rarely to 280) million, while the prices which during the European crisis fluctuated above 300 drachmas per 1,000 Venetian pounds dropped to 75-110 drachmas. As it was a question of prime importance to the nation, clever but not always effective measures were made to regularize the market offerings, and to obtain thereby a satisfactory price and so to eliminate the crisis, by the retention on exportation.

CURRANT OFFICE: At first the problem was attacked by the State itself, later successively by a special bank and by a privileged company, whose activities temporarily alleviated the crisis. But soon it appeared in aggravated form due first to the fact that other countries, e.g., California and Australia, produced exportable surpluses, and second to half-hearted enforcement. To remedy this situation an autonomous economic organization, the Central Currant Office, was founded in 1925. It was managed by a board composed of representatives from the government, from the export trade, from the spirituous liquor industry, from the Credit Institute that financed the

Office, and from the producers. Producers, particularly those belonging to coöperatives, are preponderant on the board.

The Office aims chiefly to protect trade in currants and raisins. Other and cognate aims are: (1) Regarding production, the study of scientific methods of quality production, lowering costs of production, the coöperative purchase of materials and implements required for vine cultivation, hail insurance,¹ and a propaganda education program; (2) Regarding trade, the common warehousing for the account of those concerned and to their order, the formation of standard grades, advertising and the extension of outlets, regulating offers of produce by organizing offices of reception and forwarding of samples, feeding the market by holding off offerings or by outright purchase of surplus, and support of the product by a special system of credits to the export trade. Elsewhere is discussed the steps taken for the improvement of varieties and the lowering of costs of production. As to trade, the Office directs its efforts to two points, viz., better appearance, and commercial valorization of the product.

PACKING PLANTS: To reach the first object the Office regulates the vintage, drying and packing of the product.² The Central Currant Office has the right to seize products that are not handled in conformity with the conditions set by it. It has arranged with the General Warehousing Company for the warehousing of the produce at a relatively small fee. In the warehouses weighing, cleaning and preserving are undertaken, and so effectively have these been done that waste has dropped to $\frac{1}{2}\%$.³

BRANDS: Products marked for sale and especially for export, are very strictly inspected. In that way currants containing waste or foreign materials cannot be offered, nor currants not completely dried, imperfectly cleaned or containing thick seeds in excess of 2%. The representatives of the Office have the right to go in and inspect the products at any time, either inside the warehouses of export, or at the time of export. If an infringement of one of these rules is ascertained the Custom House service is obliged to stop the loading

¹ Owing to great losses sustained by the Office, the insurance of production against hail and frost has been entrusted to the Central Agricultural Insurance Funds.

² The vintage must be made at dates fixed for each commune by a Committee named by the Office, and at least in two turns. The drying is strictly inspected. It forbids spreading the fruit on the ground or on thrashing floors coated with dung, and obliges them to lay fruit on cement floors or on special apparatus (a kind of screen) supplied by the Office. The Office has delivered 4,825 such screens in 1925-26, 35,655 in 1927 and 75,000 in 1928. Furthermore it has equipped all the producers with waterproof cloth to protect their product from rain during the drying season.

³ Warehouses must have the floor in tiles or cement; the workers must have a medical certificate visaed every three months; wear special coats and caps during the work; packing must be made in boxes decked with paper or carefully smoothed with a plane.

and the product is seized. The trade in waste is forbidden; the waste is delivered to special warehouses belonging to the Office. For the protection of high qualities, brands have been adopted for districts, e.g., Vostitza, Corinth, Corfu, Zante, Pyrgos, etc. To prevent fraud in brands, the circulation of the product is regulated. Thus it is forbidden to bring raisins produced in other districts into the regions enjoying brand privileges, and likewise forbidden to mark them with the brands of another district. All these rigidly enforced regulations guarantee the good quality of the product. Effective control is due in considerable measure to the good will of the cooperative producers and to severe penalties for violations.

PRICE CONTROL: To facilitate trade in the products the efforts of the Office have centered on two points: (1) to aid the market by directing a part of the production to wine or alcohol manufacture (industry), and (2) to extend the outlets. To attain the first object it controls export by buying up estimated excess quantities. Every year the Office estimates the export quantities, those for the industry, as well as the ratios of these which the exporters must observe.¹ It also sets the minimum price at which it will buy a certain contingent of the excess quantities.

The quantities which become the property of the Office through its control system go to the industry. They are turned in to it either as raisins or as grapes. The raisins are used for the manufacture of potable alcohol, while the fresh raisin grapes are used for wine-making. The Office in order to open a new outlet for the production has had wine-making cellars constructed; four groups in 1928 and nine more in 1929. These provide 180 reservoirs to receive all fresh raisin grapes not designed for sale as dry raisins, amounting in 1928-1929 to 33,753,708 okes of raisin grapes, equal to 15,150 tons of raisins as compared with 11,400,500 okes in 1927-1928.

In order further to extend the outlets the Office has undertaken an active publicity campaign in the principal centers of consumption,² and elsewhere if the introduction of use of raisins and currants is considered possible. This campaign has developed consumption in some countries which previously were insignificant consumers. England, the greatest raisin consumption center, has noticeably reduced its demand due to the depression and to the fact that great quantities of raisins have been thrown on the market by California at prices 25% and sometimes 50% below those of Greek currants.

¹ This ratio is fixed since 1925 at 50% of the exported quantity.

² The Office has branches in the principal centers of consumption, viz., in London, Hamburg, Paris and Moscow. In other selected places it has representatives. All these agents send market condition and outlook information regularly to the Office.

Our producers, burdened with very heavy expenses, have not been able at once to adjust and have seen in consequence their 1929-1930 exportations reduced from 86,940 T. (1928) to 70,229 T. (1930). This drop in export tonnage has obliged the Office to reduce its price, resulting in an increase of exports (1931) by 7,680 T.

The Office has attempted to stop the competition for financial credit between producers and exporters. An arrangement for non-competitive credit extension was made soon after the Office was founded, by which the National Bank has undertaken to make advances to the producers on agricultural warrants equal to $\frac{3}{5}$ of the value of the warranted product, at a rate of 7% for coöperative producers and of 8% for isolated producers. Advances on current warrantage have amounted for the years 1926-27, 1927-28, 1928-29, respectively, to 18,191,026, 40,361,249 and 59,988,588 drachmas. The result has been to stop hurried sales at depreciated market prices during the early months after harvest.

TOBACCO: Another product that has been seriously affected by the present crisis is tobacco. It forms on value basis the principal produce of Greece. A reduction of tobacco exports ($\frac{9}{10}$ of production is exported) and of its prices has had necessarily a repercussion on the national economy. Particularly during the last two years a drop both in the exports and in prices has been noticed. Exports were lower in 1930 by 2% than in 1929 and in 1931 12% lower than 1930. Similarly, prices dropped 13% in 1930 and 23% in 1931.

The Government has taken measures to safeguard both the quality and prices fair to producers. To maintain quality it imposed in 1930 a set of regulations for the careful preparation of tobacco, and in 1931 the cultivation of tobacco on inferior lands was forbidden by law, leaving tobacco-growing free only in districts which grew superior qualities. In case of infraction of this law the tobacco is destroyed and a heavy fine is imposed on the offender. For the same purpose the picking of basal leaves has been forbidden as well as those which grow late, in order to avoid their mixture with the higher leaves which make the good quality. To attain this end provisions are made for stiff penalties against offenders (fine and imprisonment up to one month and confiscation of tobacco crop). Furthermore a Tobacco Institute with three district offices has been founded.

TOBACCO INSTITUTE: In order to restore tobacco prices, the Institute has tried to relieve the market of existing stocks, composed of previous crops and of deteriorated tobacco. The latter was estimated in 1931 at 7 million okes. If this low-quality stock were sold it would discredit Greek tobacco, buyers claiming that it had been

mixed with that of the new crop. It was therefore decided to repurchase deteriorated tobaccos and to destroy them under inspection regulations of the Ministry of Agriculture. This was done in the summer of 1931. For this purpose 20 million drachmas were granted; thus attaining the chief purpose while giving producers some recompense. Late in 1931, the market situation not greatly improving, it was decided to purchase tobacco of previous crops, and make the necessary adjustments under the inspection of a special committee. Two hundred million drachmas were set aside for this move. Proceeding, the committee has purchased 5,884,000 okes in Macedonia, valued at 141,656,000 drachmas. The price varied from 16 to 40 dr. per oke according to districts; the average price was fixed at 24.07 drachmas.

CEREALS: In spite of the fact that Greece is tributary to foreign countries for cereals, domestic cereal production has, as stated above, considerable importance. Steps have been taken to protect local production. First an increase of customs duty was put into effect in 1930. Duties on wheat which had previously been 4.30 gold dr. per q. were raised to 6 dr., on flour from 8.82 dr. to 10.70 dr. per q., on barley and oats from 4 dr. to 5 dr. and on corn from 2.5 dr. to 6 dr.

As early as 1927 steps were taken to insure the consumption of domestically grown wheat, namely, millers were obliged to use a contingent of local wheat, determined by a wheat commission. To avoid fraud, provisions were made for wheat concentration at points established. By 1929 the direct purchases by the millers had been superseded by purchases by the commission, which form of concentration maintains at present. The Agricultural Bank was the financing agency.

Since 1929 the purchase price has been fixed at levels above the world market. Thus the commission made its purchases at premium prices of 6.70 dr. (1929-1930), and at 6 dr. per oke (1931).¹ Besides these emergency measures, an Institute of Plant Improvement has been founded to conduct research on varietal improvement.

OLIVE OIL: Olive oil, another important product, has its principal outlet in the local market, only an insignificant quantity, barely 10%, being exported. Production was endangered because of the importation of oleaginous seeds to be used for the manufacture of edible oils. A strictly protectionist policy has been followed; customs duties on such seeds and on oils derived from these seeds were more than doubled. At the same time their mixture with olive oil has been pro-

¹Quantities concentrated in okes were as follows: 2,326,000 (1927), 6,450,000 (1928), 9,358,000 (1929), 19,300,000 (1930), 29,500,000 (1931).

hibited, but their use for industrial purposes freely allowed. Furthermore, all tax on oil has been abolished; while land taxes have been dropped to 25% of normal, and even more in regions entirely oil producers (Corfu and Mytilene). Finally, the State has tried to improve exportation by abolishing export taxes and concentrating potential export stocks.

WINE: In order to valorize Greek wines standardization is practiced, selected cellars have been favored and even subsidized, notably four groups in Crete, one in Leucas and one in Santorina. Also by successive agreements with France, which is the principal market for export wine, it has tried to assure an outlet.

COTTON AND CITRON: Beside these four principal products the State has taken measures for other products, such as cotton and citron. To protect cotton it has formed a research institute whose aim is to improve cotton culture in all respects including recommendations concerning pertinent legislative measures. To protect producers of citron, prices of which have dropped 90% in the market center of Candia, a compulsory marketing institute has been formed among producers.

SUMMARY: All these measures aim to help producers as well as to steady the equilibrium of our deficit trade balance. Our importations exceed exportations by 30-50%. (See Appendix, Table V.) Examining more particularly the imports and exports of agricultural products two facts stand out: (1) There is no adverse trade balance, often the exports column being considerably heavier. (2) These imports are 30%, whereas the exports constitute 94% of total exports.

IMPORTS: As an import item wheat weighs heaviest, representing 21% of the total and 45% of agricultural imports. During the last three years the average wheat importation amounted to 581,058 T., with average annual value of 2,552,531,678 dr. Imports of other cereals are not so important, the average annual value of imports amounting to 77,267,654 dr. for maize, 38,366,876 dr. for barley and 12,625,507 dr. for oats. Livestock and poultry products contribute an important part of imports, accounting, on an average, for more than 850,000,000 dr.

EXPORTS: As an export item, tobacco outweighs all others. It represents an average yearly value of more than 3,000 million dr., approximating 50% of total exports, and $\frac{2}{3}$ of agricultural exports. Exported currants and raisins have an average value of 800 million dr., or about 12% of total exports and 15% of agricultural exports. Exported wine averages 373 million dr.; dry Smyrna raisins or Sultanina, 182 millions; table olives and olive oil, 136 and 110 million

dr. respectively. Of secondary importance are dry figs (87 millions), citron fruits (31 millions), carobs (13 millions) and almonds (11 millions).

From this review of the movement of foreign trade it appears that while Greece imports products of first necessity, she exports processed goods. This when added to the high cost of agricultural production and means of transportation of farm products explains the adverse trade balance.

TRANSPORT: Above all, the excessive cost of transport can be considered as the chief cause of the retardation and under-development of our agriculture. High freight rates burden the products with heavy expenses. It has been estimated¹ that the cost of transporting wheat is higher from Alexandroupolis (Thrace) to Piraeus, than from New York to Piraeus. To this disadvantage also contributes the inadequacy of port equipment as well as the small rail mileage and consequent poor distribution of rail service. The rail right of way is 2,340 km. Present operation plans anticipate the improvement of 2,000 km. and the construction of 3,000 km. of new roads, as well as the renewal or repair of a part of the equipment. Thus great transportation improvement is envisaged, but unhappily, financing these works stalls their execution.

8. AGRICULTURAL COÖPERATION

The coöperation movement, as understood today, made its appearance here in the year 1900 through establishing the Mutual Treasury of Halmyros. Before this, one frequently met associations among stock-breeders, and primitive types, e.g., French fruit market and pasture-renting groups. Earlier, in the 18th century, were met associations resembling true coöperatives, but they were dissolved during the War of Independence (1821-1831) and were not reorganized.

FIRST STEPS: In 1915 a coöperative act, Law 602, took the first long step forward in the movement. It legalizes the activities of agricultural coöperatives, internally and externally, and forms the basis of current coöperative legislation. The act taking account of local conditions put into operation the principles of coöperation which other countries by their experiences had already established.

Initiative among agriculturists had not greatly surpassed the legislator. A new road was being traced without the help of any local experience, hence the system was slow in taking form. Coöpera-

¹ Ch. Evelpides, "The Agricultural Crisis in Greece," 1931.

tives, especially agricultural, could not be organized on the basis of a plan given to them in advance. The law therefore left freedom for the development of all systems of coöperation.

SUBSIDIES: In order to attract people to this new institution to insure its development, the law facilitated the organization of coöperatives by suppressing formalities and by according financial aid. All correspondence was free, e.g., franked. Likewise it exempted coöperatives from stamp duties for state or local taxes, applying to possession, rights, and imported and exported products of the societies. All these privileges were soon modified, due to the many conflicts of interests, especially concerning the protection of local industries.

Beside financial advantages, the law insured coöperatives against illegal interference. Punishment (six months' imprisonment and a fine of 10,000 dr., or both) can be imposed on any person, contractor, merchant, manufacturer, or capitalist, who for interest forbids or prevents any one's becoming a member of a coöperative; or if he advises him to leave it or if he uses illegal means to dissolve or damage a coöperative. The non-seizure of the loans granted to the peasants by coöperatives facilitates the application of these loans to agricultural needs.

REGULATIONS: The law had not neglected to protect the interests of third parties. This has insured faith in the new institution. The law requires the publication of constitution and by-laws, the keeping of a register to contain the full addresses of its members, the date of their admission and of their resignation, an itemized list of all administrators, and the authorization of papers issued by the association. It requires deposit of the annual balance including a true itemized account of profits and losses. It also regulates methods of administration restraining from service politicians and persons convicted of certain criminal acts. Some modifications of these rules, i.e., the reduction of social capital or of responsibility which could damage the interests of third parties, cannot be lawfully made without the consent of these parties. Besides, a special group of inspectors helps set up the newly organized coöperative.

The minimum membership of a coöperative is seven persons, but the membership is not rigidly selected, e.g., land proprietors who are interested in another profession than agriculture are admitted. All members are free to dispose of their shares as they wish. They must be 18 years of age, and must not belong to any other coöperative. Women and minors are eligible without the consent of the husband, father or tutor if they have a small independent income.

No formalities are necessary for setting up a coöperative, aside from the filing of its constitution and by-laws with the Ministry of Agriculture and the Agricultural Bank. This does not signify that a coöperative gets authorization from the Ministry or the Bank, which has no right to refuse or to modify these papers unless illegal in principle or detail. In all other cases only suggested modifications are made by the Ministry or Bank.

The maximum district of a coöperative is two communities, usually a village is the limit. The coöperatives have complete legal integrity. They can contract obligations, receive donation, act as merchants, and can consequently go into bankruptcy.

The constitution of a coöperative must specify the name, central office, aim and duration of membership; also the condition under which applicants are admitted or excluded, the requisite amount of capital required, how capital is to be obtained, how disposed of, the distribution of profits, the rules concerning business procedure, and how the balance is to be used and controlled.

The by-laws, however, do not have absolute freedom to limit the organization of the association. The law imposes certain regulations. It obliges members to subscribe for a membership share, leaving them free to decide as to its amount and how it is to be obtained. On entering, the members must pay the association not less than the tenth part of what they have promised to pay. It limits transference of shares, strictly prohibiting it to non-members, but leaving it optional among members upon a member's leaving if agreed to by the administrative council. It forbids the possession of many shares in the coöperative with unlimited liability, and permits the coöperatives with limited liability the right to fix the maximum number of shares that a member can possess. As withdrawal of members endangers the coöperative, the Act regulates such movement. A member cannot resign sooner than a year after his entrance, and then only at the end of a current year. The constitution can fix a longer time of membership but not over ten years.

The general assembly of the coöperative is the final authority. A quorum is half of the voters. Proxies are not usually permitted but may be for women and others in good standing, and then no member can vote more than one proxy.

A coöperative can dissolve voluntarily or legally according to the conditions specified by the Act. The property of the coöperative is disposed of according to provisions of the constitution but its reserve funds cannot be distributed. It devolves upon the coöperative in the district to be used for setting up another and similar coöperative.

GROWTH: The agricultural population has profited more from this Act than from the other types of associations. Thus, of 6,728 coöperatives active in 1929, 5,186 were agricultural.¹ This rapid development is evidence of the needs existing among the peasants. It is due largely to the need of favorable credit conditions and to exemptions enjoyed by coöperatives from taxes and custom duties. Propaganda by the State and the National Bank greatly aided the movement.

MEMBERSHIP: The membership in agricultural coöperatives has increased from 70,400 (1921), 91,773 (1922), 110,820 (1923), 167,259 (1924), to 226,300 in 1928. That is, 15% of the active agricultural population is organized into coöperatives. This proportion would be greatly surpassed if the membership (93,000) in compulsory associations, composed of settled peasants, were included.

The combined capital of the associations amounted in 1923 to 44,352,000 dr., of which 16,098,000 dr. were deposited. In 1928, the estimate was 158,000,000 dr. registered, and 96,400,000 dr. on deposit. The financial responsibility was ordinarily (1928) placed at 10 to 20 times the share-capital stock, estimated at 1,300,000 dr., for limited associations. Associations of unlimited liability are not popular. In 1928 of 4,927 coöperatives, only 510 were of the unlimited type.

Classifying the coöperatives according to their chief aims there were in 1930: 4,351 credit, 188 purchase, 430 sales, 270 processing and 515 miscellaneous. This enumeration is deceptive because the Act allows any coöperative to engage in many services, hence frequently little specialization exists among them. But Law 5289 (1931) has imposed some restrictions on this point and henceforth more specialization will develop in coöperatives.

CREDIT: The Credit operations of coöperatives represent their greatest activity. Parenthetically, it can be observed that the field of agricultural credit is largely occupied today by the Agricultural Bank of Greece, founded in 1929. Prior to this, from 1914 to 1929, the National Bank of Greece, enabled by a convention signed in 1914, accepted the obligation of extending 25,000,000 dr. agricultural credits yearly at 6%. The Bank was not limited to a simple execution of the convention and has contributed substantially to the work, surpassing the covenanted obligations, forwarding the coöperative movement. The agricultural coöperatives, to their great advantage

¹ The number of coöperatives organized yearly was: (1915) 150, (1916) 197, (1917) 275, (1918) 168, (1919) 124, (1920) 257, (1921) 327, (1922) 317, (1923) 408, (1924) 577, (1925) 1,033, (1926) 315, (1927) 333, (1928) 416, (1929) 501, (1930) 593, totaling 6,021.

have absorbed the biggest part of the amounts made available by the Bank. (See Appendix, Table VI.)

The loans were mostly personally secured, mortgage-credit being insignificant. The interest rate on loans to agricultural coöperatives in the period 1915-1929 was 5-6% on personal credit, and 7-9% on warrants. Besides the National Bank, four regional agricultural banks (State Banks) put out their funds on long terms. This activity however has not been specially valuable for agriculture, as the objective was not specifically agricultural.

AGRICULTURAL BANK: In 1929 the Agricultural Bank¹ was founded with the help of the State and the National Bank. The interest on short-term loans ranges between 8.5-9.5%, between 7.5-8.5% for intermediate, between 8-8.5% for long term and between 9.5-10.5% for the loans on warrants, depending on condition of borrower, whether an individual, an association, or union of associations. The Bank granted in 1930 1,317,891,618 dr. and in 1931 1,354,724,114 dr. Of these sums personal credits amounted to 879,498,390 dr. (1930) and 932,327,364 dr. (1931); on warrants 391,606,905 dr. (1930) and 385,597,736 dr. (1931).

Intermediate and long-term loans through coöperatives were insignificant when the agricultural credit was administered by the National Bank. This is explained by the fact that it was not a specialized agricultural bank, and so could not control the use of credit extended. Furthermore, in many regions of Greece the peasants cannot prove valid property titles. But with the advent of the Agricultural Bank agricultural placement and use were certain, and clear titles are increasing. Still the lack of clear titles is a very serious obstacle. In 1930 loans accorded on titles rose to 14,814,100 dr. and in 1931 to 36,799,013 dr. For 1931, 14,799,000 dr. were long-term loans and 22,000,013 dr. intermediate. The Bank has obtained favorable modification of the legislation on mortgages to facilitate the granting of such loans to agriculturists having clear titles.

Besides the foregoing loan activities, the Agricultural Bank promoted credit as follows: (1) in 1930 by advancing 124,283,704 dr. to the Wheat Commission for the protection of the wheat and for the purchase of domestic wheat, and in 1931 209,700,000 dr.; (2) for the purchase of carobs from producers of Crete, Cynourie, and Epidaure

¹ Its capital was formed as follows: (1) The Government subscribed 450,000,000 dr. ex-interest, of which 200,000,000 have been paid in, the rest to be paid in annuities of 20,000,000; (2) 500,000,000 dr. at 5%; (3) the capital of the four regional agricultural banks, 90,000,000 dr.; (4) the profit on emission over the price of transactions of the Bank of Greece, 40,000,000 dr.; (5) a part of the participation of the State in the profit of the National Bank, 1,000,000 dr. (1930) and 3,000,000 dr. (1931); (6) besides it accepts deposits amounting in 1930 to 221,429,251 dr. and in 1931 to 333,523,873 dr.

15,332,000 dr.; (3) for the purchase of damaged tobacco 17,764,500 dr.; (4) for the encouragement of the export trade of fresh fruits, 3,500,000 dr.; (5) and for the execution of selected hydraulic works 2,093,000 dr.

The Bank has organized a technical service which studies the conditions of each culture in the country and bases loan extensions on the findings of its research bureau. It has organized an inspection service of coöperatives. In 1931 this service asked the dissolution of 647 associations because of unsatisfactory activity. Thus the Agricultural Bank by its fundamental functioning becomes a powerful factor in the restoration of Greek agriculture.

COÖPERATIVE PURCHASES: There were 188 associations in 1930 engaged largely in purchasing agricultural supplies. The extent of these operations increases from year to year, e.g., in 1923 their business was estimated at 74,000,000 dr., and 180,000,000 dr. in 1928. The products bought by them are mostly chemical fertilizers, spray materials, and a modest amount of implements.

PROCESSING: Coöperative activity in manufacture is less developed, due alike to the individualism of the peasant, and to the scarcity of technicians with initiative. Active associations of this type of from 100-150 members each were as follows: 68 engaged in olive processing, 135 in making wine, 56 in dairy products, 3 in sericulture, 2 in preparation of preserves, and 6 processing miscellaneous products.

In all associations of wine-makers and the oil producers the members are bound to give to the coöperative part or all of their production of grapes or of olives. The quota is fixed yearly by decisions of the administrators. In case of non-execution of contract, a member is subject to a fine equal to the sum that the association would have had if the contract had been regularly executed. Appraisal of damages is made by an expert seconded by a member of the council of the coöperative and the violator, or the entire matter may be handled by a commission formed by a committee of members named by the assembly. Appraisal is on the basis of density in sugar or fat substances, or only on the quantity of the contracted products. Distribution of the profits is usually made on the basis of the shares owned by each member.

SALES: Sales of the association are specially developed for those products which must be placed on foreign markets, e.g., tobacco, currants, etc. Sale associations are distributed as follows: 262 dealing in currants, 92 in tobacco, 50 in olives, cotton and silk, 9 in figs, 5 in fresh grapes, 3 in cedars, 3 in oranges, and 3 in fruits, alfalfa and honey.

A conservative estimate of the total business done by the credit departments of sales associations was 149,038,109 dr. in 1923, and 235,000,000 dr. in 1928. The sale of dry raisins alone in 1927 was 186,171,728 dr. The association sales of currants and raisins are from 25-80% of the total production depending upon the region; and the approximate average is 40%. Thus in 1927, on a total currant crop value of 450,000,000 dr., 186,171,128 dr. was sold by the associations.

The number and functions of other coöperative associations are: 333 for hiring and purchase of lands and pastures, 129 for operating industrial plants, 13 for irrigation, 8 for livestock insurance, 3 for mutual insurance, 5 for labor, 3 for grafting wild trees, 2 for rice culture, 1 for apiculture, 3 for poultry raising, 2 for forest operations, 4 for land drainage, 3 for land credit and 8 for purchase of agricultural machinery and miscellaneous.

9. TAXATION AND INSURANCE

Greek legislation relative to the taxing of agricultural produce is clearly defective. It rarely follows the dictates of science. It is criticized by all Greek economists and financiers, but the Government, for fiscal purposes, declines to alter it.¹ It is burdensome to the taxpayer, as it does not affect the net but the gross returns. It is also inconvenient because for some products the tax is not collected directly, but by landlords. Its lack of unity is deplorable. Not only is almost every product taxed at a different rate but sometimes a product is differently taxed in various districts. Moreover, because of the granting of frequent temporary or definitive modifications and exemptions, an inextricable labyrinth is formed.

Taxes on net returns are established as follows: (1) The tax on cultivated farm lands was at first progressive, varying from 3 to 6% in proportion to the land's income; the rate now is 12%. A great number of undertakings, however, are tax-exempt, viz., those belonging to the Church, the Legal Institutes, public utilities, coöperatives, refugee settlements, communes, etc. (2) The tax on animal husbandry is 10% for domestic producers and 12.5% for operators living abroad. From this tax are exempted hog and poultry producers up to a minimum of 25,000 dr. in capital stock.

¹ Several taxes hold over from the Ottoman rule. The attempt made in 1919 to abolish them and to introduce a tax on net returns had a short life because the State, finding itself in fiscal difficulties, re-established immediately taxes on gross returns.

STATE COLLECTIONS: Taxes imposed on gross returns are divided into two classes according to the method of collection, viz., whether collected at the State Coffers or collected at the custom-houses. Four taxes on agricultural production, — oil, tobacco and cocoons are collected by the State Coffers. (1) Taxes on agricultural production are levied on all lines except on those of wine-vines, olive groves, forests, tobacco, opium, livestock, apiculture, sericulture, oleaginous seeds and cotton. They are applicable to all except refugees established near the frontier. The rate is 2.5% and it cannot exceed, with surtaxes collected to benefit the State, the cities, or the communes, 3% of the value of the crop. Tax notice is served and taxes are collected by each commune. A draw-back of 4% of tax receipts is allowed to the communes for collection expense. (2) The tax on oil is collected in some districts by the State Coffers and in others by the Custom-houses. This latter way of collection is practiced in the Ionian Islands, Candia, Mytilene, Chios, Samnos, Thasso, and in 12 communes of Pelion, while the former applies to all the remaining districts of the State. Formerly the rate was 7% on gross returns but recently it has been reduced by a quarter. In every province the collection of this tax is let by auction. It is collected in kind by the landlord (after a verification made at the olive oil mills immediately after the pressing of olives), while this latter remits in cash to the State. For plants equipped with refineries, the tax is estimated by oke of olives; its rate is of 0.2 dr. per oke, lowered if the price of oil is decreased. A base-price is fixed the first fortnight of September. The price on table olives is 0.2 dr. per oke. This tax burdens the net returns by 26%.¹ (3) The tax on tobacco is 17.6% on gross product. The tax is verified on the issuance of a permit for the possession of the tobacco.² (4) The tax on cocoons is set at 3% of the value of production.

CUSTOM-HOUSE: Four taxes are paid in Custom-houses, viz., on oil, Corinthian currants, figs and opium. (1) Except as noted in (2) above the method of collection is practiced. Oil normally is taxed (temporarily suspended) if exported or transported to the interior of the State. The tax rate is 12% on the price of oil and 0.2 dr. per oke of olives. The price is fixed every three months by a committee headed by the Prefect. (2) Taxes on the Corinthian currants are

¹ According to estimates of Professors Anagnostopoulos and Sideris, Superior School of Agriculture, Athens.

² These taxes are not really direct taxes, but are usually so considered. Every tobacco grower must declare the area cultivated by him, and its probable production, and immediately after harvest state where it is warehoused. Thereupon he is issued a "permit for possession of tobacco." Without such a permit any quantity of tobacco found in the hands of a producer is considered as coming from smuggling.

levied through the Central Office of Corinthian Currants,¹ not on isolated producers. Professor Sideris estimates the rate at 7% of production with certain restrictions. Not all the crop belongs to the producer, owing first to reserves of currants, and second to fluctuations of prices. Sultanina raisins are taxed upon exportation or transportation to the interior of the country and the tax is fixed at 0.75 dr. per kilo. (3) The tax on dry figs differs according to fig preparation. Simply dried figs are taxed at 4 dr. per stater,² for figs in cases it is 2 dr. (4) The tax on opium is 4 dr. per oke.

PROPERTY TAXES: Two taxes on agricultural property may be considered: (1) The tax on land is fixed at 3.5 dr. per stremma. At present it is suspended and dated back to 1929. (2) Livestock taxes affect goats, sheep and pigs, raised in the country. It is 5 dr. per head of goats and sheep, and 15 dr. for pigs. Lambs and kids under one year are exempted as well as small pigs under three months. Besides an exemption is allowed for 15 heads to every operator. Each peasant farmer must make a declaration of the number of livestock possessed by him and a census is made to verify these declarations.

Certain products, such as wine, are considered as being under an indirect tax. In this way are taxed wines consumed in towns of over 5,000 population or more; the tax rate is 5% on the average gross price of wine. However, this tax is rather a tax on production as it is paid by the producer and not the dealer.

LOCAL TAXES: Besides these principal taxes, local taxes or taxes for the benefit of certain institutions are also collected on almost all products. Such taxes may reach 50% or even 100% of the principal taxes.

The agricultural industry thus upholds a large part of the State budget. In the 1930-1931 budget the agricultural taxes constituted the 30% of direct taxes, exclusive of (1) the tax on the agricultural production (temporarily suspended), (2) the inheritance tax, and (3) the real estate transfer, all of which tax burdened rural progress. These supplementary taxes amounted to 510,681,400 dr. while direct taxes on agriculture were 1,722,928,800 dr. Hence, agricultural taxes are much higher than those levied on other classes.

INSURANCE: Crop insurance is rare in Greece. Aside from a small amount of ordinary fire insurance on buildings and effects in commercial companies among the country people, insurance is little used. The Government has tried to stimulate interest in agricultural

¹ The gross amounts fixed for the last five years were: 33 million dr. (1926-1927), 40 million dr. (1927-1928), 50 million dr. (1928-1929), 75 million dr. (1929-1930), and 75 million dr. (1930-1931).

² One stater is approximately 88 lbs.

insurance legalizing approved associations, and in 1926 specified the conditions under which such associations could operate through a Central Agricultural Insurance Treasury for reinsuring.

In 1930 only five companies existed and the Treasury was unable to function.¹ Because of little patronage, right was given it to write hail, frost and livestock insurance for individual agriculturists. Even with this increase in scope the Treasury was unable to progress and it was only in the year 1929 when it was reorganized that it began to develop.

Besides income from premiums the Treasury was aided by collecting a tax on transported farm products, whether foreign or domestic. The premium rates for producers or coöperative associations are fixed by the administrative council of the Treasury. The indemnities paid never exceed 90% of the damages caused.

The progress and hopeful results of three years' operations of the Central Treasury are:

	1929	1930	1931
Contracted policies	1,145	6,528	16,000 ²
Insured capital	42,172,816 dr.	130,892,660 dr.	320,537,443 dr.
Damages paid	3,546,166	5,297,718	11,164,169 ³

10. AGRICULTURAL AND POPULAR EDUCATION

ILLITERACY DECREASE: Improved popular education and better primary school organization have always claimed special interest. But great educational difficulties have faced Greece, viz., annexations of regions heavily populated with illiterates (1880 and 1912), and the refugee influx (1922). Still encouraging progress is registered: illiteracy in 1928 was officially set at 40.91%, in 1920 at 58.22%, in 1907 at 66.27% and in 1870 at 82.5%. Obligatory education, decreed in 1909, is at work.⁴ Education among women is less general, e.g., only 42.03% can read and write; among men the percentage is 76.59.

¹ The Central Office of Corinthian Raisins was compelled, as were fig producers, to take out insurance, but owing to heavy losses the requirement has been rescinded and producers are left free to insure or not in the Treasury.

² In 1931, 25,000 agriculturists were covered in one form or another by insurance, including the first year of livestock risks.

³ Besides these damages the Treasury paid fig producers hail insurance damages in the amount of 12 million dr.

⁴ This law when introduced was a dead letter due to war, lack of staff and to post-war events which revolutionized the country. Since 1929 the law has been enforced.

ATTENDANCE: During the year 1928 there were in all of Greece 8,101 primary schools, of which 361 were kindergarden, 7,735 primary, and 5 domestic science. Besides these there were 326 private primary schools. The numerical attendance in the primary schools was, in 1928, 700,723,¹ representing 77.25%² of the total population. The teaching staff in 1931 was 13,888, with a respectable average of 50 pupils per teacher.

INSTITUTIONS: The Government organized, along with primary education, real agricultural instruction in three stages: the highest, the middle and the practical. The agricultural institutes for the highest (collegiate) agricultural training are the Agricultural High School of Athens founded in 1919 and the Agricultural Section of the Faculty of Sciences of the University of Salonica founded in 1929.³ The length of the highest courses is nine semesters of which eight are spent in theoretical and practical studies, and the ninth exclusively in practical or field work. Students are admitted only on competitive examination. From 1919 to 1930 there were 132 graduates.

In 1930, a school for agricultural coöperatives was annexed to the Agricultural High School. The two-year curriculum for an annual class not to exceed 25 students comprehends accounting and the circle of instruction of coöperative activity. Graduates are eligible to inspector service in coöperative associations. Only graduates of this school or members of University faculties may now legally be on staffs of coöperative associations.

There are two middle-course schools: one for general agriculture in Larrisa and the other for arboriculture and viticulture in Patras. They offer three-year courses. Applicants are admitted on presentation of satisfactory school certificates; students live in dormitories. Some fifty graduate each year.

Practical agricultural instruction hardly existed until a few years ago. There was one practical school of dairying in Janina, and another practical school in Tripoli, and a third in Salonica. Now there are ten, experiencing indifferent success because the peasant will not willingly consent to be deprived for two years of the labor of his son in order to allow him to attend such a school. The total attendance of these schools is but 300.

Besides these, the Minister of Public Instruction has opened thirty-four primary agricultural schools, directed by agriculturists and attended by about 300 pupils.

¹ A century ago but 71 primary schools existed, attended by 6,721 students.

² In 1890 only 4% of the total population were attending primary schools.

³ Also, in the University of Salonica there is a special forestry section.

EXTENSION: In order to give primary agricultural knowledge to the peasant, there were organized in 1929 elementary courses and traveling schools. About one hundred of the former are carried on every Sunday in different parts of the country. About 3,500 students attend the elementary courses, which last at least forty weeks. The program consists of four hours of instruction every week of which two are theoretical and two of practical exercises. The instructors must have had two years' work in the Agricultural High School or any other school satisfactory to the Ministry.

The purpose of the traveling schools is to make peasant farmers specialists in the work of pruning and grafting trees. In 1930-31 one hundred twenty-two of these schools functioned with 2,850 pupils attending. This is quite satisfactory for the first year. Six hundred thousand trees have been pruned of which 100,000 were olives, 8,000 of which have been grafted. No great results have been obtained yet, but the large enrollment raises hopes for quick progress and favorable influence on agriculture.

AGRICULTURAL SOCIETY: Finally, there is the Greek Agricultural Society subsidized by the State. It was founded in 1901 on the initiative of King George I, for the purpose of serving and propagating the professional agricultural interests, as well as the development of agriculture. In order to extend its activity to every part of the country, it has formed local societies. This Society and its branches have established nurseries whose products were distributed to the peasant free or at cost. The Society introduced in pre-war times chemical fertilizers. It was active in importing sulphur and other chemicals for combatting plant pests, selling them at a very low price. It early propagated the utilization of modern agricultural machines. The Society imported registered or blooded stock to ameliorate the local races of livestock, and it organized agricultural exhibitions, published a great number of popular agricultural pamphlets, and in general has taken a leading part in everything relative to the interests of agriculture.

CHAMBERS: But of most importance are the Chambers of Agriculture which aim to protect the professional interests of the peasant. This type of institution was introduced in Greece in 1914 by Law 280. According to this law the Chambers of Agriculture can be organized in the chief town of each department. Their members are elected by the municipal and community council from two classes of people: one composed of proprietors, farmers, tenants of large domains or forests, and the other of small proprietors and farmers of agriculturists who have worked at least three years in the same territory. One

representative of each of these classes is elected for every 10,000 inhabitants of each community. The first Chambers were founded in 1919 but they stopped functioning till 1926, owing to the lack of means.¹ Now there are 32 Chambers. To them is due the organization of certain congresses and of agricultural exhibitions, the publication of pamphlets, popularizing agricultural knowledge, opening libraries in rural communities, supplying agricultural machines, and introducing seeds, plants, trees, and races of animals.

II. FARMER PEASANTS IN POLITICS

The societies and associations of agriculturists participate little in politics. Coöperative associations and chambers of agriculture are by law kept in absolute political neutrality. Thus Law 602 founding the coöperative association, and Law 5289 amending the former, provide for the dissolution of every coöperative association which as a whole takes an active part in any political party.

In order to save coöperative associations from the influence of politicians, the law forbids deputies, senators, mayors, and all candidates for these offices for three years from their candidacy or the termination of their term of office, taking part in the administration of coöperatives. Political discussions are forbidden during the general assemblies of the coöperative associations. They are also forbidden by Law 280 in the assemblies of the Chambers of Agriculture. But agriculturists and their corporations have a right to bring to the Government any question which concerns their interest. For this purpose Chambers of Agriculture are allowed five representatives. Aside from these organizations there are a few societies formed by agriculturists and others interested in agriculture. The purpose of these is the protection of agriculture and forests, to see to the afforesting of the mountains, and the embellishment of the country in general.

12. THE FARM INCOME

Before the agricultural crisis was evident, most branches of agriculture of the country showed deficits. The causes are attributable chiefly to irrational cultural methods, coupled with ill-conceived attempts to conduct enterprises unfitted to climatic conditions. Remoter causes contribute to the uncertainty of profit in many enter-

¹ The financial support for the Agricultural Chambers was obtained through (a) government and community provisions, (b) revenues of their properties, and (c) a tax imposed on selected agricultural products of their respective territories.

prises, e.g., the defective distribution of the land, its extreme division, incomplete development of the means of communication, the high cost of transportation, and the relatively weak state of the coöperatives, especially of such as process products and market them.

The agricultural crisis has aggravated the situation, quite upsetting the already unstable private economy of the peasant by aggravating the disproportion between domestic and land exploitation expenses. All exported products of Greece which competed with similar foreign products, as well as those consumed in the country, have depreciated despite the fact that the latter are protected by tariff barriers.

INDEX: The average drop in prices in exported products ¹ for the 1929-31 period in six leading export products ranged from 19% for table olives to 43.3% for dried raisins. The price data for 1929, the base year, were affected by the crisis, hence the indicated decline is not so sharp as it was in fact. The average decline in wholesale prices of agricultural commodities in 1930 from 1929 levels ranged from 23% for cotton to 60% for olive oil. Comparable data for 1931 are not available.

Exploitation expenses have declined little whereas produce prices have fallen drastically. For example: The price of superphosphate fell from 1,200 to 1,150 dr. per T., that is, only 4.16%. The price of the peronosporine (spray material) fell 8.63%. The index number of certain items, e.g., lighting, heating, etc., fell from 1,439 in 1928 to only 1,427 in 1930, an insignificant decline of less than 1%. This explains why most of the cultures are deficit enterprises.

The small proprietor-cultivators who, helped by their families, give their time to farming and who have labor expense, realize gross incomes which in general represent barely the reward for their work. For this group one might say that it would be more advantageous to them to hire out. This seldom happens, first because no proprietor would consider abandoning working his own lands as independent proprietor, and second because he would have difficulty to find work. The financial condition is more difficult for proprietors working their own land with hired labor, since labor wages have fallen but slightly.

DEFICIT INCOMES: It follows from the foregoing that for most agricultural undertaking net incomes are deficits. To best illustrate this, a study is given herewith of the most important cultures and the gross incomes obtained therefrom by the cultivators. — Tobacco: The cultural methods of tobacco vary greatly as to quantity and quality of leaf, the expenses and incomes of tobacco producers vary

¹ See Appendix Table VII for details.

greatly according to the region and to the variety of cultivated tobacco. The expenses of cultivating tobacco can be shown by itemized expenses for the variety. *Basmas* is cultivated in eastern Macedonia and western Thrace, a variety from which comes the highest quality of tobacco, and in a region famous for the production of choice tobacco. *Basmas* leaf was sold in 1931 at 40 dr. per kg. (the tax is paid by the purchaser). The yield under careful culture was 75 kg. Thus the gross income was 3,000 dr.¹ and net loss of 795¹ dr. per str.

INTENSITY FACTOR: The profit opportunity in the culture of *Basmas* is the highest of all the cultures, likewise labor expenses. Thus of the total expenses, 3,795 dr., 2,445 dr. or 64% are for human and animal labor. Because of this intensity, the culture is the most advantageous for Greece and wherever marked limitations of cultivated lands prevail, any culture which has a high gross income, a potentially high percentage residue in profits, human work and animal labor must be popular.

The area put to tobacco by a peasant and his family in tobacco regions is not generally more than 12 str. and the lots assigned to refugees in these regions have been fixed at approximately 9 str. When however the tobacco crop area cultivated by a family approaches 12 str., extra labor must be had in peak work periods, e.g., at planting and gathering. When as usual three or more members of a family are occupied with tobacco culture the 60-70 days are hired of the total of 360-470 days, representing nearly 15% for outside wages and leaving 85% to pay all expenses of the cultivator.

Incomes obtained from tobacco culture differ according to region. In Table VII, Appendix, is cited results of tobacco-leaf production. A small profit is shown for regions where the cultural expenses are relatively low and where leaf-manipulation is done in a very elementary, inexpensive way. Yet a net income per stremma of 263 dr., the highest recorded for inferior tobacco leaf, is not strikingly attractive, whereas 800 dr. loss per stremma in high quality production is shockingly discouraging.

WHEAT: As seen above the wheat culture is the most important cereal culture. It gives the best labor reward because of the relatively high local price insured by state protection. Thus wheat is the only cereal culture that always leaves a net profit to the cultivator.

¹ Cultural expenses in dr. per stremma: total cost of production of *Basmas*, 1931, was 3,795 dr. itemized per str. as follows: 3-4 plowings, 1 harrowing 350 dr., care in nursery 347, fertilizers 215, planting and watering 370, hoeing and thinning 245, gathering 790, transportation and drying expenses 115, peasant manipulation of tobacco 475, amortization of building and of animals 273, insurance against frost and fire 200, interest and incidental expenses 230, rent 185.

It is high or low according to the cultural methods used and to the region in which grown. In the north climate is most favorable.

The expenses per stremma approximate 403 dr.¹ with the yield 80 kg. and the price 5.5 dr., and 140 kg. straw at 0.4 dr. The gross value 495 dr., thus exceeds cost by 92 dr. Ordinarily the net profit of this culture is less than this, due to lower yield.

PEASANT'S YEAR: Taking a specific case of a farmer with 100 str. = 245 in the wheat granary of Greece, Thessaly, the farm set-up is approximately as follows: The capital is composed of 2 plow horses valued at 10,000 dr., 20 sheep 6,000, 1 plow and necessary tools 1,000, 1 wagon 3,000, and land 12,600 dr., i.e., total capital 32,600 dr. The peasant, his wife and 3 children make the family; two children take part in the work. The rotation is biennial, $\frac{1}{8}$ of the arable land, 33 str., is left in fallow. In spring-sown crops he puts out 5 str. in tobacco, 11 in corn and 1 in vegetables; in fall crops he sows 33 str. to wheat, 12 to oats and 5 to barley.

The farm value of produce is 34,349 dr., itemized as follows: 1,100 kg. corn at 2.95 dr., 3,245 dr.; 350 tobacco at 27,000; 1,500 vegetables at 0.6, 900; 2,244 wheat at 5.10, 11,444; 400 barley at 2,800; 1,020 oats at 22,040; 7,900 straw at 0.30, 2,370; flock income, 3,950; and poultry income 2,600. The family and farm needs are as follows: 650 kg. wheat valued at 3,315 dr.; 800 kg. corn, 1,600; 2,350, kg. barley and oats, 4,700; 1,500 kg. vegetables 900; milk and mutton 1,000, poultry 1,200, and 6,200 kg. straw 1,240. Besides, for seeding he uses the following: 45 kg. corn worth 133 dr., 435 kg. wheat 2,524, and 221 kg. barley and oats 442. Consequently the peasant has from the sale in the market only 17,305 dr.

The supplementary expenses for medicines, clothing, etc., are valued at 5,500 dr. and overhead expenses, e.g., taxes, insurance (fire and hail), interest on loans, veterinarian's fees, weighing of animals, etc., all amount to 1,350 dr. In addition amortization and depreciation items amount to 3,245 drachmas: 1,100 on land,² 200 buildings, 1,350 livestock insurance and amortization, and 575 tools and chattel mortgage. Thus the total of expenses to which the cultivator is liable to insure his living and the upkeep of his property amounts to 10,095 dr.

The work days per year are 176 for man, 430 for wife and children and 140 for horses. No help is hired. Valuing the work of the family

¹ The expense per str. in dr. of growing wheat (1931) was: 2 plowings inclusive of one for sowing and 1 harrowing 127, seed 85, harvesting 32, threshing and hauling to store 72, taxes and incidentals 47, and rent 40, total 403 dr.

² This sum is fixed by law far below market value of land but in accordance with compulsory expropriation procedure.

1 dr. = $\frac{1}{2}$ amount

and of the animals on the basis of 50 dr., daily, for man, 20 for woman and children, and 120 for horses, the total per year is 34,800 dr.

DEFICIT: The operator is rewarded for his work partly from cash sale of products and partly from the perquisites of his exploitation in the amount of 13,855 dr. Thus the family is rewarded 31,260 dr. for work which appraises at 34,800 dr., *deficit* 3,540 dr.

The above case is not one of intensive exploitation. The only fertilizer used is the manure of the animals kept on the farm. The cultural methods are not of a rational technique, e.g., the plowings are too shallow for climate, soil and crop demands; but explained by the light weight and low vigor of draft animals. Furthermore, this system leaves a third of the farm area in fallow.

FAULTS OF SYSTEM: Despite its faults the system prevails in Thessaly and Epirus and generally where cereals occupy chief place in the cropping plan. It is uneconomic in other details than those cited, i.e., it utilizes only part of the available family labor, it provides feed for a relatively small number of farm animals, and it reduces the number of economic farm units capable of sustaining farm families. To *intensify* the system: omit the fallow, supplement farm manure with commercial fertilizers, introduce in the rotation (in place of fallow) a leguminous forage crop, and thus accent livestock in place of cereal production.

Corn culture occupies a place among cereals second to wheat as to area occupied and value of products. Its importance is much increased by the fact that corn meal is generally used alone or mixed with wheat flour in making the peasant's bread, particularly in Epirus, Thessaly, and Macedonia.

The average budget for a stremma of corn is: 122 dr. for 2 plowings and hoeings, 12 for harrowing, 19 seed and planting, 120 hilling, 15 harvesting, 44 shelling and transport, 29 interest and miscellaneous, and 50 dr. for rent, a total cost of 401 dr. In a crop of 100 kg. grain at 2.5 dr. and 170 kg. stover at 0.5 dr., there is a gross crop value of 335 dr., leaving a deficit of 65 dr. Since 79% of the expense is for labor, human and animal, there remains a margin above fixed costs to attract effort. When the land is irrigated, yield is 200 kg. or more, when the net profit is 150 dr. Comparatively little corn land, however, is irrigated.

Cotton culture ordinarily does not leave a net profit to cultivators. Due to its intensity cotton growing is often advantageous. Its budget per stremma is: for 5 plowings and 1 harrowing 250 dr., seed and seeding 25, hoeing and thinning 35, 2 hillings 150, harvesting and transport 95, interest and miscellaneous 58 and rent 80, i.e., a total

cost of 693 dr. A crop of 90 kg. at 6.50 dr., plus 55 dr. for cotton stalks, brings the gross crop value to 640 dr., and results in a 53 dr. deficit. As with corn, labor costs in cotton culture are high, viz., 76% of expenses. Hence, the attractiveness of the cotton crop. Under irrigation and improved technique, modest profits are assured.

Currants constitute the most important vine culture, as already explained. The stremma budget is: breaking down the ridges 60 dr., pruning and tying canes 125, commercial fertilizers 87.5, hilling 210, sprouting 62.5, summer pruning 160, spray materials and spraying 195, harvesting 100, transport and drying 55, interest and miscellaneous 105, depreciation 20, and rent 500, i.e., a total cost of 1,580 dr. A crop of 260 kg. at 510 dr., plus cut wood, 30 dr., gives a stremma value of 1,356 dr., and results in a 224 dr. deficit. Labor costs account for 56.41% of expenses, but due to peak labor requirements outside labor is usually employed. This often amounts to as much as 40% of the labor requirement.

Must vineyard expenses and income are less. The stremma budget output is 1,035 dr., divided as follows: de-ridging, pruning and ridging 285 dr., pruning and spraying 105, fertilizing 80, harvesting, transport and pressing 120, depreciation 140, rent 270, interest and miscellaneous 35. A stremma of vines if carefully tended will yield 350 l. of must, which at 2.25 dr. fetches 787.5 dr. and with a credit of 25 dr. for pruning wood brings the income to 812.5 dr.; a deficit of 222.5 dr. Labor expenses account for 41% of cost.

Olive culture was suffering from low income before the crisis. Operators pulled up their orchards to find better use for land. But with the crisis came a drop of 50% in oils, aggravating the abandonment. The annual budget per stremma¹ follows: Intertillage and digging 75 dr., pruning 25, harvesting and transport 79.8, expressing oil (26% value) and taxes 39, rent 180, and interest 30, i.e., a total of 428.8 dr. The income items are 15 l. oil, valued at 150 dr., pressage at 10, and wood at 50, making a total of 210 dr. with a resultant deficit of 218.8 dr. Under rarely realized conditions of careful culture (see above Ref.) a profit of some 75 dr. per stremma may be had, when the yield runs to over 32 l.

NOMADIC FLOCK RESULTS: Instead of examining the financial part of livestock on peasant farms it will be best to study nomadic stock raising. This is solely stock raising with supplementary enterprises. Before and during the war, nomadic stock raising was a very profitable enterprise. Later, because of the reduction in pasture areas the rents were so increased as to render stock raising unprofitable.

¹Data and summary from "The Olive," P. Anagnostopoulos, Athens, 1931.

ble. In the pre-war period, winter pasture rentals varied from 3-4 dr. per head of stock, in post-war times it became 100-200 dr. Summer and winter pasture rentals constitute nearly two-thirds of the expenses of the enterprise.

The Government has tried since 1922 to reduce the rentals of pastures and has imposed in different periods a moratorium. Finally, an act was passed April 10, 1931, that legal pasture rental could not exceed the rental of the 1913-14 period. But the great scarcity of pastures often obliged the stockmen to pay to pasture owners higher rents than those stipulated by law. Meanwhile, community pastures and those belonging to the National Bank (formerly renting by auction) have been closed, sold or seized.

← BUDGET: The annual expenses of a nomadic flock of 100 sheep valued at 350,000 dr. is estimated ¹ as follows:

Interest on capital at 10%	35,000 dr.
Losses from weather, disease, etc. (depreciation)	17,500
Wages and maintenance, 8 shepherds and families	80,000
Head shepherd at 2,500 dr. per mo.	30,000
Taxes, state, local, etc.	7,000
Rentals, summer and winter	100,000
Feed, supplementary winter, salt for sum.	30,000
Removals and field damages	20,000
Materials for tents and sheepfolds	10,000
Total expenses	329,500 dr.

The annual income of the flock of 1,000 sheep, 600 milk sheep and 400 barrens approximates:

Sale of 400 muttons	60,000 dr.
Sale of 150 old sheep and barrens	30,000
Wool, 800 okes	24,000
Milk from 600 sheep, 35 okes each at 5 dr.	105,000
Total income	229,000 dr.

In the face of this state of things the nomadic shepherds sacrifice their labor reward, and (as this is not enough) also the depreciation of the capital. Inevitably this means the disintegration of the enterprise. The beginning of the end is the sale of part of the flock in order to meet expenses. And so, the industry declines year after year.

13. OUTLOOK FOR AGRICULTURE AND FARMERS

The financial state of agriculturists in general has been shown by the above examples to be characterized by wrong or poor technique, leaving no net income to the cultivator, but rather a deficit. This

¹ Estimate by Senator Hassiotis, late Dir. of Agr., June, 1930.

deficit is sometimes great and is covered in part out of labor wages, in part out of capital and upkeep. Since most cultivators are also owners, the case would not be so hopeless if two other unfavorable cases did not occur, viz., inadequate arable land supply and inadequate market for most agricultural products.

In the cereal regions the average area cultivated by a peasant and family is low, e.g., 35 str. in Macedonia and Thrace, 67 str. in Thessaly and Sterea. Under the prevailing system of exploitation, low gross and net incomes are reducing the already too low standard of living. In regions where the average farm area is about 67 str., enterprises can be intensified by increasing the emphasis on livestock, but in other districts the solution is more difficult. In the latter, ameliorative measures besides those proposed above according to the region, are: restrict the cereal area and increase other adapted but new cultures, e.g., cotton, flax, hemp, fruit, nuts, etc., according to the region.

In the *tobacco* districts of eastern Macedonia and in Thrace the state of the producer today is yet worse because of the great difficulty of selling their products at ruinously low prices. Current prices do not cover even cultural expenses. The severe measures taken by the Government: (1) by the purchase of old stocks found in the hands of producers, (2) for the destruction of considerable quantities of injured tobacco, and (3) restriction of the tobacco area — all aggravate the seriousness of the case. In spite of these measures, the tobacco market has not felt much relief. The difficulties encountered by Greek export tobaccos arise from the displacement of choice oriental qualities by leaf of lower qualities, to which the prevailing preference of the big tobacco manufacturers has been turned, owing to the financial crisis. Thus, the burning question arises in the tobacco regions: What alternative culture is the substitute? To this there is no available satisfactory answer.

The uniformity found in north Greece is due partly to climatic and soil conditions and partly to the settlement of peasants, local and refugee, to whom were given lots of about equal area. In other parts of Greece much cultural variation is usual. In south Greece the climatic and soil conditions usually vary considerably from region to region, and the old system of free property has created different conditions of exploitation.

In the districts of Morea and some of the Islands where currants are cultivated monoculture predominates. Currant producers, though experiencing a small deficit, are in a tolerable financial condition. But since they have known periods of very high produce prices, the

present strictures provoke great discontent. Therefore, currant growers diversify so as not to depend too much on one product.

In the other districts, producers usually have a leading enterprise, e.g., the olive, fruit trees, sultanina, etc., and diversify with other enterprises. This condition is really satisfactory in theory, as all the disadvantages of monoculture are hereby avoided, but in many of these districts there arises the serious lack of arable lands on which to develop diversification. In Morea but 11 stremmas per peasant-family are available, and less than that on the Islands. It follows that the income of these cultivators is very low and their financial state is desperate. To ameliorate these conditions, sources of secondary income have been attempted, e.g., the development of domestic apiculture, sericulture, poultry raising, and swine husbandry. Intensification of these systems of culture is advisable.

Finally, concerning the nomadic stock raisers, it is impossible to improve their state since their enterprise is not based on ownership of pastures. If and when they have permanent pastures they could make winter shelter for their stock and thus avoid great losses. It is feasible to improve the pastures and to cultivate a part of them for the production of autumn and winter feed. Such a system would establish a feed reservoir when the free pasture gives out or is covered with snow.

PRODUCTION VALUES: The following data are extracted from the official statistics concerning the agricultural income for 1930. Comparable data though doubtless less favorable for 1931 are not available.

<i>Kind of Production</i>	<i>Value in Drachmas</i>
Cereals	2,320,892,834
Dry legumes	147,551,669
Potatoes and other vegetables	255,483,886
Industrial and aromatic plants	1,962,468,693
Forage crops	172,476,720
Vine	1,583,728,217
Olive tree	1,333,700,536
Citrus and other fruits	289,725,677
Working animals (production)	740,000,000
Meat production	1,395,000,000
Milk, butter and cheese	2,500,000,000
Wool	850,000,000
Poultry products	1,200,000,000
Total	14,750,968,592

It appears from these data that the gross value of agricultural incomes in 1930 amounted to but 13,551 million dr., resulting in an average income per agricultural family of about 14,263 dr. (there are approximately 950,000 families).

PEASANT MISERY: As if the current domestic and foreign crises were not enough, other unfavorable factors, including weather conditions, frosts, hail, floods, etc., have decimated crops in late years, with the result of wretchedness past believing among the peasants. As an example of the abject state of peasants is the measures taken by the Government to prevent many deaths from starvation in many villages during the winter 1931-32. Thus the Government has entirely removed the high taxes on maize, barley and cottonseed in order to enable farmers to get these products at lowest prices. To consummate this, a guaranty was made to the Agricultural Bank to provide loans and maize on credit to the agriculturalists who had exhausted the margin of their credit in the Bank and could not obtain further credit in any amount. The total of these grants of the Bank exceeded 100,000,000 dr.

Finally, the Government has decreed a 5-year moratorium on debts of the agriculturalists, the payments thereon to begin in installments not later than five years hence. Such is the present deplorable agricultural condition of Greece.

14. SPECIAL ECONOMIC DEVELOPMENTS

Questions, when answered affirmatively, that will have a profoundly beneficial influence on the evolution and development of Greek agriculture are: the completion of the national network of highways, the extension and improvement of the railway systems, the control of the Axios and Strymon rivers, and the draining of marshes and subsequent irrigation. Improved transport tells its own benefits. The others will increase the available area, will better the quality of the land, will protect it from floods, and will improve the sanitary conditions of the population.

The aim of the works on the Axios and the Strymon is, on one hand, to drain and make fit for cultivation the area covered permanently with water, and on the other hand, to protect areas annually flooded which in consequence are very little cultivated, or which are pastures. Besides, an increase in production will also result from the improvement of drained and potentially irrigated lands.

In the plain of the Axios projected reclamation works affect a total area of 1,765,000 stremmas. Lands wholly inundated amount to 502,500 str.; flooded ones to 801,000 str. Of the total affected, 821,000 str. can be irrigated. The expenditure has been estimated at \$26,432,707; \$19,432,707 for the work of irrigation. Of this area 56,500 str. have already been regulated and 117,000 have been protected. In

the Strymon plain, the works cover an area of 1,559,475 str., of which 576,775 are inundated, while 325,700 are flooded yearly. Of these lands 776,000 stremmas can be irrigated. The estimated expenditure is put at \$21,488,242.

In addition to these great works others no less important to agriculture have been undertaken by the division of Technical Services of the Ministry of Agriculture. A total area of 160,800 str. will be improved by reclamation works, comprising drying up small marshes, drainage, irrigation works, and works against floods. Moreover, they are busy regulating precipitous streams. As such works take place on private properties, provision is made for the formation of compulsory associations. When half the inhabitants of a community or of a village decide for the common interest that such works must be undertaken, they form an association binding all. In this event, the Ministry proceeds to study the situation through the Services Division, and undertakes their execution. The required funds for the purpose are borrowed of the Agricultural Bank.

One must accurately estimate the economic returns of these works. Evaluations arrived at by Greek and foreign specialists for the works of Axios and Strymon plains, show that these works will increase annually the national income by 2,500 million dr. Others have estimated that their income will not exceed 500 million dr. Even if the works could not yield any direct financial benefit, the work on these two plains would be abundantly justified, since now they are devastated by malaria, and are a constant flood hazard, resulting in disease and property loss. But the works will result in both intangible and tangible benefits of great magnitude.

15. AN AGRICULTURAL POLICY

Although agriculture forms the principal source of economic wealth of the country, evident from the foregoing, the State has not devoted merited attention to it. It might safely be said that the agricultural policy of Greece began with the foundation of a special Ministry of Agriculture in 1917.

The measures taken for the progressive development of agriculture have been outlined in other sections of this study. It is too early to determine even in a general way the results of this policy. The influence of the current agricultural crisis on the development of agriculture should not, however, be undervalued. Nevertheless, continuous progress has been made and the results promise ultimate satisfaction.

Encouraging progress appears in that the general knowledge as well as the technical education of farmers is gradually improving. Coincidentally the land, whether worked on a small or on a large scale, improves in productivity and the farm equipment per farm improves both in quality and quantity, so affording a better exploitation of the land. Lastly, the peasant's health improves with the measures taken to fight off the most dangerous epidemic diseases, particularly malaria.

Principally, greatest attention must be concentrated on measures aimed to increase the individual agriculturalist's income by change in and intensification of cultural methods. This can be more confidently anticipated because of systematic progress of professional education of farmers and the enhancement of productivity of the cultivated land.

A serious obstacle, however, in the outlook is the unsettled conditions of international trade created by the worldwide economic crisis. Tariff barriers placed and other trade restrictions make it necessary to curtail the production and export of certain most lucrative cultures, and often exactly those which are naturally favored for cultivation by the climatic and soil conditions of Greece. The situation created, however, on account of such hampering artificial measures must be considered temporary, ready to retreat with the necessity that caused it. The agricultural policy of Greece is formulated and initiated. Unless deprived of necessary means for prosecuting its agricultural program through the intervention of some untoward and unforeseen event, it will shortly be consummated.

APPENDIX

TABLE I. AREA, PRODUCTION, YIELD: WHEAT, RYE, CORN, 1921-30

YEAR	WHEAT			RYE			CORN		
	Stremmas ¹	Crops, ¹ Quintals	Yield, Kilos	Stremmas ¹	Crops, ¹ Quintals	Yield, Kilos	Stremmas ¹	Crops, ¹ Quintals	Yield, Kilos
1921 .	3,840	2,813	73	314	271	86	1,891	1,916	101
1922 .	4,299	2,456	57	356	277	78	1,660	1,432	86
1923 .	4,300	2,390	56	226	158	70	1,542	1,622	105
1924 .	4,666	2,102	45	359	232	65	2,014	1,562	78
1925 .	4,651	3,054	66	435	398	92	2,014	1,728	86
1926 .	5,277	3,376	64	472	407	86	2,326	2,066	89
1927 .	4,089	3,530	71	472	382	81	1,971	1,298	66
1928 .	5,381	3,501	66	553	440	80	1,834	1,289	70
1929 .	5,007	3,112	62	519	342	66	2,089	1,778	87
1930 .	5,795	2,643	47	639	467	73	2,210	1,728	78

TABLE I-A. AREA, PRODUCTION, YIELD: BARLEY, OATS, MASLIN, 1921-30

YEAR	BARLEY			OATS			MASLIN		
	Stremmas ¹	Crops, ¹ Quintals	Yield, Kilos	Stremmas ¹	Crops, ¹ Quintals	Yield, Kilos	Stremmas ¹	Crops, ¹ Quintals	Yield, Kilos
1921 .	1,371	1,285	94	659	535	81	525	380	73
1922 .	1,490	1,288	86	692	681	98	436	265	61
1923 .	1,468	1,173	80	765	582	75	452	316	70
1924 .	1,661	938	56	1,036	447	43	424	167	39
1925 .	1,767	1,513	86	1,012	794	78	411	236	57
1926 .	2,047	1,509	81	1,112	720	65	542	280	52
1927 .	1,884	1,583	84	1,032	675	63	482	271	56
1928 .	2,020	1,578	78	1,121	762	68	482	230	48
1929 .	1,445	1,035	72	1,030	607	59	343	184	54
1930 .	2,162	1,705	79	1,371	955	63	446	197	44

¹ In 1,000's.

TABLE II. AREA PRODUCTION AND YIELD OF COTTON AND TOBACCO, 1921-30

YEAR	TOBACCO			COTTON		
	Cultivated Area	Production	Average Yield	Cultivated Area	Production	Average Yield
	Stremmas	Kilos	Kilos	Stremmas	Quintals	Kilos
1921 . .	294,886	233,536	79	56,561	38,394	68
1922 . .	319,955	257,900	80	74,955	60,548	80
1923 . .	515,638	577,732	93	116,149	80,414	68
1924 . .	815,805	502,972	61	162,699	102,773	63
1925 . .	803,639	608,267	76	154,785	105,582	67
1926 . .	811,915	613,804	75	149,152	128,348	85
1927 . .	923,146	632,165	68	145,811	90,852	62
1928 . .	930,765	587,376	69	154,040	107,506	70
1929 . .	1,012,238	687,382	68	202,362	110,319	54
1930 . .	966,709	658,691	66	203,961	116,717	51

TABLE III. AREA, PRODUCTION AND YIELD OF VINEYARDS, 1921-1930

YEAR	AREA (STREMMAS)		PRODUCTION (QUINTALS)			AVERAGE YIELD (Kc.)		
	Wine vines	Currants and raisins	Wine vines	Currants	Sul-tanina	Wine vines	Currants	Sul-tanina
1921 .	1,463,372	666,183	1,873,022	1,280,233	136,426	140	174	189
1922 .	1,944,104	622,825	1,794,002	2,016,214	181,351	202	295	212
1923 .	1,272,126	636,666	1,777,963	1,508,778	64,615	166	226	214
1924 .	1,235,095	785,021	2,301,963	1,853,545	82,576	212	237	253
1925 .	1,124,218	726,801	2,362,772	1,777,765	77,678	210	234	225
1926 .	1,137,985	641,995	2,692,008	1,742,619	306,373	237	260	197
1927 .	1,030,005	614,819	2,270,120	1,698,818	112,394	293	266	239
1928 .	1,215,871	617,953	3,075,322	1,706,902	64,573	235	258	201
1929 .	1,164,426	500,429	2,546,240	1,392,712	127,663	296	246	208
1930 .	1,335,710	623,216	2,209,489	1,705,591	157,187	180	249	257

TABLE IV. LIVESTOCK NUMBERS, 1921, 1926-1930

CLASSES	1921	1926	1927	1928	1929	1930
Horses . . .	177,495	280,522	276,741	290,306	323,339	316,901
Cows and Bulls	675,497	924,752	908,585	910,203	831,955	837,175
Buffaloes . .	13,625	38,762	38,558	44,680	43,001	43,732
Mules . . .	51,334	147,601	135,299	149,610	147,817	153,870
Donkeys . . .	243,582	318,861	328,152	342,870	380,648	343,271
Sheep . . .	5,789,113	6,950,541	6,441,830	6,920,361	5,805,646	6,799,067
Goats . . .	3,717,034	4,669,489	4,579,199	4,919,118	4,179,214	4,637,386
Swine . . .	404,485	509,636	452,565	418,524	275,687	335,407

TABLE V. BALANCE OF TRADE AND AGRICULTURE IN 1000'S DRACHMAS
1922-1931

YEAR	TOTAL IMPORTS	TOTAL EXPORTS	TOTAL AGRICULTURAL IMPORTS	TOTAL AGRICULTURAL EXPORTS
1922 . .	3,085,475	2,485,080	1,381,187	2,199,538
1923 . .	6,035,340	2,545,110	2,884,719	2,191,201
1924 . .	8,053,783	3,276,972	3,073,000	2,854,407
1925 . .	10,200,523	4,541,360	3,823,981	3,933,906
1926 . .	10,004,939	5,429,751	4,430,233	4,822,091
1927 . .	12,601,948	6,037,411	5,105,099	5,478,730
1928 . .	12,488,122	6,282,075	4,756,791	5,412,275
1929 . .	13,275,531	6,985,196	5,208,478	6,385,541
1930 . .	10,850,608	5,918,406	3,707,191	5,150,347
1931 . .	8,825,657	4,202,429	2,906,480	3,762,078

TABLE VI. LOAN OPERATIONS OF THE NATIONAL BANK OF GREECE

YEAR	LOANS ACCORDED IN GENERAL, DR.	THROUGH THE COÖPERATIVES, DR.	YEAR	LOANS ACCORDED IN GENERAL, DR.	THROUGH THE COÖPERATIVES, DR.
1915 . .	4,685,159	223,000	1923 . .	220,019,362	114,971,172
1916 . .	7,896,439	979,449	1924 . .	678,069,618	259,230,176
1917 . .	8,291,512	1,495,122	1925 . .	942,459,754	543,909,109
1918 . .	20,564,784	7,432,085	1926 . .	997,346,824	465,747,596
1919 . .	27,274,362	13,443,646	1927 . .	1,144,452,127	789,298,731
1920 . .	79,562,381	24,907,751	1928 . .	1,345,476,453	968,196,818
1921 . .	72,265,239	27,493,314	1929 . .	1,641,756,453	1,164,793,926
1922 . .	151,301,123	75,557,637	1930 . .	493,371,312	381,020,422

TABLE VII. TOBACCO EXPENSE AND INCOME ACCOUNT, 1930¹

TOBACCO REGIONS	PRODUCE PER STR. IN DR.	SALE PRICE PER KILO IN DR.	CULTURAL EXP. PER STREMMIA IN DR.	INCOMES PER STREMMIA	
				Gross in dr.	Net in dr.
I. Thrace	70	39	3,500	2,730	- 770
II. Macedonia	75	40	3,800	3,000	- 800
III. Center & West	85	23	2,050	1,955	- 25
IV. Thessalia & Phthiotis	80	17	1,225	1,360	135
V. Etolia-Acarmania	80	27	2,450	2,160	- 290
VI. Attica and Islands	72	21.50	1,285	1,548	263
VII. Morea	100	7.80	750	780	30

¹ Data supplied by Tobacco Production Office.

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MEMORANDA ON WEIGHTS AND MEASURES¹

- Liter — 1.76 pints (liquid).
Liter — 0.96 quart (dry).
Hectoliter — 22 gallons (liquid).
Hectoliter — 2.76 bushels (dry).
Gram — 15.42 grains.
Kilogram — 2.205 pounds (Kilo).
Quintal — 220.46 pounds (= metric system, 100 kg.)
Metric ton — 1016.048 kilograms.

SURFACE MEASURE

- Hectare — 10,000 sq. meters = U. S. 2.47 acres.
Are — 100 sq. meters = U. S. 119.6 sq. yards.
Sq. meter — 10.26 sq. feet.
Sq. kilometer — 0.386 sq. mile.
Acre — 43,560 sq. feet or 40.4629 ares (metric system).
Stremma (Greece) — U. S. 0.247 acre = 10.00 ares (metric system).

¹ Compiled by C. Ladas, Ministry of Agriculture, Athens.

$$dr \text{ (Drachma)} = \frac{1}{2} \text{ Anna (old coin).}$$

200 AGRICULTURAL SYSTEMS OF MIDDLE EUROPE

OTHER MEASURES

Decimeter — 3.937 inches.

Centimeter — .3937 inches.

Kilometer — 1,000 meters = U. S. 0.6213 mile.

Meter — 3.28089 feet.

Barrel bulk — Freight capacity: $\frac{1}{8}$ ton — U. S. 5 cu. feet.

Koilon (Greece) — 26.4 gal.

Oka, oke (Greece) (measure of weight) — 2.82 pounds or 1.28 kg. (metric).

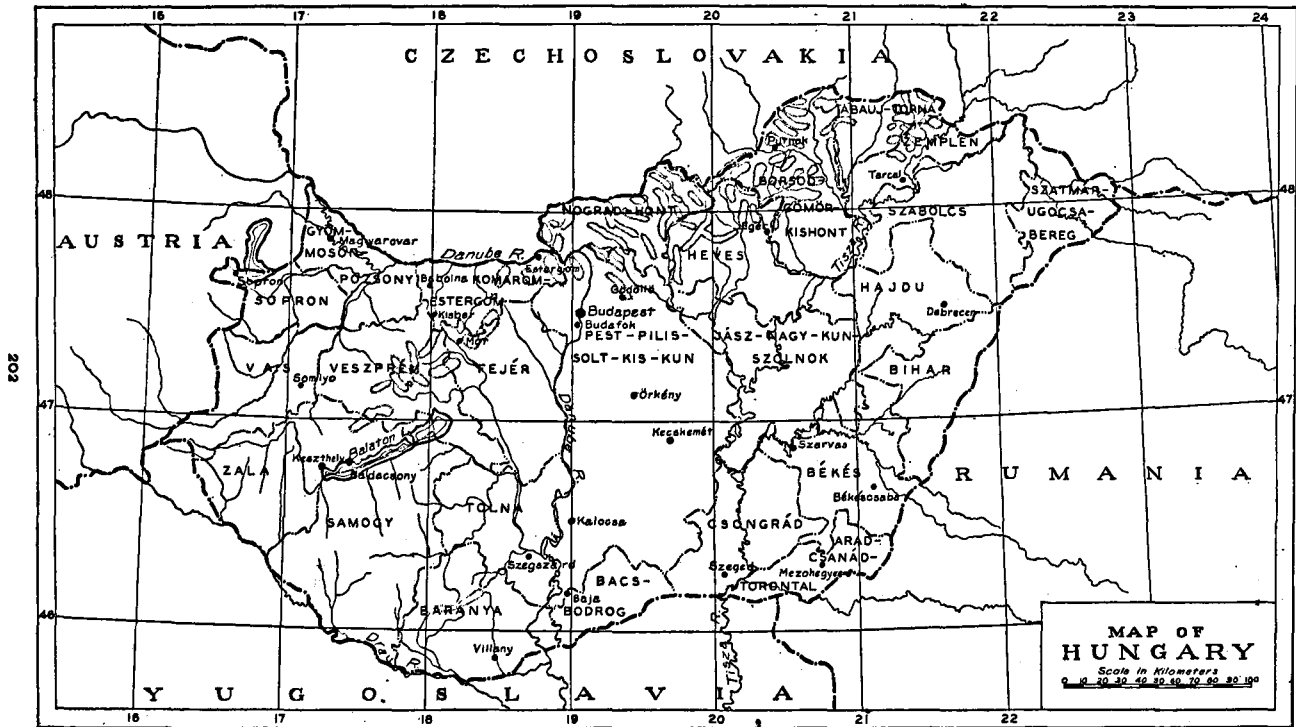
Stater — 88 pounds.

CHAPTER FIVE

AGRICULTURE
AND THE
AGRICULTURAL ECONOMIC POLICY
OF
HUNGARY

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BUDAPEST, HUNGARY, AUGUST, 1932



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AGRICULTURAL ECONOMIC POLICY OF HUNGARY

I. INTRODUCTION ¹

In order to obtain a better understanding of the agriculture and of the economic policy in present Hungary, it is necessary that the reader should have at least a partial knowledge of the status that preceded the present situation. He should first know that pre-war Hungary represented a perfect geographical and economic entity.

A glance at the map of pre-war Hungary suffices to prove this assertion. This country was surrounded by the Carpathian Mountains and covered a territory that belonged to the same water system. It represented a natural geographical unit with which only a few countries could be compared. A group of mountains extremely rich in metal, minerals and lumber, surrounded extensive lowlands that abounded in cereals, fruits, wine and livestock. The marketing of the agricultural products was no problem, as the entire Austro-Hungarian Monarchy offered an ample market for Hungarian agricultural products, and the industrial production of the second half of the Monarchy was always in complete equilibrium with the agricultural production in Hungary. Such circumstances resulted in prosperity which continued to increase until the World War.

As a result of the World War, this classic form of economic unity was pulled into pieces that are absolutely deprived of any economic unity. Economic isolation has become the principal feature in the economic policy of all the newly built states, and such a policy has given very poor results in all these countries. Among the states composed or partly composed from the Monarchy, present Hungary is in the worst situation. Deprived of raw materials, forests, extensive pastures, surrounded by fantastical boundaries, residual Hungary is completely isolated both politically and economically.

This was the situation after Hungary became the victim of the so-called "peace-treaty" of Trianon. Under such auspices Hungary had to enter the worldwide competition for bare existence, after having been mutilated, plundered by foreign armies, reduced to one-

¹ This chapter was translated by Mr. Ladislav Lorincz, Technical Assistant, Office of the Agricultural Attaché, United States Department of Agriculture, Belgrade, Yugoslavia.

fourth of her former territory, and to a third of her former population. The circumstances and struggles outlined in the following pages will be understood and appreciated only if the above facts are taken into consideration.

There is no Hungarian who would not trust that justice will be obtained by Hungary, and that this justice will soon come. This belief, this strong trust, is the lodestar of the thousand-year-old Hungarian nation and this gives it the moral power to fight the struggle for its existence and for the recovery of its rights that have been trampled in the dust.

2. PHYSICAL FACTORS

Hungary can be divided into three principal regions from the view-point of the surface conformation which affects soil and weather conditions. These regions are: the Hungarian Lowlands of south-eastern Hungary, the North-Hungarian Hill Country, and the Transdanubian section of western Hungary.

The Hungarian Lowlands have an average elevation of 100-120 meters above sea level. The lowest section in the Lowlands is represented by a strip situated on both sides of the Tisza River. The soil of the Hungarian Lowlands is more or less uniform, but the principal kinds of soil are located so that each of them constitutes a continuous area. Sand is the predominant soil in the Northeast of the Lowlands, with here and there areas of wind-blown sand. Passing from north to south, sand is replaced gradually by black loam that has a reputation of inexhaustible fertility. This kind of soil covers most of the Hungarian Lowlands. Extensive moorlands (marshy lands) are located on the western and eastern part of the Lowlands. Sand is the usual subsoil and only sporadically do heavy loam subsoils occur. Gravel as a subsoil is seldom encountered. In earlier times before rivers, especially the Tisza and its tributaries, had been regulated, the lowland soils were often subject to overflows and the consequent stagnant water. Since stagnant water has been drained and rivers regulated, 5,000,000 cadastral yokes¹ were made available for agricultural production. The reclamation of overflow lands for agriculture still continues on an extensive scale.

Part of Transdanubia is called the "Little Hungarian Lowlands." This is a section similar to the Hungarian Lowlands as to its elevation; its subsoil is, however, mostly gravel and the soil is mostly limy-loam.

¹ One cadastral yoke is equal to 0.575 hectares (1.421 acres). TRANSLATOR.

A considerable part of these "Little Hungarian Lowlands" is occupied by the marshy section called "Hansag" which is good only for producing a third class grass. The remainder of Transdanubia is hilly and the soil is limy-loam or loess of varying fertility. Such soil is generally suitable for the production of all field crops. There are extensive peat bogs around the Balton Lake in Transdanubia, the exploitation of which, as well as the improvement of the soils after the peat has been removed, is an unsolved problem.

The soil of the Northern Hill Country is mostly sandy, infrequently loam and clay.

Hungary's climate, especially that of the Hungarian Lowlands, is characterized by inclination towards extremes. The average precipitation in the Lowlands is of about 500 to 600 millimeters yearly; it decreases, however, to 300 mm. or increases to 700 mm. for particular sections in certain years. The climate of the Little Hungarian Lowlands and of Transdanubia is relatively more favorable to crop production than is that of the Lowlands. The distribution of rainfall is more uniform and the yearly average precipitation generally exceeds 600 mm. Such meteorological conditions are responsible for the fact that wheat yields in the Lowlands fluctuate from 3 to 16 quintals per cadastral yoke, whereas in the Little Hungarian Lowlands or in Transdanubia neither such high yields are obtained nor do such wide fluctuations occur as in the Lowlands. It is characteristic of the climate of the Hungarian Lowlands that during the past century there were 22 years of excessive drought, whereas only 6 years suffered from excessive moisture.

3. AREA AND POPULATION

Before the Treaty of Trianon, the Hungarian national territory comprised 325,411 square kilometers. Today, the area of Hungary is reduced to 92,975 square kilometers. The population in 1914, before the War, attained 21,239,619 persons; today it is only 8,666,538 persons. As a consequence of the Treaty, Hungary has thus lost 232,436 sq. km., i.e., almost two-thirds of its former territory, and besides, population numbering 12,573,028 persons. The distribution of the present population according to profession is as follows: farmers 56.2%; miners and founders (workers in metallurgy) 1.1%; industrials and craftsmen 18.6%; merchants 5%; those engaged in communication 3.2%; militia 2.4%; civil service and liberal professions 4.6%; domestic servants 4.3%; and various other professions 2.6%.

4. LAND UTILIZATION

Rotation of crops is a general practice in Hungary on the large estates and the medium size farms and is practiced to some extent on the smaller farms.¹ Large estates, combined with dairy farming and agricultural industries are frequent in Transdanubia. As regards the intensity of their exploitation, these estates compare favorably with the most intensively exploited Western European estates. Such estates are characterized by expensive consolidations of strips, drainage, modern buildings, adequate equipment used in the preparation of the soil and in crop production, valuable livestock and recent extension of machinery.

The system of production employed on medium size farms is often as good as that practiced on large estates, the main difference being that fodder crops and industrial plants are not so well developed as on the large estates.²

As to small farms, distinction should be made between conditions found in the different regions. Cereal production (where only cereals are raised and the same cereal is repeated for 2, 3 or 4 years) and especially the improved forms of cereal farming (where a cultivated cereal precedes a non-cultivated cereal, i.e., wheat after corn, etc.) are still the preference of the small farmer in the Lowlands. In many sections, however, of Transdanubia intensive rotation farming is at present the general practice, but improved cereal farming is still most common.

On the whole, it can be accepted that the exploitation of the majority of small holdings is extensive; that of one part of the medium size farms is extensive, whereas the remainder of medium size farms are intensively exploited. More than half of the large estates are semi-intensively, and the rest intensively exploited, the degree of intensity depending upon local conditions.

The area of fallow land in the country has diminished considerably since 1870. It has decreased from 21% in 1870 to 5% in 1931.

¹ In Hungary, farms from 1 to 20 cadastral yokes are called "dwarf farms"; from 20 to 100 cad. y.: "small farms"; from 100 to 1,000 cad. y.: "medium size farms"; and above 1,000 cad. y.: "large estates." TRANSLATOR.

² In 1929, there were in Hungary 12,461 farms of from 50 to 100 yokes, with a total area of 487,874 hectares; 5,501 farms of 100 to 200 yokes, total area 435,733 hectares; 2,026 farms from 200 to 300 y., total area 281,574 ha.; 1,739 farms having 300 to 500 y., total area 383,433 ha.; 1,470 farms of 500 to 1,000 y., total area 587,866 ha.; and 635 large estates of 1,000 to 2,000 y., total area 506,948 ha.; 380 estates of 2,000 to 5,000 y., total 658,193 ha.; 133 of 5,000 to 10,000 y., total 532,806 ha.; 52 of 10,000 to 20,000 y., total 414,110 ha.; 27 of 20,000 to 50,000 y., total 482,895 ha.; and 6 above 50,000 y., total area of 213,695 hectares. Total of all farms above 50 y. 4,985,127 hectares.

Hungarian farmers allow lands to lie fallow only if they cannot cultivate them with profit. The keeping of fallow lands for the purpose of increasing the fertility and the production of arable land is practically non-existent at the present time. Arable lands are the most important component of the agricultural area,¹ not only because they represent the largest portion of the national area, but also because arable lands bring the largest income, even in comparison with meadows and pastures. Agricultural production is very closely related to the treatment given to arable lands. The better arable lands are exploited the greater will be the income of the individual as well as of the community. It is most natural that methods of exploitation and consequently yields and income derived from production vary with the size of the farms. On the whole, Hungarian small farms obtain a yield of cereals that is still about 1 to 1.5 quintals less per cadastral yoke than those obtained on large estates. To eliminate this difference as soon as possible is one of the most important problems of the future.

The production on arable lands before the War and in 1927 was divided as follows:

<i>Crop</i>	<i>Per Cent</i>	
	<i>1913</i>	<i>1927</i>
Cereals	59.50	56.33
Leguminous plants	0.22	0.30
Cultivated plants ²	25.40	28.50
Commercial plants ³	1.40	1.08
Forage crops	12.70	12.74
Other crops	0.77	0.70

From these data it is seen that the area under cereals has tended to decrease, whereas legumes have slightly increased; the total production of cultivated plants has increased by 3%, and forage plants have also slightly increased. The upward trend of forage crops has been too slight. It is desirable that legumes, commercial crops and forage crops should be produced on a larger scale. Future trends in production are definitely toward a reduction in the area under cereals in favor of legumes, commercial plants, industrial plants and forage

¹ The total area of arable land in 1929 was 5,589,314 hectares, gardens 107,200, meadows 669,486, vineyards 215,274, pastures 1,000,882, forests 1,095,094, and cane-breaks 30,459. All these categories are included in the area of farms; thus the total for farms above 50 yokes deducted from the total of the above categories (9,297,486) gives the total area of farms below 50 cad. y. — Hungarian Statistical Yearbook, 1929.

According to an article by M. Matyassovszky in the *Agricultural Review*, August-September, 1930, the proportion of small holdings (up to 100 y.) to the middle and large holdings (above 100 y.) was the following: in 1921 (before the Reform) small holdings 7,510,000 y. (46.5%); middle and large 8,640,000 y. (53.5%); in 1928 (after the Reform), small holdings 8,268,000 y. (51.2%); middle and large 7,881,991 y. (48.8%).

² Corn, root-crops, etc. TRANSLATOR.

³ Tobacco, hemp, hogs, rape for oil, sunflower, etc. TRANSLATOR.

crops. The necessity of increasing the value of exports and readjusting agriculture on a strictly intensive basis necessarily requires the development of these trends.

Production in Hungary had increased constantly from 1870 to the beginning of the War. Wheat production amounted to 16,000,000 quintals around 1870 and increased to 40,000,000 q. around 1890 and attained in some years during the first decade of this century as much as 50,000,000 q. Other crops show similar increases up to the beginning of the War. During the War and the years that immediately followed it, production retrograded. In present Hungary, there has been again a satisfactory progress in the intensification of production during the past five years (1926 to 1931). It has been observed that farmers have made serious efforts towards a better cultivation of the soil, use of improved seeds, utilization of abundant quantities of manure and fertilizers,¹ and requisite care given to fields, i.e., increasing the quantity of their crops in order to make up for decline during the War and for the purpose of being able to compete successfully with Western European countries in the field of progress in agriculture.

Hungary's national area amounted to 92,975 square kilometers according to a revised figure published on the basis of recently completed cadastral measurements (92,975 sq. km. = 9,297,486 ha.). The larger portion of this area, 60.1% or 5,589,314 hectares, is occupied by arable lands; the area of forests represents only 11.8% or 1,095,094, that of pastures 10.8%, meadows cover 7.2%, vineyards 2.3%, and gardens (orchards, vegetable gardens, etc.) 1.2%. Only 6.3%, or 589,777 ha., are not under cultivation, and the largest part of this area is really sterile land, unsuitable for agricultural purposes.

¹ As a result of the bad economic situation, consumption of fertilizers has decreased materially since 1929. The following figures (Economic Report of the Hungarian Economic Research Institute, December 5) illustrate this trend:

QUANTITY OF FERTILIZERS USED IN HUNGARY

<i>Year</i>	<i>Superphosphate (quintals)</i>	<i>(Of which Hungary manufactured)</i>	<i>Basic slag</i>	
1925 . . .	823,200	701,300	11,900	(Data concerning consumption of Potash fertilizers, of Cyanamid, and of saltpeter can be had in the same publication.) Figures for 1931 refer to January 1 to November 15, 1931
1926 . . .	982,916	725,308	25,600	
1927 . . .	1,380,570	1,016,691	43,877	
1928 . . .	1,485,086	1,138,773	94,874	
1929 . . .	1,246,229	1,048,500	72,822	
1930 . . .	688,000	590,991	40,317	
1931 . . .	244,023	217,951	9,864	

TRANSLATOR.

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PRODUCTION: The largest portion of arable land is devoted to the production of cereals, especially bread cereals, i.e., wheat and rye. Barley and oats are also produced on a rather large scale (711,535 ha.). Corn, potatoes and sugar beets are the most important cultivated crops in Hungary. (See Tables I and I-A, Appendix.)

THE VINE: Vineyards form a very important and intensively exploited branch of agricultural activity in Hungary. The total area in grapes amounts to 369,024 ha. The area is divided into 17 wine regions. The best known wine regions are the following: Tokay,¹ Villány,² Egar,³ Badacsony,⁴ Mör,⁴ Neszmély,⁵ and Kecskemet.⁵ The largest part of the wine area is situated in the lowland regions (63.05% or 136,847 ha.), whereas 36.05% or 78,718 ha. are located in hilly and mountainous regions. The 1930 wine crop had an excellent quality and gave a record yield, producing a total of 3,764,936 hl. of must. As a rule, about 65% of the wine produced is white, about 25% claret and 10% red wine.⁶

TREE FRUITS: The extension of fruit growing in Hungary is best shown by the number of fruit trees in the country, which is as follows: apple trees, 2,606,683; pear, 1,480,524; cherries, 1,120,553; mazzard cherries, 1,341,930; peaches, 993,021; apricots, 892,554; prunes, 4,782,064; walnuts, 971,356; almonds, 123,686; mulberry, 1,186,771; and other fruit trees, 261,623; a total of 15,680,765 fruit trees.

LIVESTOCK: Livestock production is not only a very important branch of Hungarian agriculture but it is a complement of it. At the end of 1931 Hungary's herds and flocks were as follows: 1,813,894 horned cattle; 864,571 horses; 2,714,635 pigs; 1,440,409 sheep; 24,027 goats; 4,291 donkeys; and 1,850 mules. The total number of horned cattle are divided into breed-classes as follows: Hungarian cattle, 256,405 head; Siemental cattle, 1,394,592 head; "Borzderes"⁷ cattle, 23,929 head; other cattle breeds,⁸ 132,503 head, totaling 1,807,429 head; Water buffaloes 6,465 head; Horses: warm blood⁹ breeds, 694,755 head; cold blood¹⁰ breeds, 196,816 head; Hogs: lard breeds,¹¹

¹ Known as "Tokay" abroad. The Tokay region is in N. E. Hungary.

² S. W. Hungary. ³ N. Hungary

⁴ In Transdanubia, near Budapest.

⁵ Hungarian Lowlands, not far from Budapest. Trl.

⁶ The data concerning wine production during the past five years, compared with the wine production in Greater Hungary for 1914, are as follows: 1914, 3,227,016 hl.; 1926, 1,293,433 hl.; 1927, 1,826,409 hl.; 1928, 3,082,839 hl.; 1929, 2,489,602 hl.; and 1930, 3,764,936 hl.

⁷ A Swiss breed called Schwytz. Trl.

⁸ Algau, Pinzgau, Kuhlant, Murztahl, Holland and others. Trl.

⁹ Principally Anglo-Arab, Anglo-Normand (Nonius, Gidran, etc., strains) and the light Hungarian type. All of these are luxury or light draft horses. Trl.

¹⁰ Horses of the middle-heavy and heavy types, adapted for work. Trl.

¹¹ Practically all of which are of the so-called "Mongolica" breed. Trl.

2,311,735 head; meat breeds¹ 402,900 head; Sheep: 1,440,409² head; Goats: 24,007 head; 4,291 donkeys, and 1,109 mules.³

FORESTS: Forests in present-day Hungary represent a much smaller proportion of the national property than they did before the War. The total area covered by forests now amounts to 1,172,765 ha., or 11.8% of the total national area; whereas it occupied about 27.0% of pre-war Hungary. Forests are located as follows: On sites and soils that can be used only for forestry, 833,137 ha. (62.5%); on soils that could be used for other purposes, 323,269 ha. (27.6%); on planting sites used for stabilizing blown sand, 104,437 ha. (8.9%); and on areas that are wooded parts of the national defense, 19,822 ha. (1.0%). The following categories of trees are grown in these forests: 561,135 ha. (47.8%) are beech and other deciduous species except oaks; 549,957 ha. (46.9%), oaks; and 61,673 ha. (5.3%), pine (Conifers).

5. BRIEF HISTORY OF PRE-WAR AND POST-WAR CONDITIONS

In order to give an objective picture of the present agricultural situation in Hungary, it is necessary to make a comparison of the principal characteristics of pre-war and post-war agriculture. This comparison may contribute to explaining changes and shifts in agriculture that occur from time to time. The agricultural area of pre-war and post-war Hungary was divided among the various branches of agriculture as follows: (Data in 1,000's cad. y.)

REGION	ARABLE LANDS	OR-CHARDS	MEADOWS	VINE-YARDS	PASTURES	FORESTS	CANE BRAKES	INFERTILE	TOTAL
Pre-war	22,304	662	4,550	546	5,755	12,642	88	2,515	49,062
Post-war	9,726	173	1,159	380	1,750	1,911	49	1,005	16,163
Per cent	43.61	26.13	25.47	69.59	30.58	15.12	55.68	39.96	32.94
Lost area	12,578	489	3,391	166	3,995	10,731	39	1,510	32,899
Per cent	56.39	73.87	74.53	30.41	69.42	84.88	44.32	60.04	67.06

A comparison of the population and the total arable land in pre-war and post-war Hungary shows that the arable land per capita and especially per capita area of vineyards was not reduced after the War to the extent that the per capita area of orchards, pastures,

¹ Most of which are Yorkshire or Berkshire, or cross-breeds of these types with Mongolica. Trl.

² Various breeds, principally the so-called "Hungarian Racka," and also Merinos (Hungarian and Rambouillet).

³ Pre-War Hungary had (1911) 6,184,264 horned cattle, 2,001,431 horses, 6,416,424 hogs, 7,697,719 sheep, 331,313 goats, 20,103 donkeys and 1,850 mules.

meadows and especially forests was reduced. Only 15.15% of the total forest area in pre-war Hungary was left in present Hungary.

A comparison of the production of the most important crops in pre-war Hungary with the production of these crops in post-war Hungary, shows that the area of cereals and cultivated plants decreased in comparison with the 1911-1915 average, but the area has shown a tendency to increase during the past few years. (For details, see Appendix, Table II.) The decrease was particularly accentuated in 1919 and 1920, whereas wheat and rye acreage increased materially in 1923 and 1924. The increase was particularly important in the case of corn, which was greatly in excess of the average corn area. The area under green fodder crops also increased. Average yields of all crops have been smaller in post-war than they were in pre-war Hungary. This is especially true for 1919 and 1920, and it is due to the fact that intensive exploitation fell back seriously as a result of confiscations of agricultural machines and of livestock by the armies during the War, as well as in consequence of the ensuing shortage of stable manure and fertilizers.

Later, the agriculture of the country began to return to its pre-war level as a result of efficient efforts. It is certain, however, that pre-war yields could have been attained, and even surpassed, had sufficient cash and credit facilities been available. If sufficient credit facilities had been available, an important exportable surplus could have been obtained in addition to completely satisfying home requirements, by means of adequate soil-improvement, plentiful use of fertilizers, more agricultural machines and improved seeds, even if meteorological conditions were not very favorable.

BREAD GRAINS: As regards wheat production, it should be remarked that the excellent wheat-producing regions along the Tisza River (Tisza wheat) and on the right shore of the Danube (Fejer county, etc.) have remained in the possession of Hungary, though very important wheat areas were segregated from present Hungary.

The volume of rye produced in Hungary has always been much less important than that of wheat. The most important rye areas (Pest and Szabolcs counties) remained in Hungary's possession. On close examination of the bread-cereal¹ consumption, it is found that the per capita consumption is 174 kg. a year (wheat and rye together), and this means a total home consumption of about 14 million quintals, the Hungarian population being about 8,000,000 persons. If we accept for post-war Hungary the average areas of 1911 to 1915 as a basis for calculation, and assume a very modest, practically minimum yield of

¹ I.e. wheat, rye and maslin. Trl.

7 q.¹ of wheat and 6.5 q.¹ of rye, the Hungarian bread-cereal balance is as follows:

Average wheat production . . .	2,600,000 × 7	= 18,200,000 quintals
Average rye production . . .	1,200,000 × 6.5	= 7,800,000 quintals
Total		= 26,000,000 quintals of bread cereals
Seed requirements (1 quintal per cadastral yoke)		= 3,800,000 quintals
Home consumption		= 14,000,000 quintals
Total domestic requirement		17,800,000 quintals

There remains an exportable surplus of 8,200,000 quintals.

FOOD AND EXPORT PROGRAMS: The program of the Hungarian Government includes the improvement of soil situated in the flood area of the two principal rivers, Danube and Tisza. Thus far these soils have been considered unsuitable for agricultural purposes. By adequate investments in drainage, etc., it is now proposed to render these soils arable and productive. Important areas could then be placed under agricultural production. It should further be noted that the per capita bread-cereal consumption of 174 kg. is not an absolute figure; it may therefore be modified by larger potato-consumption among the poorer classes and by increased meat consumption among the upper classes. Such modifications would then result in an increase of the exportable bread-cereal surplus. In conclusion, it thus appears that Hungary has under normal conditions a very considerable surplus in bread-cereals.

Barley production, though the largest part of the barley regions was segregated from Hungary, covers the needs of home consumption and gives an important surplus that is exported principally in the form of malt. There is a constant surplus in corn, that is being domestically used principally to feed livestock. The accepted corn-pork-lard ratio is 100 kg. of corn: 17 to 19 of pork-lard.

Corn was exported in very large quantities from pre-war Hungary, but a relatively large quantity (more than 318,000 q.) was exported even in 1930 in spite of the reduced national area.

As regards potatoes, about 4,000,000 to 5,000,000 q. are used as seed, 1,000,000 to 1,500,000 q. for industrial purposes, 9,000,000 q. for human consumption, and 2,000,000 to 3,500,000 q. in livestock feeding. This means that there is an exportable surplus in normal years. (See Table I-A, Appendix.)

ANIMAL HUSBANDRY: A yearly average number of about 8,500 bulls, 5,500 boars and 340 rams were distributed by the Hungarian Government during the last few years that preceded the War for breeding purposes along the lines and privileges laid down by Law.

¹ Per cadastral yoke. Trl.

In addition to this, a few thousand bulls, cows, hogs, and sheep were imported from abroad every year. In order to improve poultry breeding, important numbers of registered poultry were imported. To effect the enforcement of legal provisions, 5,000,000 crowns were made available from the State budget. This amount is in addition to the 14,000,000 cr. allowed for distributing breeding animals for the use of farmers.

WAR EFFECTS: As an after-effect of the War and Revolutions, livestock-breeding, that was once so prosperous, declined materially and suffered extensive damages, not declining much in numbers but rather in quality and average weight. Statistics concerning markets of breeding stock and slaughterings show that the average weight of cattle decreased from 415 kg., pre-war, to 300 kg., post-war. This is due to the fact that cattle consumption during the War greatly exceeded the normal consumption figure, and therefore animals were slaughtered that under normal conditions would have been used for the improvement of breeding stock. Shortage in fodder during 1917 and 1918 contributed to an appreciable decline in the condition of livestock after the revolutions and foreign occupation period. The effects of this decline will undoubtedly be felt for several years to come.

In the sense of the Peace Treaty, Hungary was deprived of 68.4% of its stocks of cattle, 55.6% of its hogs, 60.3% of the horses and 74.2% of its sheep, as the districts in which the above-mentioned livestock had been raised were annexed by other nations. It is very regrettable that just those regions have been dismembered which were the best for livestock breeding, where extensive mountain, forest, and alpine pastures producing abundant pasturage made possible intensive livestock enterprises and the production of an important surplus of animal products.

In present Hungary only about 3% of the total area of pastures can be used profitably. The rest of the pasture lands, except those on the right bank of the Danube, have a sandy, alkaline soil. Under such conditions, unless a superior product is raised, Hungary cannot compete with the mass production of the surrounding countries.

Another reason which has contributed to the degeneration of Hungarian livestock in the post-war period has been the discontinuance of regular livestock imports from western European countries. The Siemental breed, which forms the bulk of the Hungarian cattle stock, sorely needs to be regenerated by the importation of original pure-bred cattle. Such imports have been, however, hindered by restrictions in the exportation of Hungarian currency and various other circumstances.

HORSES: Horse breeding, that was formerly the glory of Hungarian agriculture and an important factor of the trade balance, suffered severely as a consequence of the War. The greatest damages were caused by the post-war invasions of foreign armies, when the breeding stocks owned by the Government were carried off, and the best breeding animals of the Mezohegyes Stud¹ were seized.

The four stud farms owned by the Government in 1913 maintained a total of 62 stallions and 1,944 mares. The Hungarian Government still owns four stud farms, as a new farm has been established at Sutveny, on land leased by the Government² from Prince Eszterhazy (2,700 cad. y.). Pure-bred and half-bred English horses (Furioso) are being developed on this new farm.

Foreign countries are still much interested in horses originating from Hungarian Stud farms. Japan has recently shown great interest in this connection. Twenty years ago, Japan imported Anglo-Arabian horses bred in Hungary and has recently desired to regenerate its horse stock by further imports from Hungary. Bulgaria and Russia show continued interest in the importation of Hungarian pure-bred stock. Turkey also recently bought excellent Nonius³ horses, but not from the Government. The Government is at present not inclined to sell, and Turkey made its purchases from private breeders in the Mezohegyes region. There are hopes that horse breeding in Hungary will, in a few years, attain its pre-war level, and that exports of breeding and utility horses will again favorably influence Hungary's trade balance.

FORESTRY: The total area of Hungarian forests, before the conclusion of the peace treaty, was equal to 26.2% of the National territory. The peace treaty has left for present Hungary only 2,042,463 cad. y. of forests.⁴ The specification of the pre- and post-war forest area is as follows:

KIND	PRE-WAR	POST-WAR
Oak forests	3,382,866 Cad. Y.	1,098,180 Cad. Y.
Beech and other deciduous forests	6,375,558 " "	860,924 " "
Conifers	3,099,033 " "	83,359 " "
Total	12,857,457 Cad. Yokes	2,042,463 Cad. Yokes

¹ The most famous Government stud situated in S. E. Hungary, in the Lowlands, not far from Szeged. Trl.

² One of the former Hungarian studs, that of Fagaras, is now owned by the Rumanian Government. It is situated in S. Transylvania, in the Carpathian Mountains, and now called Fagaras. Trl.

³ Nonius, as well as Furioso, North Star, etc., are the names of some English stallions that originated from famous English pure- and half-bred strains at Mezohegyes. They were imported from England during the second half of the 19th century. Trl.

⁴ Latest data supplied by the Cent. Stat. Bu., Budapest, places the total forest area at 1,911,386 cad. y.

These data show that only 32.5% of the oak forests owned by pre-war Hungary, 13.5% of the beech and other deciduous forests, and only 2.7% of coniferous forests of pre-war Hungary have been left in present Hungary. In order to improve this precarious forest situation, adequate laws have been enacted which are intended to promote the culture of the existing forests and the partial replacement of the lost forest areas through the development of forests on additional areas.¹

Act XXI of 1923 settled questions connected with credits in forestry and enabled proprietors of forests to obtain important credits secured by their forests without having to strain their private capital resources. Act XX of 1923 encouraged forestation by making available the incomes from the "National Forest Fund." This Fund serves for the acquisition of forests that are suitable for rounding² out State Forests. The Forest Administration Act (1923) establishes methods of efficient supervision and regulations of forestry, especially the supervision of those privately owned.

RIVER AND WATER REGULATION: Regulation of rivers is subject to technical supervision under the direction of the River Regulation Division of the Ministry of Agriculture. The technical control of other waters is placed in the hands of the Civil Engineering Service, which is also in charge of soil improvement and protection against waters. There are 8 River Regulation Bureaus now, likewise 8 Civil Engineering Offices.³ A total of 323,802,151 crowns was expended for river regulation 1867-1919 (1 crown = \$0.2026). These offices aid farmers in carrying out soil-improvement operations, e.g., field drainage, irrigation, surface water drainage, stream-regulation, etc. One of the large but intangible services of these offices is to encourage farmers in methods of soil conservation.

WINE PRODUCTION: There were 551,054 cad. y. planted with grapes in pre-war Hungary (average acreage in 1911-15). The average annual quantity of wine produced in 1911-15 amounted to 2,919,787 hl. The vine and grape situation of present Hungary is given on next page. The average wine production is 1,708,257 hectoliters.

¹ The Government distributed gratuitously the following number of young trees for the forestation of uncultivated areas: 1923, no data; 1924: 3,771,000 for 614 ha.; 1925: 2,327,000 for 321 ha.; 1926: 3,961,000 for 462 ha.; 1927: 3,391,000 for 429 ha.; succeeding years, no data. In addition to these distributions, the Government undertook forestation on its own account, that averaged about 710 ha. per year from 1921 to 1925, and about as much in following years. (From Statistical Yearbooks.) Trl.

² That is, private forests that are wedged in between State Forests, or private forests neighboring a State forest which could render the boundaries of the latter more regular. Trl.

³ In pre-war Hungary there were 17 Bureaus and 19 Offices.

YEAR	AREA VINES IN CAD. YOKES	PRODUCTION WINE IN HECTOLITERS	PRODUCTION PER CAD. YOKE
1920	330,934	2,205,228	6.66
1923	384,601	4,176,225	10.86
1924	385,467	1,213,348	3.19
1930	369,024	3,764,936	10.20

The geological conformation of historical Hungary set natural limits to the wine producing regions, hence wine production occupied the center of the hill-country or plain-regions adjoining the Carpathian Mountains. Hungary today owns about three-quarters of the vineyards of pre-war Hungary. Pre-war Hungary was bounded on the east by the Carpathian Mountains, and progressing westward from them livestock-breeding found suitable conditions, while production of intensive crops was concentrated in the center of the country. Post-war conditions cut off Hungary's natural wine-markets in the mountainous regions of the Carpathian Mountains, where wine was not produced because of unfavorable climatic conditions. The production from the pre-war vines (551,000 cad. y.) was intended for a population of 19 million persons, or if the entire Austro-Hungarian customs unit is considered, for a population of 53 million people, whereas at present there are only 8 million people to use the production from an area of 380,000 cad. y. Excellent wines are still produced, referred to above. A large number of varieties of grapes were grown prior to the appearance of *Phylloxera*.

Special consideration should be given to the fact that wine production is one of the most intensive branches of agricultural production, and employs many laborers as well as technicians. Wine production, therefore, has a special importance, not only from the viewpoint of intensity of agriculture and larger revenues for the State, but also from a social view-point.

DRUG PLANTS: Hungarian drug plants were known in foreign markets before the War. Exports were greatly curtailed after the War on account of the economic crisis, and the segregation from the country of areas suitable for drug plant production. The Government endeavors to promote exports of drug plants and to popularize proper harvesting methods. Drug plants, before export, must be examined as to quality and purity by the official Drug Plant Control Station and be officially sealed and labeled by it. Each inspected and passed parcel is numbered by the Station, and foreign customers may obtain at any time information regarding the official results.

PAPRIKA: The Government is particularly anxious to ensure that only unadulterated, clean paprika is exported. To this end, paprika produced and ground in Hungary is subject to official inspection. No package of paprika can leave the country until it has been officially certified. Besides, each package bears a tag on which appears the standard class, the official stamp and signature of the director of the station. There are two Government paprika culture stations, the one located in Kalocsa being well-known.

SILK: Production of silk in Hungary was introduced and fostered by the Government. The Silk Inspection Bureau of the Szegszard district distributes without charge eggs of the silk-worm moth as well as the perforated paper needed in the feeding of the worms. The food for worms is also gratis, as producers are permitted by law to gather the leaves of mulberry trees planted along state highways. The cocoons are purchased and graded by a Government Inspection Bureau, then resold to companies that rent the State (thread) spinning mills. The Government is a shareholder in these companies.

A satisfactory development can be noticed in post-war Hungarian silk production. Thus, the large production of cocoons in 1923 was in excess of that of the pre-war production in the same parts of present Hungary.¹

6. LAND REFORM

The Land Reform Legislation (Act XXXIV, 1920) while primarily a social reform, tended also to effect a better distribution of landed property. It strove not to violate the principles of rational economics, nor to disturb normal production. It emphasizes the fact that expropriation is to the interest of the public because it improves the situation of classes of population that previously had no land property.

REFORM COURT: A Land Reform Court was established to carry out the provisions of the Act. Its powers were very extensive. The Act established certain categories of landed properties,² that were to be paid for by new proprietors in different ways. The Court determined which properties were to be classed as medium-size, small and dwarf-farms. It determined also, in the case of each individual farm, whether expropriation against redemption should be made or not, and what particular field or part of a particular field should be expropriated against redemption, for what purposes and to whom it

¹ Cocoon production was 400,701 kg. in 1923 (Hung. Stat. Yearbook, 1923-1926, p. 98), 1929 yield was 524,013 kg. cocoons.

² Landed property acquired during the War, large estates, medium-size farms, and real estate suitable for house sites.

should be given. It nominally allotted the expropriated fields and specified the area as well as the terms in each case.

The Act compelled proprietors, in certain cases, to lease particular areas to small farmers, and to lease a large farm that was previously rented by one tenant to several small farmers. It also decided questions connected with the Government's right of priority in the purchase of landed estates, provided for supervision by Government officials over private allotments, and established the legal institution of the "homestead" and of rent-lots. Act XXXVI, of 1920, was later completed by Act VII and Act XLI. Statistics published during the last quarter of 1928 show the following results of the Reform up to that time: 704,634 cad. y. of small holdings, 104,770 cad. y. of forced small tenants, 14,690 cad. y. of small holdings acquired on the basis of priority and allotted among small farmers, besides 61,334 cad. y. of small holdings allotted by private agencies under Government control, making a total of about 1,000,000 cad. y.

The total area of small farms was increased by 970,000 cad. y. between 1913 and 1925.¹ This increase represents 13.6% of the total area of present Hungary owned by small farmers before the War. Now the total area owned by small farmers represents 50.2% of the national area, as compared with 44.2% pre-war; corresponding figures on arable lands are 61.6% vs. 55.5% and at present 61.6% of the total is included in small farms.

At present, the area occupied by large estates amounts to only 33.4% of the national area, as compared with 37.9% pre-war; and of arable lands only 24.3% now vs. pre-war 29.2%. The total area of estates that cannot be sold by their usufructuaries² are now but 22.8% of the national area, instead of 24.4% pre-war; and of arable lands only 11.3% now vs. pre-war 12.8%. The correlative data relating to estates in fee entailed³ are: 6.1 vs. 6.8%, and 4.1 vs. 4.9%. Thus the total area and total arable lands owned by small farmers are now more, while the total area and total arable lands of large estates, of estates that cannot be sold by their usufructuaries, and of estates that are in fee entailed are now less than was the pre-war situation in present Hungary.

EFFECTS: The Land Reform has exercised and will continue to exercise a powerful influence upon many classes of population, both

¹ According to J. Konkoly-Thege, Director of the Cent. Stat. Office, Budapest.

² Includes the estates of churches, estates in fee entailed, etc. Such estates can normally not be sold; they are inherited. The sale of such estates, or of part of them, is subject to authorization by a special permanent Court. Trl.

³ Including a group of estates donated by Sovereigns to faithful aristocrats, in historical times. Trl.

producers and consumers. Such an important social shift cannot be imagined, and it did not occur here, without an avalanche of dissatisfaction, and real or imaginary grievances and injustices. The readjustment of the relative proportion of the various farm categories either strengthens or weakens entire classes of population, and also affects the productive capacity and social equilibrium of the country. It cannot be summed up. It is entirely too complicated to find the exact principles and leading ideas that would give even a superficial insight into the work that has been accomplished, and especially the long-time influence of the reform.

CAPITAL LEVY: The Capital Levy Act (Act XLV, 1921) came into effect after the Land Reform Act had begun to operate. This Act includes a stipulation in accordance with which the capital levy shall be paid with the land itself. This stipulation greatly facilitated the execution of the Land Reform Act. In accordance with the Act, persons to whom said act applies shall pay as capital levy (in gold crowns converted to wheat) a certain part of the net income per cad. y., or shall pay with a portion of their land. If the levy is paid in land, a certain percentage of the total acreage of the estates shall be segregated from the estate. This percentage shall be in direct proportion to the total acreage. The payment of the capital levy in kind, i.e., in land, is obligatory for estates in which the total area exceeds 100 cad. y. The capital levy for estates from 1,000 to 2,000 cad. y. is of 15%, for estates from 2,000 to 10,000 cad. y. 17%, estates from 10,000 to 50,000 cad. y. 19%, and above 50,000 cad. y. 20%.

7. FARM MACHINERY

The use of modern machines is general in Hungary and their manufacture is one of the principal branches of industry. The value of exported agricultural machines during recent years has ranged from 5 to about 13 million pengó, whereas the imports have generally been far less.¹

TRACTORS: The use of tractors is increasing steadily. The United States occupies a leading place in supplying tractor imports. In 1930, the imports from the United States were 126 tractors weighing more than 50 quintals each, 1,659 tractors weighing from 20 to 50 q., 756 tractors weighing 15-20 q., and 1,094 steam engines or tractors weighing less than 15 q. The total import for the year amounted to

¹ The exports were (1926) 5.1 mil. pengó, (1927) 7, (1928) 11.9, (1929) 12.8 and (1930) 6; while the respective annual imports in million pengó were 2.2, 3.2, 4.6, 2.5 and 16.

5,696 tractors. The progress made in the utilization of tractors is reflected in the yearly decrease in the total number of draft-animals.

COMBINES: In 1929, there were 22,603 threshing machines in use in Hungary, of which, 8,830 were driven by steam-engines and 9,255 by other motors. Steam plows are frequent on large estates. American harvesters and combines are seldom used; grain is generally harvested with a sickle.¹

8. AGRICULTURAL COÖPERATION

Coöperative legislation is everywhere an important factor in coöperation. It is a subdivision of Commercial Law (Act XXXV, 1875). Herein coöperatives are considered a special form of commercial companies. Successive enactments have not modified those early established provisions except in the case of certain types of coöperatives. Act XXIII (1898), pertaining to agricultural and industrial coöperatives, and Act XXX (1920), modified the above act, but these modifications refer only to such agricultural and industrial coöperatives as are members of the O.K.H. i.e., Central Union of Credit Coöperatives. The only agricultural coöperatives that are members of the O.K.H. are the credit and farm labor coöperatives, and the enabling Acts do not permit the creation of credit coöperatives that are not members of the O.K.H. Act XI (1923) provides for Government aid to labor coöperatives.² The legal status of craftsmen coöperatives has been regulated by Act XVIII (1924) along the same lines as that of credit. Finally, Act XXVI (1923) establishes the general assemblies of representatives which are called in the case of large coöperatives that have more than a thousand members.

¹ Harvesters and combines cannot be widely distributed on account of special social conditions. The local small farmer often makes an important part of his living by harvesting on the nearest large estate. In addition to this, the poor peasant population of the northern sections, mostly lime and charcoal burners, or lumber-jacks, depend largely for their year's earnings on harvesting on middle-size and large farms, in the Hungarian lowland. The introduction of harvesters and combines would cut off this source of income and would probably result in profound social disturbances. The poor Rumanian in Transylvania (now part of Rumania) and Slovaks and Ruthenians in Slovakia and Ruthenia (now parts of Czechoslovakia) have been, for centuries, in the habit of descending at harvest time to the Hungarian Plains to earn the wheat, lard and few other basic foodstuffs they needed for their modest subsistence during the rest of the year. The new situation created by the Trianon Peace Treaty prevents these peasants (who have become nationals of foreign countries) from continuing their yearly practices, and this is a serious reason for dissatisfaction among them. Trl.

² It is the general custom in Hungary that farm laborers assemble into a crew under the leadership of the most intelligent laborer among them. Such crews are then designated by the leader's name, and one frequently reads in advertisements of Government placement offices announcements as follows: "X. Y. with 14 men, 10 wives wants jobs: potatoes—hoeing," etc. Beginning with February, 1932, County authorities have been required to supervise the contracts made by such workmen with their leader in order to prevent exploitation of the workmen. Trl.

CENTRALIZATION: The characteristic feature of Hungarian co-operation is a distinctly pronounced centralization. Each class of coöperatives has a central organization which includes practically all of the coöperatives within the class. Central coöperatives act in a supervisory capacity over the individual coöperatives that form their membership. In recent legislation there is a marked tendency to make centralization obligatory. Credit coöperatives have already been legally compelled to become members of the Union of Credit Coöperatives. Craftsmen, fruit marketers, alcohol producers, and labor coöperatives are practically all members of their respective unions. The Government assists the coöperatives and has a certain amount of supervision over their activities through being represented on most coöperatives' board of directors. Financial aid given by the Government in recent years has been largely in the form of purchasing a part of the coöperatives' shares.

FOUNDATION RELATION: A particular characteristic of coöperatives is the so-called "foundation memberships," and the "foundation-shares." The use of these shares makes it possible for persons who do not need the services of a coöperative to contribute to its capital stock and to have the right of voting on matters that are placed before the shareholders. "Foundation-shares" or "foundation memberships" are, as a rule, larger than normal shares or memberships, and have priority in the payment of dividends. Persons who have "foundation memberships" in credit coöperatives cannot obtain credit from them.

Another important characteristic that has been, and is generally true, is that the coöperative system in any field usually develops from a central organization. This has been true because there is seldom sufficient initiative on the part of local groups, and it is necessary that the Government organize the coöperative. This can be most easily done through a central organization. Therefore, the central union is usually the first organized and the network of local coöperatives is built under the supervision of the Union.

CENTRAL UNIONS: The Central Union of Credit Coöperatives forms the core of the coöperative movement. This organization is not only the center of credit coöperatives, but is also the nucleus for coöperatives of labor, land renters and home industries. Act XXX, while requiring the development of coöperation, makes the primary function of agricultural coöperatives that of granting small credits to individual farmers. In 1928 there were 1,028 locals, with a membership of 321,841, all members of the Central Union. Next to the Central Union in significance is the Union of Coöperatives. Members of

the Union are also members of the Farmers' Union, a consumption coöperative. The Farmers' Union is the most important central organization, having an honorable past in the evolution of the movement. In 1927, the Union of Coöperatives had a total of 1,752 local coöperatives with 781,771 members, making one of the largest organizations of its type in the world.

The Central Union of Industrial Coöperatives is primarily an organization for coöperatives engaged in purchasing raw material, machines, etc., but it also represents the central for coöperatives engaged in marketing industrial products. The dairy units of the country are centralized under the Central Union of Dairy Coöperatives. It has 100 member-coöperatives. The only commodity-coöperatives are the Fruit and Alcohol Marketing Coöperatives which at present include only 130 units, centralized in the "Fructus." This group has a special marketing organization, called Central Fruit Alcohol Trading Company. Another central is the Mutual Livestock Insurance Coöperative Company.

MISCELLANEOUS: In addition, there are other large coöperatives that cover the entire national territory, and whose local organizations are not recognized legal entities. Such have a strong central organization and are represented by agencies, branch-offices, or local individuals in the country. Besides these, there is the "Farmers' Insurance Coöperative" which extends its activities to practically all branches of the insurance business, the "Farmers' Coöperative," which is actively engaged in purchasing and marketing, and the "Coöperative Unions' Trading Company," which is an overhead organization through which all coöperatives can market their products. There are between 100 and 200 small organizations gathered into central unions, most of which have their official center at Budapest.¹

The Union of Hungarian Coöperatives is the central office for all Coöperatives. It represents the interests of coöperatives, is in charge of propaganda, supplies, literature, maintains a high-class coöperative press, prepares statistics, and advises with the Government on pertinent matters. The most important coöperative periodicals are: "Hungarian Coöperation," "Hungarian Farmers' Review," "Hangya," "Industrial News," and "Coöperative Informers."

¹ There are also joint land tenancy coöperative groups. Each member farms his rented land independently, but the leaders of the coöperative exercise a general supervision over the methods used by each member. The purpose of these coöperatives is to enable groups of small farmers to rent an extensive farm and to farm the same systematically. In 1930, there were 60 joint tenancy coöperative groups which were members of 54 coöperatives, in which 6,867 farmers participated and farmed a total area of 38,066 cad. y. (From "Koztelek," a weekly publication of the Hungarian Farmers' Association, January 24, 1932). Trl.

9. MARKETS AND MARKETING

Hungary, as well as other agricultural surplus countries, is largely dependent upon prices made in the world markets. The country is only a part of the intricate mechanism of world trade. It is largely dependent on export, and is therefore exposed to the variabilities of competition, supply and demand, and the various shifts in the economic policies of individual countries, all of which affect the interchange of commodities between nations. Therefore, the market situation for Hungarian agricultural products cannot be considered apart. All changes on Hungarian markets, e.g., price fluctuations and the influencing factors, i.e., marketing possibilities for agricultural products, condition and outlook for marketing, are only phases of the constant changes on world markets caused by the interaction of economic factors.

The most serious factor in the market situation during 1931 was the decline in prices for bread-cereals to the point where they reached the record low level of the 1890-1900 decade. As a result of this price situation, both exporting and importing countries undertook measures to remedy the cereal crisis and made their remedies their principal endeavors.

A DISASTROUS YEAR: The year 1930 brought no relief in marketing possibilities for agricultural products. On the contrary, the situation of agricultural markets was perhaps never so unfavorable. This bad situation was further aggravated by unfavorable weather during the months that preceded the wheat harvest, which resulted in a low production of high grade wheat. Exports of livestock and derived products increased materially during this year, but prices were lower than for the preceding year, therefore the increase in the quantity exported did not balance the disastrous developments in the wheat market. By the middle of the fiscal year livestock could not be marketed except at a heavy loss. The conditions affecting the marketing of potatoes improved somewhat. However, the improvement for this commodity was insignificant as compared with the sharp decline in prices for other commodities, as the improvement was limited to good quality potatoes for export during the second half of the export year, and price increases were not sufficient to offset the poor crop. Wine markets were unstable and producers were threatened with utter ruin; the market for dairy products became critical; wool prices declined; the former favorable market condition for linseed, flax and hemp fiber disappeared; the sugar beet industry was

confronted with a crisis; and prices for other agricultural products declined.

INDEX NUMBERS: Index numbers published by the Hungarian Institute for Economics Research show the degree to which the purchasing power of farmers was decreased as a result of adverse marketing conditions. The index which indicates the purchasing power that results from the marketing of agricultural products on a 1925-1927 base showed: 103.5 in January 1928, 90.2 in January 1929, 82.4 in December 1929, 68.6 in June 1930, and only 66.5 in December 1930. Thus the purchasing power of farmers has decreased 35.7% since 1928.

CEREAL READJUSTMENTS: A natural result of the sharp decrease in cereal prices has raised the question of readjustment in agricultural production, i.e., the partial replacement of cereals by other crops in order to do away with over-production of cereals. An examination of the prices of the various groups of agricultural products over a long period of years shows that the widest fluctuations and the most far-reaching price collapses occurred in connection with cereals. Cereals are the most popular of all agricultural products because they are well-suited to long shipments and are among the most important articles in world commerce. The production of cereals can be easily and rapidly extended. The unplowed plains of overseas countries can be sown to cereals more easily than to any other purpose. Mechanical methods find suitable conditions in cereal production, and the possibilities of production are practically unlimited. These conditions result in keen competition and a repetition of world-wide cereal crisis.

DIFFICULTIES: Agriculture cannot readjust its principal lines of production from one day to another in sympathy with price fluctuations. There are many examples where such readjustments have been brought about by changes in the marketing situation, but these changes have required decades or at least a long term of years. The modification of the principal lines of production is also limited by natural and climatic conditions. Therefore, even when it does seem advisable to readjust agriculture on the basis of hypothetical plans, the actual attempt to carry out such plans very often meets insurmountable difficulties.

OUTLOOK: Before the general principles of a policy that is to be established for a long period of years on the basis of market conditions can be determined, it is necessary to know the future marketing possibilities and the factors that will influence market prices, or to assume that they will be more stable than at present. There is, at present, little hope of future conditions being stable, as Europe is

still in an economic ferment. The decade following the War has not brought about crystallization of an economic system based on sane principles that would form the nucleus of prosperity and harmonize mutual interests of economically interdependent areas. Such a system is essential before a production program in an individual surplus country, for a long period of years, can be established.

10. AGRICULTURAL CREDIT AND TAXATION

Before the War, the total debt on landed estates, secured by mortgage in pre-war Hungary was 2,861,000,000 gold crowns. Considering that Hungarian farmers were practically freed from this debt after the War, as a result of the depreciation in the Austro-Hungarian currency, and that annuities on unpaid loans were reduced to insignificant amounts, it appears that the debts of Hungarian farmers were reduced to public taxes. Therefore, they were in a position to contract new loans. But their needs could not entirely be satisfied because funds were insufficient for either long-term credits secured by debenture bonds, or for short-term operating credits. Before entering into a discussion of the factors that are responsible for this situation it is advisable to know the present mortgage debt on Hungarian farms. On June 30, 1928, the total mortgages on landed property was 972,335,097 pengo, on December 31, 1928, it had increased to 1,128,687,055 pengo.

MORTGAGE DEBT: This indicated mortgage debt of over one billion pengo is not identical with the total amount of unpaid loans granted to landowners secured by mortgages, because a part of it represents debts that were not true mortgage debts, or were mortgage debts that were partly paid. The data grouped all categories of debts recorded in the Land Register, which included under mortgage debts various items, such as unpaid balances on the original cost of the farms, claims from heritage, tax arrears, costs of legal suits, life insurance payments secured by mortgages, etc. None of these items represents actual loans to farmers; furthermore, banks often allow a limit to landowners up to which they may borrow and this maximum limit was registered in the Land Register, but in many cases the actual loan obtained by the farmers was under this limit. The estimate was further exaggerated by the fact that a part of the loans had been paid but the full amount remained as unpaid on this Land Register; this was especially true in the case of debts that were being paid in installments.

The significance of this debt cannot be sensed except it be compared with the value of the landed property by which it is secured. The total area of agricultural land (16,215,104 cad. y.) has an estimated value of 11,252,473,280 pengo. Therefore, the debt of 1,128,000,000 pengo represents 10.03% of the value of landed property.

The 10.03% of the total value of the land which is represented by the debt is the average. A large part of privately owned land is free from debt, and in addition, most of the 22.74% of the total land area represents family entails, and lands held by churches, communities, municipalities and the state, and is free of all debts. Therefore, the 1,128,000,000 p. debt rests on a limited number of farms, and the percentage of indebtedness on land that is actually mortgaged is well above 10%. The above cited 22.74% of the total land has a value of 2,558,812,433 p. Subtracting this from 11,252,000,000 p., the total value of all lands, a remainder of 8,693,660,857 p. is obtained, thus putting 12.98% debt on indebted lands.

NUMBER OF MORTGAGED FARMS: Hungarian farms in general are not overburdened with debts and they offer good security for further loans. This is supported by the fact that the number of recorded mortgaged loans, secured only by land, total but 131,381. The recorded loans secured by both land and other collateral total 72,554. Thus there are only 203,935 Hungarian farms that are mortgaged. The total number of landowners is 850,760 and the number of mortgages is 23.9% of this total.

INTEREST RATES: A comparison between the pre-war percentage of land under mortgage, and the present indebtedness in present Hungary shows a lower present rate. The pre-war average of all land under mortgage debt was 18.60, and in addition there was a higher percentage of debt-free land under state and municipal ownership. However, pre-war mortgage loans were made at a much more favorable rate than they are at present. Before the War, the annuity payments, including interest on a mortgage loan that matured in 35 years, was 5.5 to 6% of the amount of the loan, whereas the present rates on such loans are around 10 to 11%, provided an allowance is made for the depreciation of currency. The present indebtedness is therefore double its nominal value, because it now requires about 112,800,000 pengo for the yearly payment on a debt of 1,128,000,000 p., whereas before the War, the yearly payment on a debt of about 2,000,000,000 p. could have been made with this amount. In other words, the average mortgage capital debt for a cadastral yoke is at present much smaller than before the War, but the interest burden is almost as heavy as it was before the War. The above discussion

shows the fallacy of the general belief that the present indebtedness of landed property is unduly large.

AVAILABLE CREDIT: Can the Hungarian farmers obtain at present sufficient long-and-short-credits? When the Hungarian National Bank was founded, farmers expected it to supply them with these needed credits. It was hoped that it would liquidate long-term loans secured by mortgage debenture bonds, as the Austro-Hungarian Bank had done. This hope was not realized, because the directors of the National Bank did not consider it necessary to assist in financing farmers. The Austro-Hungarian Bank granted such loans because this kind of credit business had not been sufficiently developed. But even prior to 1900, private Hungarian banks had developed their facilities for issuing such loans to the point of being able to meet the demands for loans of this nature on easier terms than did the Austro-Hungarian Bank. Therefore this line of credit extension dwindled with the Austro-Hungarian Bank, and the Hungarian National Bank when organized did not consider it necessary to concern itself with such loans. The private banks had the market for mortgage debenture bonds both abroad and within the country, which enabled them to liquidate almost any quantity of loans secured by mortgage debenture bonds. This powerful credit institution still exists and there was and is no need for the Hungarian National Bank to engage in liquidating such bonds.

THE CHIEF PROBLEM: The chief problem today, of making available long-term loans for farmer credit requirements, is that of opening new markets for mortgage debenture bonds. The market outlook for such bonds depends almost entirely on the situation on foreign stock exchanges, because Hungarian capitalists are not inclined to invest their capitals in such bonds, remembering their losses on such bonds which resulted from the post-war depreciation in the Austro-Hungarian crown. Foreign capitalists buy only mortgage bonds that are made in terms of the currency of their respective countries, and the volume of sale of such bonds depends on the quantity that the market will absorb.

TAXATION: The national budget of 1928-29 specified that 39,000,000 p. were to be collected during the year in the form of land taxes. All land that can be used for agricultural purposes is subject to the land tax, even though it is not in use when the tax is levied. The following classes of lands are permanently exempted from taxes: public roads, lots on which houses have been built; canal dikes, cemeteries, nurseries maintained for educational or other public purposes, non-profit-making lots that serve the purposes of scientific

or humanitarian associations, artificial fishponds, and tracks and station sites of public railroads. Abandoned agricultural areas are temporarily tax-exempt. If such lands are again made usable for agriculture, the exemption continues for fifteen years thereafter. Areas recently forested, and vineyards and forests that are part of the national defense system are also tax-exempt under certain conditions.

LAND TAX: The land tax represents a personal debt of the landowner and must be paid by "the actual possessor of the land." The possessor is the owner, if he farms the land himself, but is the tenant in case the land is leased to him. The assessible basis for any item of land tax is the income per cad. y. that was recorded for the land when it was registered in the Land Register. This income, called "cadastral income," is not identical with the actual income, which on the average is about 2.5 times as high. The rate of the land tax is 25% of the cadastral income and is at present about 10% of the actual income.

There have been some fundamental changes in the land tax that need to be noted from the viewpoint of history of taxation. When the tax was first begun, the rate was 25.5% of the cadastral income. In 1913 it was decreased at 20%. This rate was continued after the War but the cadastral income that serves as a basis for land tax was multiplied by 10 (Act XXIII, 1920) in order to adjust the income so it would conform to changes in the value of the currency.¹ Act XXI (1922) required the payment of the land tax in "wheat-value," i.e., it provided that each gold crown of the land tax be replaced by the value in cash at any particular time, of 5 kg. wheat. The total post-war "cadastral income" was 142,000,000 gold crowns. This amount was converted to the cash value at the time of the tax-payment, of 1,775,000 quintals of wheat.²

This meant a nominal increase of 3,000% of the land tax from 1921-22 to 1922-23. Act IV (1924) changes the "wheat value" taxation system to a system based on the gold value, and reestablished the former rate of 25% of the cadastral income. The conversion rate of gold crown to paper crown was equal in 1924 to 14,500 paper crowns for one gold crown, but a conversion rate of only 17,000 paper crowns to one gold crown was prescribed by tax authorities. To compensate this difference in the conversion rate, the key of the land tax has provisionally been increased to 29.25%. Hungary abandoned the crown currency in 1926 and adopted the present pengó currency.

¹ The average value, 1920, of 1 gold crown was 57.90 paper crowns. Trl.

² Computed on basis of 1 cr. = 5 kg. wheat. Trl.

In consequence, the land tax was set at 25% of the cadastral income, payable in pengo.

The expiration of the exemption of land tax for a property, or a change in the production enterprise, or of the possessor, shall be declared to the Land Register authority within 30 days. In addition to land, road, communal, and Chamber of Agriculture taxes, a contribution tax may be levied. The land tax is fixed by community officials for each taxpayer apart, and is recorded in the Register for Land Tax Assessment. The register is public and taxpayers must inspect it to find the amount of land tax they are required to pay. No tax bills are issued. The land tax may be cancelled if the property to which it pertains has suffered extraordinary damages on account of natural misfortunes.

INSURANCE: Hail insurance and livestock insurance are the most important branches of agricultural insurance. The total amount of hail insurance in force (1929) was 261,064,000 p. Of this amount 129,000,000 p. was on wheat; 103,000,000 p. on other small cereals; 9,000,000 p. on corn; 4,400,000 p. on tobacco, and 3,100,000 p. on vineyards. The above were coverage on 55,901 policies. The total amount of insurance of livestock (1929) was 13,800,000 p.

The official Agricultural Workmen Insurance Organization reports (1930) 682,100 land laborers insured under the Farm Laborer's Compulsory Insurance Act. This organization paid 302,507 p. in connection with accidents, 304,021 p. on accidents that resulted in invalidity of the person injured and 50,478 p. on deaths. There were 10,598 accidents on record, 2,718 cases of invalidity and 282 deaths. The reserve fund of the Organization amounted to 4,708,906 p.

II. AGRICULTURAL IMPORT: EXPORT TARIFFS

Hungary being essentially an agricultural country, the protection of her agriculture is an important problem. When Austria and Hungary were a common customs territory, protective tariffs that applied to the entire territory enabled the favorable marketing of Hungarian agricultural products in the deficient industrial regions of the Monarchy, and made it possible for agriculture to develop very satisfactorily during the ten-year period preceding the War, in spite of the pronounced European agricultural crisis resulting from transatlantic competition. Now Hungarian agriculture no longer enjoys the advantages of the previous situation, but is forced to market her surplus products on world markets, and therefore, prices are regulated by the fluctuations of those markets.

A CUSTOMS POLICY: The interests of farmers in connection with customs policy are defended by the Hungarian Central Organization for agricultural customs policy. This organization was founded during the period preceding the War by the Central Hungarian Agricultural Union, as a section of the Union, but Chambers of Agriculture, provincial agricultural associations, agricultural coöperatives, associations of the various branches of agricultural production and of agricultural industry are also represented in the Union. An agricultural customs policy should not only include the protection of agricultural products by means of protective tariffs; it should also attentively follow the effect of customs taxes laid on the auxiliaries of agricultural production, and insist upon negotiations for commercial treaties that will make for the protection and progress of agricultural production. Agricultural products must successfully compete with other similar products, in order to exploit market opportunities and thereby make possible a reduction in the costs of production.

PURPOSE: The present purpose of the agricultural customs policy is to grant an equitable and proportionate customs protection to all branches of national production and activity. It is not enough for agriculture that certain agricultural products be protected by customs taxes. It is necessary that excessive import customs duties shall not be levied on industrial products that are needed in agricultural production or that are largely used by farmers and thus unfavorably influence the position of farmers. A well-established customs policy that is adapted to the economic structure and to conditions in the country is a decisive factor in the future economic development of the country. Where there are basic conditions for sound industrial progress, the agricultural class is ready to make the sacrifices that result from the protection of industries by customs duties. But farmers have always protested against excessive protectionism that, under certain circumstances, imperil the successful competition, and therefore profitableness, of Hungarian products with agricultural products of other countries, especially if industrial protectionism renders the means of agricultural production more expensive. The current agricultural customs policy is not hostile to industry, but on the contrary desires the extension of industry in order to secure a ready market for farm products. On the other hand prosperity in agriculture is the surest means to promote economic progress, industrialization of the country and regeneration in general of the economic power of the nation. Considerations of this kind have always been the lodestar of the agricultural customs policy.

TARIFF SCHEDULES: The Hungarian Customs Tariff established customs taxes to be paid in gold value. The customs taxes have been established on the basis of a very detailed technical classification, which includes 37 classes and 974 items. Many of the items are divided into further subdivisions. The description of the commodity as well as the unit of measure is shown with the name of each class as well as the unit of measure. This is the basis for making the customs tax applicable to the established unit of measure. This is the general procedure, but in exceptional cases the customs duty is determined on the basis of the value of the merchandise. Such *ad valorem* customs taxes are usual in the case of merchandise, the complex composition of which renders its exact description difficult, e.g., when the commodity is composed of a great number of parts, is of small volume of a relatively high value, or is composed of identical components having different commercial values in their various stages of finishing (textiles).

The unit of measure for specific customs taxes is adjusted to the nature of the merchandise. Special customs taxes stipulated in commercial agreements with foreign countries, "contractual duties," become valid after the commercial agreement has been legally published. If imported goods belong to a category, subject to some kind of tax, e.g., return-tax or an indirect tax, this tax shall be paid in addition to the customs tax. The importer shall pay the return tax or indirect taxes. The customs Act provides for the possibility of provisionally increasing or reducing customs taxes by means of decrees. It determines the cases in which such modifications are permitted, as well as their limits.

RECIPROCAL TARIFFS: When the Austro-Hungarian Monarchy passed, the Austro-Hungarian "contractual" customs tariff automatically also passed, and the "contractual" customs tariff laid down in Act XII (1908) was replaced by the autonomous Hungarian customs tariff incorporated in Act XLIII (1907). This charge was only a formal one, as the tariff rates were the same. This customs tariff became ineffective when the Hungarian currency began to fall, which made it necessary to so adjust it as to offer satisfactory protection to home products. The provisional methods of adjustment were determined in Act XXII (1920), which stipulated that the amount of the gold agio (exchange premium) shall be fixed by means of a decree. This method of adjustment by means of a gold agio was considered provisional. The individual taxes included in the contractual tariff with Austria, if adjusted by the same factor, were not satisfactory to post-war Hungary, deprived of the largest part of her raw materials

and industrial sources of supply as well as of many sure markets. In order to protect the changed economic interests of post-war Hungary a new customs tariff has been enacted and incorporated in Act XXI (1924). This new tariff became valid, January 1, 1925.

NEW TARIFF ACT: The aims of the new tariff were to protect already existing branches of Hungarian agriculture and industry against foreign competition, and to develop home industries that have chances of success. Another consideration was to increase revenue from customs taxes. Therefore customs rates have been increased even on such merchandise as do not compete with similar Hungarian products, whereas in some other cases both considerations of protectionism and of higher customs income have been combined and have resulted in material increases in the customs rates. Finally, high customs taxes were inaugurated so that negotiations for new commercial treaties could be backed by high customs duties which have been reduced as an effect of said commercial treaties.

COMPENSATORY TRADE: A new autonomous Hungarian customs policy could not be developed in the immediate post-war period on account of the policy of exclusion practiced by newly created countries around Hungary, variability of the Hungarian currency, and especially as a result of certain provisions in the Trianon Peace Treaty. Articles 200 to 203 and 205 of said treaty reserved the principle of the "most favored nation" only for the Allies until June 24, 1924. An independent customs policy was therefore made impossible until 1925. As a consequence, Hungary established a prohibition on all imports and made special arrangements with only a few countries, to secure the supply of her indispensable needs in imported goods. Thus an agreement was made in 1920 with Austria, by virtue of which Hungary allowed the import of limited quantities of mining equipment and implements, paper for rotary press printing, salt, etc., against Hungarian exports of livestock, cement, wool, hides, skins, etc. The import of coal from Germany has been permitted against Hungarian exports similar to those acceptable to Austria. Import and export permits were handled in 1921 in accordance with Act XLIV (1907), on the basis of the principle "do ut des."¹ This system of compensatory trade exchange began to undergo a change in 1922 and became the basis of a system of import and export quotas.

QUOTAS: The customs tariff that became valid in 1925 was already a suitable basis for the conclusion of systematic commercial treaties. The first treaties were still influenced by the idea of compensation. The supply of indispensable needs had to be compensated

¹"I shall do as you do." Trl.

in these treaties by the granting of the most favored nations clause by Hungary, e.g., in the case of the Hungarian-Polish commercial treaty. In other cases, Hungary had to grant customs privileges in order to obtain the most favored nation clause. It was but slowly that normal types of commercial agreements could be adopted, and even then they often included special stipulations, e.g., the establishment of quotas to which a reduced customs rate applied.

12. AGRICULTURAL EDUCATION

The first specialized agricultural institution was founded in Hungary in 1797 by Count George Festetich at Keszthely.¹ This was the "Georgikon." The Agricultural Academy of Magyaróvár² was founded about the same time. The basis for veterinarian education was laid by Emperor Joseph II who ordered in 1782 the establishment of an extraordinary chair for "animal medication" on the medical faculty of the Budapest University. This chair progressed until in 1899 it became an independent "Veterinarian College," of university class, which in 1906 obtained the privilege to graduate doctors. The Principal Forestry School was founded in 1808 to give special training in forestry. This was combined later with the Principal Mining School which was founded in 1763. This is called at present "Mining and Engineering College" and is located at Sopron.

PRESENT INSTITUTIONS: At present agricultural, veterination and silvicultural education is under the jurisdiction of the Minister of Agriculture. The highest education in these branches is given in the following institutions: 1. *Academies of Agriculture* (located at Debrecen, Keszthely, and Magyaróvár). The curriculum is of three years.³ The first year is devoted principally to practice. The practice is done on the excellent model farms of the academies, of from 400 to 600 cad. y., and consists of inspections, demonstrations, practical exercises, discussions (orders given by the students), and of day-service. Graduates of the academies of agriculture anticipate careers as farm managers, independent tenants, or landowners.

2. The *Principal Veterinarian School* has been reorganized by the Regulations (1916). The staff of professors elects a rector every two years. The full and extraordinary professorships are awarded by the

¹ Keszthely is in Transdanubia at the western extremity of the lake Balton. The Agricultural Academy still exists at Keszthely.

² Magyaróvár is in n. w. Transdanubia, not far from Vienna. The Academy still exists and has an excellent reputation especially in Hungary and the Balkan States.

³ Only persons having successfully finished their secondary studies are accepted, i.e., they have completed 4 years of primary education and 8 of secondary when they enter. Trl.

head of the State, other members of the staff are appointed by the Minister, lecturers are appointed by the staff of professors and their capacity is recognized by the Minister. The staff of the School, 1928-1929, was 12 full professors, 3 extraordinary professors, 3 assistant professors, 11 professor's assistants, 9 probationers, 8 special lecturers, and 12 lecturers. The average yearly attendance during the past few years was 280 to 300 students. In accordance with the regulations, the course of study includes 8 semesters at the School and 1 semester practice, which has to be obtained at a public slaughter house and on a State Domain. The curriculum in general is similar to that physicians pursue. The first four semesters are devoted to the basic notions of natural sciences and of medical knowledge, the remainder are used for specialties combined with practical exercises. The granting of the degree of doctor veterinarian is dependent upon passing the courses, oral examinations and writing an acceptable thesis, based on independent investigations. In addition to a major branch (based on thesis), two minor optional branches must be included in the examination. The degree of veterinary doctor was conferred on 283 persons between 1906 and the spring of 1929.

Only those having a diploma from the School, or naturalized citizens who have foreign diplomas recognized as equivalent to the diploma of the School are allowed professionally to engage in veterinary practice. Other persons are only allowed to give first aid in urgent cases, whereas the proprietor of an animal or his employee may freely cure or operate on his own animals. Veterinarians who are entitled to treat animals can not be limited in their actions aimed at improving the health of animals in their charge. They are, however, subject to control by the Government and are not only morally but also materially responsible for mistakes committed in their operations.

MINING AND FORESTRY: 3. The *Mining and Forestry Engineering College* of Sapron is divided into four sections, i.e., (1) mining, (2) iron foundry, (3) metal foundry, and (4) forestry. The College is subject to the common control of the Ministers of Finance and Agriculture. The Minister of Finance has control over educational, personal and credit questions of the first three sections, the Minister of Agriculture controls similar questions of forestry. The rector is the head of the College and each section has a dean. The courses of study are for four years. Students as a result of successful examinations are awarded engineering degrees in mining, iron foundry, metal foundry, and forestry.

VITICULTURE: 4. The *Superior Viticultural and Oenological Course* was organized (1892) at Budapest. Its purpose is to give scientific

training to wine producers and vine dressers. This course lasts 12 months and only the following persons are eligible: students graduated in economics at a university, graduates of an Academy of Agriculture, or of the Principal Forestry School, or finally, graduates with the mention "excellent" of a horticultural college. Graduates of the course are eligible to positions in the Government Viticultural and Ornological services or may be appointed as managers of large private vineyards and cellars.

SECONDARY SCHOOLS: Secondary agricultural educational is under the jurisdiction of the Ministry of Agriculture. Secondary agricultural education is distributed among the following institutions: (1) Secondary Agricultural School at Szarvas. Pupils of general secondary schools (lyceums or gymnasiums) who have finished the first four classes (approximate age 14 years) are admitted as students. They receive after four years of instruction at the school a diploma which is equivalent to the matriculation examination of universities. This school has a farm of 500 cad. y. for demonstration purposes. It is very well equipped with material for education and demonstration. (2) Superior Agricultural School for Girls at Putnok. The duration of the courses is 3 years. Only girls having successfully finished four years of secondary education are admitted. The students at this school receive a specialized training in housekeeping and in minor branches of agriculture connected with the household, such as gardening, beekeeping, poultry keeping, etc. (3) Women Agricultural Teachers' Normal School at Kecskemet has a 2-year course. Graduates from this school are employed as specialized teachers in various lines of work of the Ministry of Agriculture and at institutions of agricultural education subject to supervision by the Minister of Public Instruction.

(4) Forestry School of Esztergom has a 4-year course, and gives theoretical and (principally) practical training to young men who want to be employed on medium-size wooded properties where they will be required to attend to all sylvicultural activities, or who desire to be employed on large properties as assistants to sylvicultural engineers. Students must have finished four classes of secondary education to enter this school. (5) Other agricultural secondary schools are: Horticultural School at Budapest; Gardeners' School at Baja; Vineyarding and Dressing Schools at Eger, Kecskemet, Sopron and Tarcal; Vine Dressers' Special School at Budafok; and the Poultry Farming School at Gödöllő. The Special Vine Dressing school of Budafok accepts only such students as have already successfully finished a vineyarding and dressing school.

ELEMENTARY: Elementary agricultural education is principally obtained at Farmers' Schools and Winter Schools of Agriculture. There are 11 farmers' schools with 2-year courses. These schools possess demonstration farms of an average area of 200 cad. y., and give the training required for subordinate employees on estates or that required by small farmers. There are 8 winter schools of agriculture with 2-year courses which also have their own farms. Other schools of elementary agricultural education are: The Dairy School at Csermajor, the Farm School of the Knightly Order at Örkény, the Dairy Workmen Training School at Kisber, the Forest Keepers and Game Keepers School at Szeged and Esztergom, the permanent two-year course for beekeepers located at the Government Bee Farm at Gödöllő.

EXTENSION: The most important branch of occasional (extension) agricultural education is the institution of agricultural winter courses that are organized with the coöperation of county agricultural agents. These are courses of 184 hours and are bound neither to place nor to time. Itinerant housekeeping courses are held by agricultural women instructors, who travel in six groups equipped with the necessary material for demonstration, and hold 6-week courses. Periodical courses in vineyarding of an entirely practical nature are held in communities where most of the population are viticulturists, and periodical practical courses in bee-farming are held at the Government Bee Farm.

RADIO: An important means of agricultural extension education is the radio, through the medium of which not only talks dealing with practical agriculture are broadcasted at regular intervals, but which is also used for the purpose of distributing regular agricultural and meteorological information. It has recently been made a practice to broadcast seasonal advice to farmers concerning the work on farms.

SUPERVISION: Agricultural education at universities is under the jurisdiction of the Minister of Public Instruction. An agricultural college was founded at the University of Budapest in 1920 as part of the Faculty of Economics. Its course is of four years. It is now a first-class agricultural college. Students graduate with diploma after four years' attendance, provided they have successfully undergone a series of examinations during the years of studies and at the end of their curriculum. Those who desire to receive the title of doctor must prepare a thesis, and complete their residence examinations. The College owns a purely experimental farm of 200 cad. y. at Söreg and for educational purposes rents a model farm of 1,800 cad. y.

Secondary agricultural education, supervised by the Minister of

Public Instruction, is represented by five agricultural high schools that are open to students who have successfully finished the first four classes of a gymnasium or other secondary school. There is a 4-year course of study which, completed, entitles students to a "certificate of maturity." These high schools have their own demonstration farms of from 22 to 56 cad. y.

Elementary Agricultural Schools, controlled by the Minister of Public Instruction, operate on the basis of Act XXXVIII (1868) and are part of the compulsory elementary education. There are two types of such schools: (a) independent agricultural finishing schools, of which there are at present 52. They are located in communities where there are at least 120 children obliged to attend the finishing-school. These schools have demonstration farms of from 5 to 80 cad. y. (b) The general finishing schools are predominantly agricultural in character, of which there are at present 1,350. They are located in communities where there are at least 40 children obliged to attend a finishing school. They have demonstration lots of from about 0.3 to 2 cad. y.

There are 17 special scientific and experimental institutions, 15 of which are distinctly agricultural, under the control of the Minister of Agriculture.¹

13. THE FARMER IN POLITICS

The so-called "Small Farmer Program" represented by the Small Farmers' Party became the common platform of the Hungarian farm laborer and small farmer society in the post-war period following the collapse of the Revolution. This program embraced the vital interests of the bulk of the agricultural population, and at the same time the general interests of agriculture.

¹ 1. The Royal Hungarian Geological Institute at Budapest; 2. The Royal Meteorological and Terrestrial Magnetism Institute at Budapest; 3. The Royal Hungarian Agricultural Museum (the greatest museum of its kind in the world). 4. The Royal Hungarian Experimental Chemistry Station at Debrecen, Keszthely and Magyaróvár; 5. The Royal Hungarian Station for the Examination of Seeds at Budapest, Debrecen, and Keszthely; 6. The Royal Hungarian Station for Experimental Mechanics at Magyaróvár; 7. The Royal Hungarian Experimental Station for the Production of Plants at Magyaróvár; 8. The Royal Hungarian Experimental Station for Tobacco-Growing at Debrecen (with branch at Békéscsaba); 9. The Royal Hungarian Experimental Station for Animal Biology and Fodder at Budapest; 10. The Royal Hungarian Experimental Station for investigations connected with the production of milk, at Magyaróvár; 11. The National Hungarian Wool Testing Institute at Budapest; 12. The Royal Hungarian Entomological Station at Budapest; 13. The Royal Hungarian Station for Phytology and Vegetable Pathology, at Magyaróvár; 14. The Royal Hungarian Bacteriological Institute, at Budapest; 15. The Royal Hungarian Spirit-Testing Station; 16. The Central Royal Hungarian Station of Viticulture and Ampelological Institute at Budapest; and 17. The Central Royal Hungarian Station for Experimental Forestry.

The present influence of farmers in politics is even greater than it was before the War, because agriculture is practically the only actual going-concern of residual Hungary. Industry and commerce can prosper only when based upon a prosperous agriculture. The lines to be followed in politics pertaining to agriculture are determined by the division of landed property, which now stands at about two-thirds of the area of arable lands in the hands of the small farmers, each of whom owns less than 100 cad. y. It is therefore the most important of all national interests to promote the wealth, both material and cultural, of this largest class of population. Increased productivity can also best be attained by increasing efficiency in the work furnished by this class and helping its members fully to develop their latent energies and abilities for the benefit of the community.

The present situation in Hungary demands an agricultural policy thoroughly imbued with a liberal spirit. The thing most urgently needed for Hungary's resurrection from her ashes is a thoughtful and energetic handling of this policy. The Small Farmers' Party has been represented in the Government since 1919, and has an important contingent in the Chamber of Deputies, playing an outstanding rôle on account of this position.

14. THE FARMER'S INCOME

The Hungarian Farmers' Association published in 1930 an analysis of the income on farms, entitled "Mezőgazdaságunk válsága számokban" ("The Crisis of Our Agriculture in Figures"), which is based on detailed bookkeeping results. The following information has been taken from this publication as of the year 1927.

FARM RECORD RESULTS: The yields in quintals per ha. of chief crops were as follows: wheat 14.80, rye 11.59, barley 14.94, oats 14.63, potatoes 100.35, sugar beets 233, and fodder beets 257.01. The per cent of used land under the control of this selected group of farmers was as follows: arable 70.51, orchards 0.61, vineyards 1.46, meadows 6.06, pastures 8.11, forests 9.39, cane-breaks 0.17, and land exempted from taxes 3.69. The above data refer only to lands that are permanently under cultivation. The term "land under cultivation" includes arable lands, orchards, vineyards, meadows and pastures, and that part of forests designated by the Central Statistical Bureau as belonging to agricultural exploitations. The per cent of arable land of farms in crop classes follow: all cereals except corn 50.34, intertilled crops 25.70, commercial plants 4.28, crude fodder 18.02, and fallow land 1.66. The livestock distribution on these

farms was: 1 mature cow, ox or horse per 1.67 ha., 1 pr. oxen per 10.15 ha., and 40.14 domestic animals per 100 ha. arable land.

The average of the group for each hectare and its division among the various items of the inventory was as follows: Lands 1,741 pengo, buildings 271 p., i.e., 83% of invested capital; equipment 75 p., livestock 162 p., revolving capital 176 p., equaling for working capital 17% of invested capital.

The income per ha. of the large and medium estates of the group according to the principal income sources was as follows: arable land 109.82 p. (47.34% of capital), orchards 1.32 p. (0.57%)¹ meadows and pastures 0.63 p. (0.27%), horses 2.6 p. (1.12%), cattle 25.97 p. (11.18%), dairy 25.11 p. (11.81%), hogs 31.63 p. (13.63%), sheep 9.02 p. (3.89%), miscellaneous 26.01 p. (11.20%).—*Total income* per hectare is 232.11 p.

Cash outlays specified according to the most important items were as follows:

ACCOUNT ITEMS	PENGO PER HA.	PER CENT
New buildings	1.13	0.51
Upkeep of buildings	8.01	3.63
New machines and tools	2.31	1.04
Upkeep of equipment	9.69	4.51
Wages to labor and other operating expenses	56.81	25.76
Livestock purchases	24.07	10.91
Cereal purchases	33.16	15.03
Fodder purchases	20.10	9.11
Miscellaneous purchases	2.35	1.06
Insurance	3.25	1.47
Taxes	23.37	10.60
Payments on debts	13.33	6.15
Miscellaneous	22.47	10.22
Total expenses	220.05	100.00

The above cash expenses include also the part of wages which was delivered in kind (cereals, flour, lard, etc.). Of the total expenses only 20.51% was in real cash, the rest being in kind. This means that expenses would be increased by 50% if paid in actual cash. Products used or furnished by the owners of the farms have not been taken into consideration because they are contained in the "depreciation" or in the "inventory increase during the year." Cash used by the owners is considered as profit, but cash furnished by him as a loan.

NET PROFIT: Total incomes and total outlays for the large and medium estates of the group were per hectare: cash income 239.26 p.,

¹ Parenthetical percentage is of capital invested.

plus 17.38 p. inventory increase; cash outlay 221.44 p. with added depreciation of 9.84 p. Thus a total income of 256.64 p. less 231.28 p. outgo leaves a *net profit* of 25.36 p., or 9.89% of the income, or 1.24% of the capital investment. In this study two-thirds of the enterprises made a profit on capital.

DEBT: The indebtedness per ha. of these farms (area exempted from tax is included in computations) was: for long-term 85.06 p. @ 9.69%, short-term 41.18 p. @ 11.32%, and current purchases 6.54 p. @ 7.97%: making an average of 132.78 p. @ 10.11% per ha. Annual interest payments on the above basis total 13.42 p. per ha.

TAXES: The average of all agricultural taxes paid by medium and large scale farmers in the entire country in 1925 to 1927 was as follows:

TAX CATEGORIES	PENGO PER HECTARE		
	1925	1926	1927
State taxes	13.98	14.02	12.91
Communal taxes	4.97	5.15	4.80
Other taxes	2.17	2.08	1.93
Total Taxes	21.12	21.25	19.64

Considering all farms in Hungary (large, medium and small) and comparing the tax burden in 1927 with that in 1913 it appears that: the average tax burden per ha. in 1913 was 9.24 p. vs. 21.36 p. in 1927. That is, the farmers' tax burden has more than doubled since 1913. These figures refer to direct taxes paid by farmers, which do not include import customs taxes on imported industrial products needed by farmers. To determine this burden, the 1927 records of 32 large, 15 medium, and 39 small farms, representing a total area of 62,741 ha., of which 45,777 ha. was arable land, have been examined.¹ The result showed a customs burden of 10.18 p. per ha. total area (14.11 per ha. arable area), which represents 26.31% of the value of 1927 production.

15. OUTLOOK

The future trend of Hungarian agriculture appears to indicate a reduction of cereal production, and replacement by leguminous

¹ The details are: 1. Depreciation: a, Farm equipment, 8.31%; b, Machines and tools, 18.69%, c, Accessories, 10%. 2. Customs burden per ha. of total area: a, 3.98 p.; b, 0.97 p.; c, 3.80 p. Custom burden per ha. arable: a, 5.46 p.; b, 1.32 p.; c, 6.73 p. 3. Customs tax rate in % of value of produce: a, 31.46; b, 29.89; c, 22.74. Thus a, bears 40.27% of Customs burden, b, 9.79% and c, 49.94%. Customs duty on produce not included in inventory for class 2 was 0.43 p., and for class 3 was 0.60 p.

crops, commercial and industrial plants as well as by fodder crops.¹ Such a development is needed for the purpose of increasing exports and intensifying agriculture.

The production of practically all crops had been satisfactorily increasing from 1870 to 1914. Whereas about 16,000,000 quintals of wheat were produced in pre-war Hungary each year around 1870, the wheat production around 1890 increased to 40,000,000 and attained even 50,000,000 quintals in certain years around 1900. A similar trend was being experienced in the case of other crops until the beginning of the War. Production was, however, sensibly decreased during and for a few years after the War. During the past five years production has been again increasing. Farmers in general now try to work the soil better, to use more improved seed, more stable manure and commercial fertilizers, and to control plant and animal diseases. In a word, they try to increase production in quantity and quality in order to make up the decline caused by the War, and also to be able successfully to compete with western European countries.

Other important issues are: standardization of agricultural products,² further improvement of areas of alkali soil in the lowlands, completion of the drainage of internal stagnant waters, intensification of forestation in the lowlands, constitution of cultural and educational farm-centers in the lowland districts where farms are located far from each other and at considerable distance from neighboring communities, and building of agricultural railways to connect isolated farms.

16. SPECIAL ECONOMIC FEATURES

Cereal production, especially wheat growing, is the backbone of Hungarian agriculture. Both the soil and weather conditions are exceptionally favorable for this crop. The hard red Hungarian wheat is one of the best qualities in the world. Its relatively small yields have been improved by breeding, thereby largely regaining its former

¹ The Ministry of Agriculture has at present a project under consideration, which, if put into effect, will reduce in 1933 by 100,000 ha. the 1,600,000 ha. current wheat acreage. Corn would absorb 50,000 ha. of the abandoned wheat acreage, and the added corn crop would about supply the hitherto corn deficit. The remaining acreage of some 50,000 ha. would be planted to beans, lentils, poppy-seeds, hemp, flax, alfalfa seeds, clover seeds, etc. — TRL.

² A certain number of agricultural products, especially those destined for export have already been standardized and the designation of the standard grade as well as the National Mark have been made obligatory for certain export-products, e.g., paprika, alfalfa and clover seeds, drug plants, pork, lard, etc. Other products had been standardized during the last century, e.g., flour, which is exclusively dealt with on the basis of standard number designations. — TRL.

excellence and becoming, in addition, considerably more productive and more rust resistant. Wheat production is important as supplying home requirements, and producing a national income. Present Hungary has, in normal years, an exportable surplus of wheat that is one of the largest in Europe.

VINE: Vine growing and the production of wine has also great importance. The fact that from 3,457 communities that constitute present Hungary, only 853 communities do not produce wine, is characteristic of the popularity and importance of wine production. As to the acreage planted with grapes, Hungary occupies the fourth place in Europe after France, Italy, and Spain. Most of the grapes produced are white. The relative proportion of white to red grapes is about 70-75% white to 25-30% red. The Government considers the securing of markets abroad for the various brands of fine Hungarian wine as one of its most important duties. The continuous increase in wine exports during the past few years shows that amateurs of wine in foreign countries have a constantly increasing interest in the noted Hungarian wines.¹

HORSE: Horse raising is another feature in Hungarian agriculture. This feature dates back to the time when the Hungarian conquerors, coming from the Russian steppes, took possession of Hungary.² In spite of the generalization of motor locomotion, Hungarian horses are still in continuous demand. An average of from 18,000 to 20,000 horses are exported annually. The three existing Hungarian stud farms, not including private studs, have specialized in the rearing of the various breeds. Thus, the Government-owned Kisber Stud Farm produces primarily pure bred English horses or high bred half-blood horses used for riding. Its Stud Farm of Babolna produces pure bred Arabian horses; and its Mezöhegyes Stud Farm was primarily concerned in the improvement of Hungarian horses by crossing with Anglo-Norman and pure bred English horses. This improvement resulted in the production of two new breeds, the small and large "Nonius," which were definitely fixed in 1816 and have ever

¹ So-called "Hungarian Inns" were opened in 1929 in many important European cities, among others in Vienna, Munich, Berlin, Zurich, etc., where all kinds of Hungarian wines are sold and propaganda is pushed for their consumption. — *TRL.*

² A.D. 896. "The foundation stock of Hungarian horse breeding is the small Asiatic breed that carried the Magyar (Hungarian) horses across Russia and part of Europe in an unbelievably short time." From "Agricultural Survey of Europe," U. S. D. A. Dept. Bul. No. 1234 by Louis G. Michael. These small horses were then bred with Norman horses captured by Hungarian hussars in France during the Napoleonic Wars and later with horses of English and Arabian blood. The result is, according to the preponderance of Norman blood or of Arabian or English blood, a more or less bony horse. The general type is the light but large cavalry horse, with warm blood, rather nervous and wiry but always very enduring. — *TRL.*

since been reproduced. Foreign buyers demand primarily horses for army purposes and also horses of the heavier types.

CATTLE: Cattle raising is another very important branch of agricultural production. Cattle exports represent a large item in foreign trade, as do poultry and poultry products.

FRUIT: Great attention is being paid at present to fruit production and improvement as well as to the marketing of carefully graded and packed grapes and other fruits. The tastes and preferences of the export trade are carefully appraised.

CRISIS: The crisis in agriculture and the catastrophic slump in cereal prices form a powerful inducement to Hungary to readjust its agriculture. The replacement of part of the cereal production by hay crops and industrial and commercial plants can, however, be effected only gradually and only to the extent that will not result in disturbing the equilibrium in the marketing of the crops concerned. Hungary is an agricultural country, therefore a sudden change in systems of production would mean disturbances and possible damages to the national economy. On the other hand, the Government is convinced that a readjustment carried out on a reasonable basis is unavoidable; consequently it endeavors to facilitate such a development as far as is practicable. And it is absolutely necessary that the Government intervene in and direct and organize agricultural production. This is a necessity, not only because farmers in Hungary, as everywhere in the world, are conservative and do not readily change their inherited systems of production, but also in order to prevent farmers from disasters that they are likely to incur in undirected experimenting.

17. PAN-EUROPE OUTLOOK

The idea of Pan-Europe has many adherents in Hungary. In order to put into practice the ideal of economic and political coöperation of all European nations, it is necessary that Hungary play a rôle of equality with other nations, which is not possible in her present situation. The Trianon peace has robbed Hungary of two-thirds of her former territory. Her population decreased from 21,000,000 to 8,600,000. About 4,000,000 Hungarians have been forced under foreign rule, as a consequence of the treaty. Hungary has lost 56.30% of her arable lands, 69.42% of her pastures, 84.88% of her forests, 74.53% of her meadows, and 73.87% of her gardens. These figures are self-explanatory. Practically all of the former territories that supplied Hungary with necessary raw materials, such as minerals, salt, lumber, etc., have been segregated from Hungary. Annual im-

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ports of lumber cost more than the entire income from Hungarian cereal export. The fantastic, arbitrary frontiers prescribed by the Trianon treaty have bisected territories exclusively inhabited by Hungarians and pulled into pieces the natural geographic and economic unity of former Hungary surrounded by the Carpathian Mountains. Hungary, which never had any pretensions to occupy foreign territory, the European bulwark of defense for centuries against all eastern invasions, has been made the chief victim of the War.

Everybody in Hungary is imbued with the loyal purposes of the Pan-Europe movement and everybody knows the importance and necessity of peaceful economic coöperation with other nations. The thousand-year-old Hungarian nation, as represented by its present nationals, looks to early readjustments in order to make possible political and economic consolidation in Europe.

APPENDIX

TABLE I. AREA, YIELD AND PRODUCTION, CHIEF CROPS

CROP	1931 AREA CAD. YOKES ¹	YIELD 1931, QUINTALS	1931 PRODUCTION, QUINTALS	1930 PRODUCTION, QUINTALS
Wheat	2,815,714	6.69	18,829,780	22,953,426
Rye	1,043,445	5.25	5,480,157	7,215,452
Barley	818,531	5.68	4,648,780	6,010,245
Oats	418,922	4.38	1,834,156	2,612,495
Corn	1,923,287	7.60	14,632,159	14,070,649
Potatoes	499,327	29.47	14,716,097	18,414,456
Sugar beets	99,701	103.47	10,316,149	14,610,201

TABLE I-A. ANNUAL PRODUCTION, CHIEF CROPS

(Thousand quintals, i.e., 000 omitted)

YEAR	WHEAT	RYE	BARLEY	OATS	CORN	POTATOES	SUGAR BEETS
1909-1913 ² .	46,170	13,887	15,731	13,104	49,295	55,032	36,481
1921	14,347	5,880	4,661	3,188	8,053	12,492	5,429
1922	14,895	6,388	4,827	3,274	12,377	13,197	7,111
1923	18,427	7,944	5,938	3,986	12,509	13,342	8,636
1924	14,035	5,614	3,203	2,281	18,828	15,351	12,742
1925	19,507	8,262	5,537	3,706	22,345	23,095	15,274
1926	20,387	7,980	5,554	3,600	19,443	18,746	14,446
1927	20,938	5,681	5,157	3,268	17,361	20,049	14,554
1928	27,001	8,277	6,678	3,996	12,597	14,705	14,378
1929	20,408	7,982	6,826	4,107	17,941	21,683	16,070
1930	22,953	7,215	6,010	2,612	14,070	18,414	14,610

Other 1930 Hungarian crop results were the following: (in quintals) Millet 62,484; Buckwheat 4,009; Peas (dry grain) 146,358; Peas (green) 73,704; Beans 46,600; Lentils 58,817; Gourds (for human consumption) 60,440; Gourds (for livestock feeding) 1,250,728; Beets (for livestock) 22,019,681; other cultivated plants 1,362,563; Rape seeds 92,284; Hops 1,397; Tobacco 341,887; Hempseed 43,508; Hemp-stalks³ 420,703; Linseed 86,705; Flax³ 394,228; Poppy seeds⁴ 46,410; Sunflower-seeds 22,831; Green-corn (for livestock feeding)

¹ One cadastral yoke equals 0.575 hectares.

² Average annual data, pre-war.

³ Unprocessed. TRL.

⁴ Poppy seeds are being used in Hungary as a spice for flour-cakes. TRL.

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13,608,096; Various varieties of vetches and fodder-peas 4,067,322; Various breeds of clover 4,486,493; Alfalfa 4,958,332; Cabbage 792,738; Tomatoes 248,014; Onions 438,782; Paprika¹ 25,753; Other vegetables 535,980.

TABLE II. COMPARISON OF CROP PRODUCTION OF SELECTED CROPS IN PRE-WAR HUNGARY AND POST-WAR HUNGARY
(Thousands quintals, i.e., 000 omitted)

CROP	CROP RESULTS IN PRE-WAR HUNGARY (AVERAGE 1911-1915)	1911-1915 ²	POST-WAR HUNGARY		
			1920	1923	1930
Cereals:					
Wheat	41,017	19,924	10,322	18,427	22,953
Rye	12,439	8,033	5,143	7,944	7,265
Barley	15,116	7,128	4,719	5,938	6,010
Oats	12,588	4,398	3,238	3,985	2,612
Others	190	132	413	123	67
Total	81,350	39,615	23,835	36,417	28,857
Cultivated Plants:					
Corn	42,098	15,054	12,742	12,509	14,070
Potatoes	51,673	19,420	20,722	13,342	18,414
Beets	57,058	35,589	27,663	15,090	22,019
Sugar beets	38,118	15,106	6,398	8,636	14,610
Others	4,877	2,577	5,505	2,038	1,362
Total	193,824	87,646	73,030	51,615	70,475

¹ Green and red pepper (Capsicum), a plant from the *Solanaceae* family, used raw as a vegetable, or as a condiment when dried and ground. TRL.

² Annual average.

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CHAPTER SIX

POLISH AGRICULTURE

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POLISH AGRICULTURE

PART I. CONDITIONS OF PRODUCTION

1. PHYSICAL FACTORS

Poland occupies the center of Europe, from 16° to 28° east longitude and from 48° to 56° north latitude. The northern part of the country is predominantly level land, drained by the rivers: Vistula, Warta, Niemen and Prypeć with their affluents, and is a part of the vast European low-lands. The south of Poland, comprised of hills (up to 600 m. above sea level), is divided by the valleys of the Vistula and Dniester and their affluents. These hills reach up to the Carpathians and Tatras (2,500 m.), along which the southern frontier of the country runs.

The climate of Poland does not differ greatly from that of central Europe, being intermediate between ocean and continental, and the farther to the southeast the more accentuated is the continental element. The characteristic yearly isotherm for Poland is 7°–8° C.; for Germany it is 8°, and for Russia 7° at the same latitude. In the matter of rainfall, Poland may be divided into two basically different parts: the northern, where the yearly precipitation is 450–650 mm., and the southern, where the precipitation is greater than 650 mm. and reaches 1,200 mm. The southern part is a narrow belt comprising Silesia and the Regions¹ of Kraków, Lwów and Stanisławów. In the remaining territory the differences of precipitation are considerable; west of Warsaw the fall is smaller (450–550 mm.); east generally greater (550–650 mm.).

The area of Poland is registered at 37,711,661 hectares² of which arable land occupies 18,448,822 ha. (48.9%), meadows 3,789,512 ha. (10.0%), pastures 2,713,273 ha. (7.2%), orchards and gardens 536,154 ha. (1.4%), forests 8,357,909 ha. (22.2%), and other kinds and non-productive land 3,865,991 ha. (10.3%). From the point of view of area used for agricultural purposes (25,487,761 ha.), the position of Poland among European nations (excluding Russia) is one of the

¹ An administrative unit corresponding to the American State. Poland is divided into 16 Regions — see map.

² The geographical area of Poland is 38,839,000 hectares.

foremost, viz., third, after France (36,243,890 ha.) and Germany (29,373,239 ha.).

The kinds of soil in Poland are practically of uniform origin. The prevailing type is of glacial formation. Their adaptability, on the other hand, varies greatly. The soils are found not in large areas of concentration, but rather in mosaic pattern. Nevertheless, taking into consideration the predominance of certain types over others, the country may be divided into three different sections: the northern and largest, the smaller central, and the narrowest southern.

The northern part is composed of two kinds of soil: (a) podsoles, and (b) loams and sandy soils, where the two are constantly interwoven. In addition there are islands of black soil (Chernozem) at the boundary between the Warsaw and the Poznań Regions and to the southwest of Warsaw; there are heavy clay soils to the north of Warsaw, and, lastly, alluvial formations near the rivers, either fertile like loams, or lean like peats and sands, considerable tracts of which are found in the Polesie Region. The kind of soil, characteristic of the central belt, is loess, which stretches towards the southeast and gradually is displaced by Chernozem proper. In the loess belt are islands formed of rendzina (calcareous soils rich in humus), clay and sand. The southern belt of foot-hills and mountains is composed mainly of loams and silty clay, partly of rendzina soils.

From the standpoint of productiveness, Polish soil may be classed as medium fertile, generally best suited for rye and potatoes. This is true in particular for the northern and southern parts. The whole loess and Chernozem belt, however, some of the clay ground, rendzina soils, and alluvial loam are of the wheat and beet soil type. In the western Regions the land is typically "rye" (excepting black-soil areas), but owing to high culture long practiced, wheat and sugar-beets may well be raised there.

The area of the country *under water* may be divided into three categories: that of streams (32,639 km. in length), lakes (about 200,000 ha.) and ponds used for fish breeding (55-60,000 ha.). There must also be mentioned considerable tracts of *waste land*, which by drainage could be transformed into productive soil. These are swamp-meadows, marshes and peats; the latter, mostly peaty alluvial soils, cover an area of about 3 million ha. The territory to be reclaimed comprises about 18 million ha.; about 1.3 million ha. have already been ameliorated.

INTENSITY: The country of Poland from the point of view of agricultural production is not uniform. This is apparent as one travels from east to west: intensiveness and efficiency of production

increase progressively, and are reflected even in the exterior appearance of the farmsteads. Cement supersedes wooden structures, more farm machinery is used, more livestock, and work seems to proceed more briskly. Closer study of farm structure throughout the country enables one to see that in the west there is greater intensiveness, smaller percentage of fallow ground and two-year pasture land, better fertilizing, greater vegetable and animal production efficiency, greater number of agricultural industrial plants, a livelier exchange between farm and community.

And yet there is physiographic unity in the natural conditions of the country. There are variations of climate and fertility in the different sections, but they are smaller than the range of difference in efficiency of the farms. Moreover, we cannot find definite correlation between natural situation and results of farming. *The causes* of the very sensible difference of agricultural level in the various parts of the country must be sought for elsewhere. The element which set so strong a stamp on Polish agriculture and which made for the large differences of productive capacity of the three parts of Poland, was the unequal level of culture, and variegated economic and social conditions, the different attitude and political line of action of the three powers which for one hundred years held the country subject.

HISTORIC FACTOR: A relatively very high level of development was reached by pre-war agriculture in the west of Poland. The causes extend far back, to the time of reconception of the agrarian structure. Besides the large estate a healthy and self-sufficing type of peasant holding was formed; land reform was joined with commassation and liquidation of the obligations which were an outcome of the ancient relation between landlord and tenant. A manifold, excellently serviced system of rail, road and water ways, together with a capacious sales market in Germany (especially Berlin) made it possible to obtain high prices for agricultural products, particularly those not bearing distant and expensive transport (potatoes, hay, etc.). Added to this was a favorable customs policy and inexpensive credit.

The situation in the remaining parts of Poland developed much less favorably. Land reform, especially in the central and eastern Regions, was carried out from political motives, without regard to the necessities of production, and even to the real detriment thereof. In southern Poland a series of impediments prevented the rise of land-holdings to a higher level, viz., bad agrarian structure, the land checkerboard,¹ over-population of farms, and the economic policy of

¹ Holdings in many separate parcels, divided from each other by parcels of other proprietors.

the Government which, for instance, did not permit the organization of agricultural industry (especially sugar manufacturing), for which these parts were naturally favorable.

In the central, and especially in the eastern Regions, the following factors acted in the same direction: sparse development of railroads and highways, the land checkerboard, numerous servitudes and the effort of the Government to support extensive farming in Russia by differentiated freight rates. The result was that Poland was flooded with the cheaply produced Russian corn and cattle to the detriment of local production.

The highest prices of agricultural products and lowest costs of the means of farm production were in western Poland; the southern parts were midway on the scale in this respect, while the central and eastern lands were the worst off.

The effects of the war on, and subsequent reunion of the three parts of Poland, each with such different conditions of production, acted diversely in the three cases. Direct war devastation was proportionately the greatest in the east, where the eastern, a part of the central as far as the Vistula, and the greater part of the southern Regions were hardest hit.¹ When the war ended, the whole effort of the country was put into rebuilding the devastated land. As soon as this was accomplished, very energetically and quickly the situation of the farms in the east clearly changed for the better. The competition of cheap corn and cattle from Russia was ended; education by school and agricultural extension work, no longer hampered by the Russian Government, commenced to raise the farmers' level of intelligence; the Government began land reform, road improvement, etc. The situation of the farms began to improve steadily.

The product and production factor, prices and their interrelation, went through a series of variations; in general, however, they developed favorably for the central and especially the eastern Regions, less well for the western Regions. As a result of all these events, a certain equalization of the great disparity between the agriculture of the different parts of the country came about. Since the present situation is still in large measure the result of pre-war conditions, it will be necessary, in order clearly to depict agriculture in Poland, in many cases to discuss separately the characteristics of each part of the country.

The post-war inflation of currency, which developed until finally

¹ During the War 1,651,892 buildings in Poland were destroyed, of which 70% were farm buildings. The loss was about 13.5 billion gold francs (not counting the devastation during the War with Russia in 1920) of which the greater part was borne by agriculture.

stopped in 1924, had a great influence on agriculture. Temporarily it created a favorable condition, followed, however, by widespread disorganization. Inflation brought to the farmer relief in tax and debt settlement, and left him, besides, a goodly amount of money obtained from the sale of his products. This led to apparent welfare on the farm, also supplied the means of rebuilding what the war ruined, and raised the standard of living of the agrarian population. But these effects were accompanied by unfavorable forces, which gradually, in rhythm with the increase of the rate of devaluation, gained ascendancy. The rebuilding or intensification of farming units often proceeded without reason, for farmers, fearing loss of buying power of their money, too often made unproductive or even bad investments, e.g., increased purchase of livestock, out of proportion to the size of their property. At the same time it was impossible to proceed with large investments which required time, capital and accurate calculation. Finally, the worst effect of currency inflation was the obstacle which it raised against credit, an indispensable factor in agriculture. At first long-term credit was affected, and then, as money fell more and more rapidly, also short-term loans.

Stabilization of the currency was effected at the beginning of 1924. At this point, because there was no ready money and no savings, the cultivator was stranded without working capital, and further embarrassed by an increased supply of agricultural products, leading to their fall in price. Although the second half of 1924 witnessed a rise of grain prices, the agrarian situation was not improved, due to a poor harvest. Thus the year 1924-25 was the critical period for the farmer, and though the following favorable years (especially 1926-27 and 1928-29) softened the effects, yet they did not remove the real source of trouble, i.e., the overburdening of agriculture with high-interest, short-term credits.

If the period of favorable conditions for agriculture was not sufficient to decrease the burden of short-term credit, it is obvious that the recent years of low agricultural prices further impaired this aspect of the situation. It can readily be understood that the most grievously affected were the capitalistically organized units, the estates, producing primarily for the open market. The small holdings, however, have also been working under difficult conditions.

2. ECONOMIC AND SOCIAL CONDITIONS

In order to understand the economic and social conditions of Polish agriculture, it is necessary to consider the factors bearing on

the level and the line of development of the Polish farm. In the first place there is the population from the point of view of numbers, trades and psychology. In comparison with the states of western Europe, the average density of population in Poland is not great, amounting to 82.7 inhabitants per square kilometer. The difference of density in the various parts of Poland is very great. The number of inhabitants per sq. km. is greatest in Silesia, 265.9; followed by the southern Regions, 94.6; central 81.4; western 67.7; and eastern, 33.2.

FARM: The percentage of farming population is very high, 63.8%; while even in an agrarian country such as Denmark, the percentage is only 31.8. In certain Regions of Poland the percentage of farming population is unusually high, e.g., in the eastern Regions 84.1%, in the southern 72.6%. The average for the whole country is lowered by the minimal proportion in Silesia, 20.8%. The density of agricultural population in Poland is much higher than in the majority of countries. While in Germany it is 50.4 persons per 100 ha. of agriculturally productive land,¹ in Denmark 61.4, in Poland the average is 70.7, and in some Regions it is considerably higher, e.g., in the Kraków Region, where it is 109, in Lwów 102.6, and in Kielce 97.3. And so, where the average density of population is comparatively small, there is over-population of the farm, or, in other words, too large a number of people per unit of productive land.

LARGE AND SMALL FARMS: A very important factor bearing directly on Polish agricultural production is the two opposite types of agricultural enterprises, namely; large and small holdings, or, in other words, the estate and the peasant farm.² The level of education, both general and professional, of persons managing estates is much higher than in the case of small holdings. The estate produces primarily for the market; it is in direct contact with the mercantile and social life of the country; it therefore perforce is directed on capitalistic lines, where the greatest possible returns on invested capital are sought. The small holding is altogether different. It is foreign to the capitalistic system of agricultural production, and to the needs which would bind it to the world market, etc. The purpose of the peasant owner is solely to provide food for himself and his family.

¹ Arable land, meadows and pastures.

² A large holding or estate means one in which there is division of labor into directive and physical, in which the proprietor is director only of the enterprise. In the small or peasant holding the proprietor is simultaneously manager and laborer, and the members of his family are also physical workers. The Bureau of Statistics defines small holdings as properties up to 50 ha. Such definition, of course, does not cover all cases especially on account of the differences in the various parts of the country. As a rule, the area is less in the west, and increases in the east.

Therefore, he has no idea of labor value, and has little regard for efficiency.

In comparison with the pre-war period, the present expert knowledge and professional education of farmers is on an improved level. For the estate, agricultural schools and universities are providing capable managers in considerable numbers. In the peasant class there is even a greater rate of improvement. The factors which bring this about are obligatory schooling, the spread of agricultural schools, and the healthy activity of organizations, social and agrarian, of government and local authorities, — all working to raise the knowledge-level of the small landholder.

COMPARISONS: Comparing the large with the small holding, there are two classes of differences. In the one category are those elements which are always found in the small enterprise, accentuated in inverse proportion to size, and only partly remediable. In this category is the element of "supersaturation" of the enterprise by number of people, live and dead stocks, but above all by draft and labor. In the other category are those elements of lower professional education which are expressed in the less efficient handling of means of production and their inept application to existing conditions. These shortcomings of the small holdings will be discussed in Part II of this chapter. The relative overburdening of small farms by capital invested in buildings, dead and live stock, and workmen, is illustrated in the following table.¹

TABLE I. ACTIVE CAPITAL IN FARMS OF DIFFERENT SIZES 1926-27
(In Zloty per Ha. of Productive Land)

CAPITAL IN	PEASANT HOLDINGS							ESTATES IN REGIONS	
	2-3 ha.	3-5 ha.	5-10 ha.	10-15 ha.	15-30 ha.	30-50 ha.	Average	Poznań	Southern
Building . . .	1574	1001	735	618	468	365	665	575	481
Dead stock . . .	236	188	153	181	136	97	157	77	72

For comparison between the large and small holdings the above data serve rather as illustration than correct expression, since they are not of the same order. The figures for the small holding are an average of 433 farms from the whole country, and so include those

¹ The publications of the Department of Small-Farm Economics of the National Scientific Institute of Pulawy, and several similar publications treating of large holdings, make possible a statement of the amount of active capital in farms according to their size.

regions where agriculture is relatively on a low level of intensity. The figures for estates were taken solely from the Poznań and southern Regions. It must be noted that in the Poznań Region the intensiveness of agriculture is greatest and building capital is dearest. Also the methods employed in appraising building and stock values were not the same in the three cases mentioned.

There are very much more uniform data for draft animals and work-day effort per unit area. In Table I, Appendix, there is shown the amount of human labor according to area of farm.

The area of farms in unforested land per draft animal in 1928-29 was: for 3-5 ha. farms 4.06 ha. per animal, 5-10 ha. 4.87 ha., 10-15 ha. 5.81, 15-30 ha. 7.58 ha., and 30-50 ha. farms had 8.6 ha. per draft animal. In the Poznań Region in 1928-29 the number of draft animals per 100 ha. of productive land was: (a) on small holdings (average of 103 units) — 17.3; and (b) on estates (average of 73 units) — 11.4.

The number of working days per 100 ha. of productive land in western Regions in 1928-29, according to sizes is respectively as follows: 20,320; 13,000; 9,090; 7,300; 5,740; and 4,570. For Poznań Region on farms of more than 50 ha. there were 6,056 work-days.

The small holdings are in considerable preponderance over the large holdings (57.5% of total area vs. 26.9%), and embrace the greater portion of all the arable land, pastures, meadows and gardens. The forests belong almost exclusively to estates, the State and communities. In the small holding the largest share, 67.9%, falls to arable land; next come meadows, 12.4%, and pastures, 6.8%; forests occupying barely 4.8%.

In the large holdings or estates, the greater portion of the total area is covered by forest, 43.1%, followed by arable land, 32.5%, meadows, 8.5%, and pastures, 5.2%. The land belonging to communities (towns, villages), church, etc., consists mainly of forests, 50.3%, pastures, 11.9% and waste, 26.2%.

AGRICULTURAL STRUCTURE: The division into large and small holdings, which are the most general forms of land administration in Poland, does not sufficiently characterize the agricultural structure of the country. To form a better opinion, it is necessary to rely on 1921 statistics. These data, unfortunately, were compiled directly after the war, when the boundary question was not yet concluded, and as a result cover only 30,340,669 ha. instead of the present geographical area, 38,839,000 ha.¹ The division of the above area into 3,262,000 farms is alone sufficient to show great disparity. There is

¹ Upper Silesia and a few districts of the Wilno Region were not included.

a large number (1,108,758) of small, dwarfed lots of an area not exceeding 2 ha. And there are only 87,599 farms of 20-100 ha., or in other words, large peasant holdings approaching in type the estate. The predominant types of holding, numbering 1,044,785, are of 5-20 ha. size, covering 31% of the area, and only 18,916 large estates of more than 100 ha., covering 45% of the total farming area.

It is important to note that in all these various types of property, different proportions of various soils and a fairly wide range of social and economic conditions result in a wealth of types of farm, different in appearance, structure, capitalization, methods of operation and final output. This very great diversity of individual enterprise is a characteristic of Polish agriculture.

COMMASSATION: The agrarian structure of the country is in great measure characterized by the different degrees of commassation which have been put through. The division of properties into many separate parcels and the interposition of fractions of one property with those of other properties in a checkerboard fashion is a real calamity to the small holder, greatly hampering rational administration.

CHECKERBOARD: In the western Regions, the checkerboard evil was removed at the time of settling peasants' ownership. But in the other Regions commassation was not carried out simultaneously with settlement, and became still more intricate as a result of division, heritage, liquidation of servitudes, etc. The checkerboard becomes worse to the east, corroborated in Table 2.

TABLE 2. THE LAND CHECKERBOARD IN POLAND

REGIONS	% OF FARMS IN THE CHECKERBOARD 6-10	% OF FARMS HAVING ARABLE LAND IN				
		2-5 parcels	6-10 parcels	11-20 parcels	Above 20 parcels	Unknown number
POLAND	46.8	29.5	11.0	4.5	1.6	0.2
Central Region	47.1	30.5	9.8	4.6	2.1	0.3
Eastern Region	60.0	23.7	22.7	9.8	3.3	0.5
Western Region	16.6	15.6	0.9	0.1	0.0	..
Southern Region	47.1	35.0	8.8	2.7	0.5	..

SERVITUDES: Another ill of the Polish farm is the servitude, i.e., uses and services put on one property for the benefit of another property owner. They are of various kinds: (1) pasture, right of pasturage on fallow land, stubble, meadows, pastures and woods; (2) forest, right of timber for building and fuel wood, dry twigs and leaves; (3) fishing; and (4) right of way for cattle, vehicles, etc. The servitudes in the central and eastern Regions, guaranteed to the

peasants by the decrees of 1861 and 1864, are of a separate nature, since the Russian Government created them almost solely for political reasons, to spread discord between the peasant and the landlord.

Besides private land, there is considerable belonging to the Treasury, towns, villages, the church, foundations, etc., amounting to about 7.6% of the area of the country. The common grounds of villages constitute about 5%.

Of the agrarian population about 31% do not possess land.

3. THE STRUCTURAL CHARACTERISTICS OF DIFFERENT REGIONS

In the western Regions (Poznań and Pomerania), there are many large holdings above 100 ha. covering large expanses (52% of the area). In these Regions there are also many large peasant holdings (20-100 ha.), such as are not found in any of the remaining parts of the country, constituting a real national asset. Of the holdings which are not greater than 5 ha., a large portion does not exceed 2 ha., viz., small parcels, gardens and suburban lots, and as such are favorable factors. In these Regions there is no harmful checkerboard, nor are there servitudes. In connection with the economically strong large landholder, there are a considerable number of non-landholding agricultural workers (41%).

The central Regions are in structure the most typical. They have the same percentage of large holdings as the average for the whole country (31.5%), the same relation of non-landholders (31%), somewhat fewer farms below 2 ha. and above 20. The checkerboard is still found here and servitudes are not yet wholly abolished.

The eastern Regions contain a larger percentage of large holdings than in the rest of Poland, a considerably greater proportion of 5-20 ha. holdings, and fewer farms of less than 5 ha. In this part of the country, however, larger amounts of land are necessary for self-sufficiency. Commassation is not yet executed and servitudes still exist.

The worst structure is that of the southern Regions. The proportion of farms of less than 2 ha. is from 55% to as high as 68%; the number of holdings up to 5 ha. in size is 80% to 90% of the total. Of holdings of 5-20 ha. there are only 12%; of 20-100 ha. barely 0.5%. The checkerboard in these parts is very complicated.

Upper Silesia, being an industrial region, is individual in agricultural structure, having a very considerable proportion of *latifundia* and a large proportion of small possessions up to 5 ha., of the parcel type, characteristic of mining and industrial centers.

LAND REFORM: By reason of over-population of the farm and faulty agricultural configuration of many parts of the country, the necessity of rebuilding the agrarian structure in Poland became a leading problem from the very moment of gaining independence. On July 10, 1919, Parliament issued a land reform Statute, and on July 15, 1920, a Statute for the execution of land reform, in which the executive head was the Chief Land Office (independent of the ministries) and its district bureaus and land commissions. This period closed with the Statute of August 11, 1923, which created a Ministry of Land Reform, supplemented by a new Statute on land reform, December 28, 1925.

The purpose of these two Statutes was to base the agrarian structure of Poland on sound, self-supporting farming units. To consummate this end new farms were to be created, completion of the non-autonomous peasant holdings were to be finished at the expense of large possessions, servitudes and common grounds were to be liquidated and other ministrations for the raising of the efficiency of production, e.g., drainage, were to be invoked.

The Statute of 1920 which was only in small part put into force, answered the specific purposes inadequately. It predestined all large holdings to parcellation, fixing the maximum possession allowable at 300 ha. in the eastern Regions, and 180 to 60 ha. as the case might be, in the remaining Regions. On this basis the Statute was executed during the first period, commassation and liquidation of servitudes and common ground being only slightly considered.

The superseding Statute of 1925 is a definite step forward. It lays down a yearly contingent of 200,000 ha. to be parcelled in the course of 10 years. Fixing the same maximum possession as the Statute of 1920, it excludes those large estates that are eminently productive, in a total of 550,000 ha. It further joins parcellation with that of completing non-self-sufficing farms and stimulates greater activity in commassation and liquidation of servitudes. So, from the middle of 1926, action towards the rebuilding of the agrarian structure takes into account much more clearly than before the whole system of economic factors, and is aimed at reduction of large property for the benefit of the small holding, and at forming the possessions on a rational production basis.

RATIONALIZING PARCELLATION: In the early post-war years a very considerable percentage of parcelled land was being allotted for the creation of new farms. The reason for this was, (a) insufficient understanding of the amount of disposable land, and (b) the very earnest desire of the agricultural proletariat and semi-proletariat to

acquire small properties. In the course of several years came understanding and pacification, and from that time forward a much larger proportion of land than before has been employed for the completion of the inefficient small holdings.

Simultaneously, dating from 1926, a tendency to increase the work of commassation, and the liquidation of servitudes and common ground may be observed. (For details see Appendix, Table II.)

EMIGRATION: By reason of over-population of the country, imperfect agrarian structure and no movement towards the cities; also, because of political oppression of the annexing nations and no proper legislation, pre-war Poland was, of European countries, one of the most obsessed with the fever of emigration. The steadiest was the stream to America, which took about 2,150,000 people across the seas. Then there was also migration internally from one of the annexed parts of Poland to another (about 1,300,000), and seasonal emigration for summer labor, almost exclusively to Germany (from 550,000 to 600,000 young men and women nearly every year).

The emigration movement after the war changed radically. Emigration to the United States (about 100,000 persons yearly), which revived directly after the cessation of hostilities, fell rapidly as a result of the Dillingham and Johnson bills. At first the fall was to 30,000, then to 6-8,000 persons per year; and at present the movement is practically nil. Emigration to Canada increased, until recently, steadily although slowly; emigration to the Argentine indicated a strong tendency to develop; the movement to Brazil, on the whole inconsiderable, has been characterized by wide fluctuations. Emigration affecting the non-agricultural Jewish population to Palestine broke down. (See Appendix, Table III.)

Of European countries, the German labor market is contracted at present, absorbing not more than 15% of the pre-war quota. France has to a certain degree supplied the equivalent. Emigration to that country is legal and registered, and takes place generally in organized transports. At the present moment, however, this outlet has also begun to narrow. Data on post-war emigration and re-emigration is cited in Table III, Appendix.

ROADWAYS: As in every other field of economics in Poland, there is also lack of unity in communication conditions. The best conditions are in the western Regions, the worst in the central and eastern Regions, i.e., those formerly under Russian rule. The dearth of railways and roads in the central Regions was a calamity to agriculture in this territory. Many important local centers were without rail connection; likewise there was no railroad in the broad frontier belt,

and in many cases the railway designedly skirted towns at a distance of several miles. The war-time governments and the Polish authorities have remedied the most glaring defects, but even so, the central and eastern Regions are not anywhere nearly so well off as those in the west and south. (See Table IV, Appendix.)

4. FINANCIAL CONDITIONS

Credit conditions in Poland before the War were on the whole favorable. This is especially true for long-term credit, which was handled mainly by 5 mutual credit institutions: 3 land credit associations in the western Regions, the Land Credit Association in Lwów for the southern Regions, and the Land Credit Association in Warsaw for the central Regions.¹ The credit issued by the above institutions was fairly large. In the western Regions in 1917 it was 148.1 million marks (about \$35,300,000), in the southern Regions in 1915 — 259.7 million crowns (about \$52,700,000), in the central Regions in 1917 — 204.6 million roubles (about \$105,400,000).

Besides land credit associations, other institutions supplied long-term credit to Polish agriculture. Noteworthy among these were: in the western Regions the Rental Banks, the Colonization Commission and the Land Bank; in the central Regions the community loan and savings cash-offices; in the eastern Regions the Szlachecki Bank and the Wilno Land Bank, and in both central and eastern Regions the Peasant Bank, which gave out loans for purposes of parcellation. In the matter of short-term credit, it was issued before the War to agriculture by private mortgage banks, the Krajowy Bank in the southern Regions, communal savings cash-offices, the majority of Government and private banks, and coöperative credit institutions.

COOPERATIVES: The coöperative movement was the most uniform in the western Regions, where it developed mainly through the influence of one Schultz of Delitsch. The so-called Banki Ludowe (People's Banks) were generally institutions drafted on a large scale, and rich. The center of the coöperative movement was the Union² in Poznań, established in 1872. In 1914, the total of loans granted by coöperative institutions came to 271.66 million marks (about \$64,800,000), of which 90% was absorbed by agriculture.

¹The Poznań Land Credit Association was established in 1917; the Land Credit Association in Warsaw in 1825; the Land Credit Association in Lwów in 1842; the Wilno Land Bank in 1875.

²Związek Spółek Zarobkowych i Gospodarczych.

In the southern Regions, the coöperative movement was less uniform. Two types of coöperative were in order: that of Schultz Delitsch, united in the Union¹ in Lwów, founded in 1874, and coöperative societies of the Raiffeisen type, the so-called Kasy Stefczyka,² founded in 1899. In 1912 the amount of loans given out by coöperative societies of the first type was 245.55 million crowns (about \$49,800,000), and by coöperative societies of the Kasy Stefczyka type was 66.37 million crowns (about \$13,500,000). The Raiffeisen type of coöperative in Cieszyn Silesia supplied loans aggregating 7.8 million crowns (about \$1,600,000). In the central and the eastern Regions the principles of coöperation did not penetrate deeply into the country and had no important influence on the agriculture thereof.

The interest on long-term credit was highest in the central and eastern Regions (nominally about 4½%), in the southern Regions it was a bit lower, and in the western Regions varied between 3 and 4%. In the first years after the War inflation caused a total collapse of agricultural credit. With the completion of currency stabilization, there was no longer any free capital, and, as has already been noted, this led to the over-burdening of agricultural enterprises with expensive short-term credit.

LONG-TERM: At the present moment, six strong institutions supply Polish agriculture with long-term credit in mortgage bonds; they are the following: Land Credit Association in Warsaw (Towarzystwo Kredytowe Ziemskie), Poznań Land Credit Society (Ziemskie Kredytowe), Land Credit Society in Lwów (Towarzystwo Kredytowe Ziemskie), Wilno Land Bank (Bank Ziemski), and the National Economic Bank (Bank Gospodarstwa). The credit societies are effecting very small turnover in comparison with their activity before the War. In 1925 they put through the conversion of loans issued since the stabilization of the currency.

The State Land Bank, which was conceived as a long-term credit institution, preëminently for purposes of parcellation, embraces nevertheless all branches of banking activity. It fosters parcellation in two ways: by direct purchase of agricultural estates, and by granting credit in the form of mortgage bonds to buyers of parcels. In addition, it gives amelioration credit in 7% bonds and credit for production increase. The National Economic Bank, since 1926, issues gold mortgage bonds for town and country mortgage loans. The nominal interest of the majority of these loans in 7-8%; the actual

¹ Związek Stowarzyszeń Zarobkowych i Gospodarczych.

² Dr. Frank Stefczyk (1861-1924), one of the pioneers of the agricultural coöperative movement in Poland.

interest is about 10-11%. On July 1, 1931, long-term loans from the six banks was \$106,820,000.¹

Besides credit in the form of mortgage bonds, there is also long-term credit supplied by Government, which includes funds for special purposes, such as land reform, amelioration, support of stock-breeding and dairy production. The interest on these credits is relatively low, from 4 to 5%. The funds are administered by the State Land Bank. The state thereof on July 1, 1931, was a total of 378,171,000 zt.

Short-term credit is supplied mainly by the State banks: the State Land Bank for the small holder, the National Economic Bank for estates; while the Bank of Poland finances strictly agricultural industry and trade, and the agricultural banks and coöperative societies. Private institutions, communal cash offices and credit coöperatives, by reason of lack of funds do not do much business of their own in this respect, but act rather as dispensers of credit coming from the Government institutions. Short-term credits are granted for varying lengths of time, ranging from three months to a year. The interest is 12%. On July 1, 1931, short-term loans² amounted to \$136,360,000. In addition, agriculture obtains from private sources considerable amounts in short and long-term credits, on which the interest is generally high, especially in the case of short-term credit.

¹ The financial condition, in zloty, on July 1, 1931, was the following:

	<i>In 000's Zloty</i>	
STATE LAND BANK:		
in 8% and 7% mortgage bonds and amelioration bonds		337,590
NATIONAL ECONOMIC BANK:		
in 8% and 7% mortgage bonds		55,940
LAND CREDIT ASSOCIATION IN WARSAW:		
in 8% and 7% mortgage bonds	148,115	
in converted 4% and 4½% mortgage bonds	113,000	261,115
POZNAŃ LAND CREDIT SOCIETY:		
in 6% rye bonds and 8% mortgage bonds	105,891	
in converted 4% mortgage bonds	36,000	141,891
LAND CREDIT SOCIETY IN LWÓW:		
in 8% mortgage bonds	55,260	
in converted 4% and 4½% mortgage bonds	9,000	64,260
WILNO LAND BANK:		
in 8% mortgage bonds	38,911	
in converted 4½% mortgage bonds	51,000	89,911
Total		950,707

² In July 1, 1931, it was itemized as follows:

Bank of Poland (approximately)	238,000,000 zloty
National Economic Bank	159,071,000
State Land Bank	246,868,000
Private Banks	268,214,000
Coöperative Societies	301,435,000
Total	1,213,588,000 zloty

TAXATION: The taxation of Polish agriculture became significant only at the close of 1923. Before that time, the rising currency inflation decimated the real returns from taxes paid by agriculturists, since the nominal and casual advance of tax rates did not keep up with the devaluation of currency. This state of affairs changed definitely when stabilization was effected, and especially to the detriment of the large land-holder. At the present time, agriculture is burdened with the following national taxes: (1) land, (2) income, (3) the 10%^o-extraordinary super-tax, and temporarily (4) the remainder of the as yet uncollected, non-repeating, capital tax.

KINDS: The land tax is collected on four bases, viz., that of the former German, Austrian and Russian Statutes and the Polish Statute of June 15, 1923. The Polish Statute provides a 10-100%^o progression of the fundamental tax, and a regression of 20 and 50%^o applicable to quotas below the fundamental tax. The income tax, uniform for the whole of Poland, is graduated and bears on the total income of the payer from all sources of income, which includes earnings derived from agriculture. The non-repeating capital tax is also uniform for the whole country. It is progressive and bears upon the sum total of capital established for July, 1923. Besides the above taxes, there is also the forest levy of 1923, which was to be collected once and for all in cash or kind in an amount equalling 30%^o of ten years' felling on tracts exceeding 50 ha. The arrears on this tax have been spread in installments over several years.

A defect in the taxation system is the manner of tax measurement. The bases of land classification for tax estimation are obsolete, while the income tax is measured according to set rule. In the latter case the fault is rather on the part of the agriculturist, since relatively few can show rational bookkeeping. In late years, however, the tendency towards establishing accounting offices has been gaining in favor.

INCIDENCE: The amount of the national taxation which falls on agriculture is fairly large. For instance, the land tax in 1928 was 68,686,288 zt.; the capital tax was 26.2 million zt.

Communal finances are based on the Statute of August 11, 1923. Since the taxes foreseen therein proved to be insufficient, a series of separate levies was introduced by special Statutes, with the result that up to 1928 farmers paid ten different autonomous taxes in different terms.

The newest regulations have set two separate terms for the payment of these taxes. The maximum permissible taxation of agricultural possession was defined in relation to the basic land tax, and is in the central Regions 267%^o, in the eastern 355%^o, in the southern

199%, and in the western 337%. In the central and eastern Regions the maximum is continually assessed, likewise in the western it is usually at maximum, while in the southern it is very much less, a little over half the legal maximum.

In addition to these taxes, the district government requires from agriculture services in the form of workmen and horses, the animal value of which comes to several score millions of zloty.

5. AGRICULTURAL EDUCATION

The professional education of the farmer in Poland is obtained in the primary and intermediate agriculture schools, in universities, in scientific institutes and experimental stations, and by means of agricultural extension service. The university agriculture teaching and that of the special medium course is administered by the Ministry of Religion and Public Education; the intermediate purely agricultural, primary and agricultural extension service is administered by the Ministry of Agriculture.

POST-WAR REGULATIONS: The Statute of 1920 requires every district to organize and keep up two primary farming schools, one for boys and the other for girls. The schools must have dormitories and 15-40 ha. farms; the course runs for not less than one year, admitting pupils not younger than 16; the entrance condition is graduation from grammar school, with free tuition. The Treasury aids the district government by free grant of land, subsidies up to 25% of the cost of installation and loans at 3%, in sums up to 50% of the cost, returnable in installments. The same rights and aids are enjoyed by the winter 2-year schools, maintained by the Chambers of Agriculture in the western Regions. At the present time, the Statute of 1920 is not yet wholly in force.

ELEMENTARY: In 1930 there were in Poland 129 primary agricultural schools, of which 26 were maintained by the State, 75 by the district Governments and 28 privately. In addition there were 10 travelling schools of household management, with a 3-month course. During the past year, 5,300 pupils attended the primary agricultural schools.

INTERMEDIATE: There are at present 6 intermediate agricultural schools. In 5 of these the course is 3 years, in one 4 years. The entrance condition to the first 5 is completion of the 7-year elementary school course, or 4 years of the medium general school. In the sixth school (in Cieszyn), which is on a more advanced level, 6 years of medium general school are required. In one of the above schools

there is, in addition to the agriculture department, a department of forestry. The total attendance is about 1,000, of which about 174 graduate yearly.

SPECIAL: Of the special schools, there are in Poland 4 primary gardening schools with a 2 and 3-year course, 3 medium schools and the department of gardening at Kraków University, 5 lower schools of forestry, 4 schools of surveying and 4 dairy schools.

COLLEGES: There are 5 agricultural universities: 3 agricultural departments in the University of Kraków, Poznań and Wilno, a department of agriculture and forestry of the Polytechnic in Lwów and the College of Agriculture at Warsaw, with 3 departments: agriculture, gardening and forestry. Noteworthy is the division of Rural Sociology in the College in Warsaw. The duration of the course is 4 years, of which three years are of prescribed work, and the last year is specialization. After completion of final examinations and thesis, the graduate receives the title of Agricultural Engineer. The number of collegiate students in the year 1929-30 was 2,218, of which about 150 were awarded diplomas.

SPECIAL COLLEGES: Besides the above universities, there are several other schools or departments on university level, which are fairly closely allied to agriculture; these are: the Academy of Veterinary Medicine in Lwów (535 undergraduates), the Veterinary School of the University of Warsaw (327), and the Department of Hydro-Engineering in the Warsaw Polytechnic (475). The private "Higher Farming Course" in Lwów conducts a two-year course, in which it prepares the undergraduates for estate management.

RESEARCH: One of the largest research units is the State Scientific Institute in Puławy (Państwowy Instytut Naukowy Gospodarstwa Wiejskiego w Puławach). It has a department in Bydgoszcz, an ocean laboratory on the Hel peninsula, a station of mountain pasture research in the Carpathians, and a gardening experimental plant in Zaleszczyki. The task of this Institute is the study of every phase of agriculture, not excepting the economic aspect thereof (Department of Small-Holding Economics).

Agricultural experimentation of a more general order is conducted by societies and Chambers of Agriculture, which receive large Government subventions for the furtherance of this work. At present there are 25 such experimental units; every year the results are published by the Union of Agricultural Experiment Stations of Poland.

CONTROL WORK: There are 4 zoö-technical stations under the general direction of the Polish Zoö-technical Association in Warsaw and

10 plant-protection stations under the control of the Phytopathologic Division of the Scientific Institute in Bydgoszcz. Control of fertilizers and fodder is handled by 6 laboratories; control of butter for export, by 17 laboratories.

EXTENSION: Agricultural extension service is in the hands of societies and Chambers of Agriculture and is conducted either directly by special instructors, or by teachers from the primary agricultural schools, who become instructors in the summer. The necessary funds are supplied by the Ministry of Agriculture, Societies and Chambers of Agriculture. The methods of instruction are of great variety: study courses, exhibitions, excursions, circulating libraries, competitions and radio. At present the most effective have been deemed the following: (1) competitions among adult farmers and household managers, (2) model farms conducted by instructors, and (3) agricultural training by means of competition of farm youth (according to the example of the American "Boys' and Girls' Clubs").

Competitions for adults include vegetable raising, milk production, pig fattening, raising of young stock and organization of poultry farming. In the last year, 13,000 persons took part in the competition. There are already 3,500 model farms, and the movement was begun only two years ago. The youths' competition, introduced 4 years ago, embraces at present about 53,000 boys and girls.

Lastly, there is the Staszic Agricultural Correspondence Course with a program of: (1) approximately the intermediate agricultural schools, (2) a popular course, (3) a home economics course for farm women, (4) a course of agricultural preparation, (5) a course of bee-keeping and (6) a course for farm accountants.

6. AGRICULTURAL ORGANIZATIONS

Agricultural organizations of various kinds are great aids in raising the level of living of farmers and agriculture in Poland. From the point of view of problems, purposes and scope they may be divided into two large groups, namely: (a) purely agricultural organizations, and (b) economic, viz., agricultural and commercial organizations.

CHAMBERS OF AGRICULTURE: The first group is composed of two branches: (1) compulsory communal associations — chambers of agriculture working in the territory of different Regions (at present four, viz., the Poznań, Pomeranian, Silesian and Warsaw); and (2) spontaneous organizations.¹ The purpose of both is the spreading of

¹ Centralne Towarzystwo Organizacji i Kółek Rolniczych in the central Regions, Małopolskie Towarzystwo Rolnicze for the southern Regions, Wielkopolskie Towarzystwo Kółek Rolniczych and Pomorskie Towarzystwo Rolnicze for the western Regions.

agricultural learning and culture in the country, propagation of new technical means, rational labor methods, etc. These organizations reach the producer directly by means of their provincial divisions; in many cases they employ instructors, experts in special branches of agricultural science. In spite of the fact that the purposes of both compulsory and free agricultural societies are identical, and that therefore the existence of the one would seem to exclude the need of the other, practice has proven that this duality is harmonious, mutually complementary, and gives good results.

UNIONS: The purely agricultural organizations bring together cultivators of similar interests, and their task is the representation and the defending of these interests. To this group belong landlords' societies, forest owners' societies, gardening associations, associations of sugar-beet planters, of chicory planters, seed cultivators, cattle breeders' and horse breeders' unions, etc.

The majority of these organizations, federated in district groupings, aim at closely united representation to embrace and defend the whole of the interests of the given branch of agriculture. To further these ends, a series of central institutions have arisen. For example, the organization which unites all the landlords' societies is the Chief Board of Land Organization; the one that unites forest owners' societies is the Union of the Forest Proprietor's Associations; and that of associations of sugar-beet planters is the Union of Sugar-Beet Planters' Societies.

A similar form of organization for the purpose of defending their interest has been conceived by the different branches of agricultural industry, such as distilleries, sugar and starch factories, flour mills, etc. Many of these organizations are of a two-fold character, merging purposes of representation with trading opportunities. For instance, the Starch Producers' Association, the Syndicate of Hop Growers, etc., have to do mainly with the commercial manipulation of the product supplied by the respective affiliated members.

The sugar industry associations are of a different character. As a result of the different conditions under which they were created, the sugar factories of the western Regions differ widely from those of the southern and central Regions. In the western Regions there is a number of large sugar factories in which the landholders are shareholders and are obliged to pledge a proper area to beet-growing. In the central Regions small factories operate, which because of the low wealth of the agriculturists of this section, are of a private-capitalistic structure. Here the planting of sugar beets is regulated on the basis of individual agreements between the planter and the factory, in the

form of general agreements between the Union of Sugar-Beet Planters' and the Union of Sugar Factories.

ECONOMIC ASSOCIATIONS: The second great group of agricultural organizations is of a commercial nature, the responsibilities of which are: supplying the necessary means and tools of production to the farmer and intermediating as a salesman between the farmer-producer and the center of consumption. Two different kinds of organizations should be understood: (a) those of a coöperative character, and (b) the institutions of a different organization structure.

COÖPERATIVES: In Poland there are several varieties of coöperative institutions, such as: credit, trading, manufacturing, electrification, building and dwelling. Their membership consists of the proprietors of small and medium-sized enterprises in agriculture, commerce and industry.

MIXED FUNCTIONS: It is difficult to distinguish agricultural coöperative societies from others. Many of them, founded in the country as agricultural enterprises, often have a large town membership. Similarly a large number of farmers belong to coöperative societies which are organized with the idea of serving the city population. Moreover, the various kinds of coöperative societies are in different degree dependent on the rural community, or influence the latter in different ways. For instance, the trading-agricultural coöperatives, which sell to agriculture fertilizers, fodder, fuel, etc., and buy in return grain, have relatively little connection with agricultural producers. Strictly rural and in close contact with the farmers are the processing coöperatives, such as dairies. These depend largely upon the producer while exerting strong influence on the intensity of the local cattle raising.

In general, it is true that in all the coöperatives, especially in those of credit and trading, omitting the specifically agricultural, dairy, egg and machinery, the agricultural element is very evident; hence the coöperative movement is strongly tied in with agriculture.

REGULATION: Before the war the coöperative movement spread rapidly over the land. The war and the period of inflation were disintegrating, and the rebirth of coöperation did not occur until 1924. In 1920 the coöperative Statute was published, embracing every type of coöperative organization. Three regulations thereof are the most characteristic: (1) in the case of liquidation the capital may not be divided among the members, (2) the dividends may not exceed the discount rate of the Bank of Poland by more than 2%, and (3) the different members have the right of only one vote each, no matter what their share in the organization.

AUDITING: The law requires that at least every 2 years the coöperative societies be examined by a competent official. The Coöperative Board may legally require coöperative associations to execute such auditing. Such associations, called revisional associations, are responsible not only for the exercising of this function, but also the defending of the legal interests of coöperative societies in general, their representation, perfection of their administration, etc.

In practice it has been found that a large number of coöperative societies belong to revisional associations which, in turn, have formed more general unions. At present, revisional associations form the following four groups: (1) Union of Coöperative Associations in Poland, (2) Union of Agricultural Coöperative Societies, (3) Union of Consumers' Coöperative Societies, and (4) a score of revisional associations which belong to none of the above groupings.

The healthy state of coöperative societies in the year 1929 was shown in 17,476 societies, about 65% federated, with a membership of some 2.5 millions. (See Table V, Appendix for details, 1925-29.)

Economic agricultural affiliations organized otherwise embrace a portion of the syndicates which are drawn up in the form of joint-stock companies, but they are gradually transforming themselves into coöperative organizations.

CENTRAL UNION: It is seen from the above condensed review that agricultural organizations have wide and varying ramifications. But the various activities, often meshing one into another, sometimes rubbing against each other, could not be joined nor differentiated rightly according to the efforts of the individual groups, were it not for the existence of an organization-in-chief for the whole country, representing the whole of agriculture in all its groupings. Such an institution is the Union of Agricultural Organizations. This Union represents the interests of all of the agricultural organizations before the Central authorities, autonomous and social institutions, and before the international forum. It takes the initiative in the economic policy of the country, and calls together general economic conferences.

7. AGRICULTURAL LABOR

Workmen's relations have undergone serious changes in Poland since before the war. The decisive change in conditions of labor and wages first became apparent in the year 1919. The pre-war individual contract of workmen was superseded by collective agreements. Since these agreements were not always brought to a conclusion, often conflicts arose which led to general stoppage of work. In order to

mitigate the losses of production arising therefrom, the Government edited in 1919 a Statute regulating the form of contracting collective agreements between the delegates of the agricultural producers' associations of the first part and the delegates of the workmen's unions of the second part. In the western Regions, analogous regulations, based on German Law, were in force. In the beginning, the Statute of 1919 was binding in only a part of the country, but with time it spread wider and wider, and today is applied over the entire State.

CLASSES OF WORKERS: In differentiating the types of agricultural workmen, two standpoints may be taken. From the point of view of kind of agreement, there are: (1) regular workmen, contracted for the whole year, from April 1 to March 31, (2) seasonal workers, and (3) day labor. From the point of view of kind of work and earnings there are workmen contracted for the entire year, whose wages are paid in kind¹ and in a small amount of money. These workmen send their children or other members of their families to work on the estate, and the following type of workmen is evolved therefrom: (a) help, which is paid in cash and in kind; (b) workmen in possession of their own house and even farm, who contract for the year (excepting the very few days necessary for work at home) for wages in kind and in cash; (c) seasonal workers, hired for the period of most intensive work, and paid relatively high wages in view of the instability of their employment; (d) workmen obtaining complete board; and (e) workmen who come to work irregularly by the day, for digging or reaping and who receive pay in cash on the basis of contract work.

ESTATE: These different kinds of workmen are all found, with the exception of the boarding group, on the estate; while in the small holding the boarding group is predominant. Estate labor, especially the regular workmen of class (1) above, is expensive (totaling, 1929, 1,500-2,200 zl. annually in different Regions) but the strong bonds tying them to the domain (their family, and what is practically their own little enterprise), guarantee execution of work on a relatively high level of quality and efficiency.

SMALL FARM: The workmen on the small holding are very much poorer material. They consist mainly of single men and girls. With hardly anything binding them to the farm, they readily shift from place to place. They are poorly remunerated (collective agreements do not apply on the small holding), and their work is not on a high level. In this respect the large peasant holdings are worse off, since supervision of the workman engaged thereon is insufficient. The post-

¹ Housing, grain, fuel, keeping of 1 or 2 cows, potato-ground.

war cost¹ of labor has risen, though in unequal degree in the different Regions. The greatest rise undoubtedly has been in the central Regions.

SOCIAL INSURANCE: The so-called social taxes were a factor in the increase of labor costs. The system of administering them differs. They have been most fully developed in the western Regions, which in the period before the War were subjected to the very ample German social jurisdiction. The following classes of insurances are actually obligatory in these Regions: (1) against sickness, (2) against accidents during work, and (3) against invalidation and old age. In the southern Regions there is organized compulsory insurance against accidents and sickness; in the central and eastern Regions only against accidents. The lack of proper insurance in these parts is made up for by the landholder himself bearing the cost of medical assistance to the workmen and their families; and in the event of the death of laborers he is obliged to pay the family a certain sum for funeral expenses, and furnish sustenance for six months. These duties, however, are in total less expensive than the dues of the insurance institutions.

The amount of social insurance in the whole country is estimated at 32 million zloty. According to the statistics of the Western Poland Chamber of Agriculture, the social taxes of the estates in the Poznań Region were respectively, in 1928-29 and 1929-30, 21.06 zloty and 21.53 zloty per ha.

8. POST-WAR TRADE POLICY

The trade and price policy of agricultural products during a short post-war period had a marked one-sided tendency of catering to the interests of the consumer. Thus, various means were used to effect this end, e.g., contingent and maximum prices, export duties on or prohibitions of certain products, milling restrictions, etc.

SURPLUS: During several years after the War there was anxiety as to whether Poland could be self-sufficing in products of common mass consumption. In a relatively short time, however, the agriculture of the country was reconstructed and, in spite of many obstacles, went on its way of intensification. As a result, export surpluses of varying amounts were reached in almost every branch of agricultural production, and thereby agriculture became increasingly dependent on the possibility of export and prices abroad. And when the first

¹The daily cost in zloty 1926-27 on farms around Warsaw was: class (1) 5.19, (2) 3.71, and (3) 2.49.

symptoms of economic crisis appeared, the economic policy of the country underwent a radical and basic change; from then on it went in the direction of abetting as far as possible every field of agricultural production. In this new orientation were organized tariff protection, refund of export duties on a series of agricultural articles, intervention for grain purchase on the same market, and modification of milling restrictions and standardization.

PROTECTION OF GRAIN: The following seven means are used for the protection of grain production: (1) Import duties were introduced in the Autumn of 1928.¹ (2) Refund of duty on exports of grains and flour were brought into effect on November 16, 1929.² (3) Government organized the purchase of grain on the home market in order to insure full effect of the duty refunds, Grain Establishments of the State functioning to this end from August 1, 1930. (4) The Union of Grain Exporters has been created to regulate grain export. Having the privilege of issuing export certificates, it can influence the form of export and police it quantitatively and qualitatively. The working costs of the Union carried by fractional charges on export certificates is not, therefore, a trading institution, since it serves merely to rationalize the export of grain. (5) The modification of the milling restrictions were made to apply from April 1, 1930. (6) The rye agreement with Germany, concluded in February 1930, on the basis of which the amount and prices of rye exported by sea to the northern markets has been fixed for both countries. This agreement expired in the middle of 1931. And, (7) by reason of the expiration of the agreement with Germany, the Union of Grain Exporters jointly with the Grain Establishments of the State organized the Polish Bureau of Grain Export for the purpose of concentration of the grain export.

FLAX: The flax export being insufficiently organized, on June 1, 1930, duty refunds were introduced, 10 zt. per 100 kg. of hackled flax and 5 zt. per 100 kg. of hackled flax tow.

LIVESTOCK: In the livestock and animal products trade, the following steps were taken: (1) As a means of organizing hog export, in March 1929, an export duty of 30 zt. per animal was set, and only those transports were freed of duty which were accompanied by certificates issued by the newly established Syndicate of Hog Exporters.

¹ At present, early 1932, these are per 100 kg.: 25 zt. for wheat, 17 zt. for rye, barley and oats, 37 zt. for wheat flour, 25 zt. for rye and other flours, 32 zt. for barley meal, 36 zt. for their meals, 36 zt. for herculo and champion, and 36 zt. for malt.

² At present the refunds per 100 kg. are: 6 zt. for wheat and rye, 4 zt. for barley, 12 zt. for barley meal and malt, 10 zt. for the higher grades of flour, and 8 zt. for inferior quality flour.

This institution subsequently took over management of cattle export, and finally that of sheep. Decision in the matter of export contingents to be located in the various markets was entrusted to the Agreement Commission, made up of 4 delegates from the Syndicate and 5 from the Union of Agricultural Organizations. (2) A duty refund was granted on exports of smoked and cured meat and meat products, 15 zt. per 100 kg., from January 21, 1920, and 25 zt. from October 1, 1931; and on bacon of standard grade, a duty refund of 25 zt. per 100 kg. (lowered to 20 zt. October 1, 1931).

Simultaneously the Union of smoked and cured meat producers and exporters and the Bacon Industry Union were created. In addition, on October 1, 1931, a duty refund of 10 zt. per 100 kg. was introduced for pig, calf and lamb meats. In order to prevent export of impure butter, on December 1, 1919, a very high export duty of 600 zt. per 100 kg. was placed on butter; whereas butter shipments marked for export which obtained certificates from the proper authorities were freed of duty. In July, 1929, a duty refund of 6 zt. per 100 kg. was established (formerly 20 zt.). Lastly, on April 1, 1931, so-called "small-standardization" of butter marked for export describing the packing thereof, became obligatory. This is a transitory stage to regulating export by definite standardization statutes, after the results of the "small-standardization" become apparent.

In the egg trade, the standardization Statute of 1928 is in force. It involves an export duty of 200 zt. per 100 kg., from which are freed transports answering the labelling, packing and quality requirements. Export duty on geese, 10 zt. per bird, may be avoided by presentation of certificate issued by the Union of Poultry Exporters. For protection of home production of animal and vegetable fats, on May 8, 1931, various import duties were placed.¹ In 1931, the export of seed potatoes was regulated so as to assure delivery of guaranteed, clean and healthy tubers.

SYNDICALIZATION: It must be remembered that export duties and duty refunds on export of Polish agricultural products are in force almost exclusively for the purpose of trade organization, and serve either to centralize export or to create standards for qualified export. The present Governmental policy aims at syndicalization of agricultural export by means of facilities granted to the organized export at the cost of wild, individual foreign trade. This latter trade

¹ Import duties on rape, poppy, mustard, flax and hemp were raised to 5 zt. per 100 kg.; on ground nuts to 7.50 zt. per 100 kg.; on margarine and edible fats to 100 zt. per 100 kg.; and on sunflower, rape-seed, linseed, and poppy-seed oil to 85 zt. per 100 kg. In 1930 the import duty on fresh black fat was set at 80 zt. per 100 kg.; on smoked and cured black fat, 120 zt. per 100 kg.; and on lard, 100 zt. per 100 kg.

has many unfavorable characteristics, and takes place, in livestock and grain as well as in other products, largely outside the usual channels of the Exchange.

GRAIN EXCHANGES: There are five Grain Exchanges (Warsaw, Poznań, Kraków, Lwów, and Lublin), and one Meat Exchange (Warsaw). These Exchanges have not yet shown real activity; they have not been able to draw together a sufficient turnover, in spite of the tax facilities offered the merchants transacting their business on the Exchange. According to calculation of the Ministry of Agriculture, the total turnover of three Exchanges (Warsaw, Poznań, Lwów) in the years 1927 to 1930 was respectively, 0.5, 2.2, 2.0, and 3.9 of the total estimated trade turnover in the country. During the first 8 months of 1931, the relation was 13.8%, and the rise may be accounted for by the turnover tax facilities granted Exchange transactions. There is, however, as yet too little interest shown in the Trade Exchanges, and the importance of organized commerce is underestimated by the agricultural population.

The rail freight rate tariff is conceived on the differential system, where the rate decreases with the increase of haul. Carload shipments are of course relatively cheaper than other kinds. All goods are divided, depending on the price of the article, into 21 classes of carload and 5 classes of other shipments, and their rates are calculated accordingly.

The tariff is theoretically uniform for imported and exported goods and goods in home trade. It foresees, however, facilities in the form of extraordinary tariffs. They favor, depending on the existing economic needs of the country, import, export or the domestic transport of certain goods, in the latter case differentiating distances, and delivery to or shipments from factories. In particular a series of facilities have to do with export and import through the Polish ports. A large part of freight tariff formulae deals with the transport of agricultural and forest products. Since there is no need of import of these products, there being a surplus over domestic demand, the tariff contains a series of export facilities, especially for the districts farther from the western boundary and the sea. The tariff also gives considerable privileges for transport of land produce from the output centers to the places of processing and consumption.

In order to foster fabrication in the neighborhood of the place of production, the tariff does not facilitate potato transports for long hauls within the country; for the same reason the tariff for grains, flour and other mill products has been completely equalized. This levelling of the tariff was the result of compromise between agricul-

tural, industrial and consumption organizations, put into effect by the Freight Tariff of 1929.

RAILWAY BOARD: Social organizations, including agricultural, were given means of taking part in shaping the freight tariff by the creation of the National Railway Board in the Ministry of Communications. The Board is composed of representatives of general and economic district governments, and industrial and agricultural organizations. The capacity of the Board is only advisory, yet its opinion carries great weight. In addition to tariff questions, the Board considers the plans of new railroad constructions, the coördination of train with other services, and studies passenger traffic and special railroad appliances such as freight warehouses, refrigerator cars, livestock cars, etc.

PART II. PRODUCTION

I. CROP PRODUCTION

Poland is a strong agricultural power, and its output, especially of crops, is a considerable portion of world production. The dominant products are rye and potatoes, in which branches Poland has third place among nations (following Russia and Germany). In respect to other crops, Poland is somewhat further down in the international scale, yet still in the group of important producers. In oats and barley it has 7th and 9th place respectively; in that of sugar-beet, 6th; of hops, 8th; rape, 4th, linseed, 5th; and flax, 2nd place.

Polish agriculture, however, as has been pointed out, is far from uniform. Therefore any average figures for the country do not reflect the actual situation, since they cannot show the great differences of intensiveness and efficiency of farms in the various parts of the country, and the separate categories of holdings.

FALLOWS: At the end of the war with Russia (autumn of 1920), there were 3.5 million ha. of fallow ground in Poland, mostly towards the eastern border. In 1923, when for the first time agricultural statistics embraced the whole of the country, the area under plant cultivation was about 83.6% of the arable land. In succeeding years it increased rapidly, and at present is 91.3%. Fallow land is 8.7%, with the smallest proportion in the western and southern Regions, a somewhat larger in the central, and the largest in the eastern.

RANK: Among the different plants cultivated, grain is foremost. It covers 68.7% of the sown area, and is composed of rye (39.96%), oats (12.97%), wheat (9.75%), and barley (7.31%). The tuber-root

plants are 17.82% of the area under cultivation, of which 15.85% are potatoes, and 1.1% sugar-beets. Beans, etc., are 4.4%, oleaginous plants, 1.04%, and fodder plants, 7.36%, whereof there is clover (5.3%) and lupine (2.12%). The rate of increase of area covered by the various products is in each case different.

Of the main grains, the most marked rise was in wheat area, especially in 1929 and 1930, when the prices for this product were high in relation to rye and the fodder plants. The area under rye cultivation has not appreciably changed since 1925. That of barley and oats gradually and steadily rose till 1929, and fell slightly in 1930. Potato raising for a long time was constant, and only in 1928 slightly increased. Sugar-beet cultivation developed very rapidly up to 1929, but in 1930, in connection with the difficult situation of agriculture and a gradual lessening of the intensity thereof, there was a considerable decrease.

INTENSITY: The variations in the proportion of different crops cultivated on the large and the small holding are considerable. The small holding raises more grain (rye, buckwheat, millet, maize, oats), and potatoes, flax and hemp. On the other hand it allots a minimal amount of land for sugar-beets, and cultivates less of the tuber plants, wheat, pod-bearing plants, rape, fodder plants, and special cultivations such as field vegetables, hops, etc. Thus it is seen that the small holding falls behind the estate in raising the more valuable products requiring greater capital and labor investment. In other words, the intensiveness of field farming declines on the small holding. (See Table VI, Appendix.) This is further corroborated by smaller yields. Mathematically expressed, the efficiency of the small holding in 1930 was less by the following percentages: for grain 15-26%, potatoes 24%, sugar-beets, 15%.

There is differing efficiency and intensiveness in the different parts of Poland. Listing the four main cereals (wheat, rye, barley and oats), potatoes and sugar-beets, the highest level is reached in the western Regions; and in declining order follow the central, southern and eastern Regions. The yields of grain crops are almost twice as high in the Poznań Region as in the Wilno, Nowogródek and Polesie Regions; the potato and sugar-beet crops are also considerably higher. (See Table VII, Appendix.)

Crop production during the years following 1918 made marked progress. Many factors are responsible, the more important being more careful soil cultivation, the popularization of selected seed grain, better use of manure, and increased use of artificial fertilizer (up to 1929-30).

The area of certified grain was in 1924 about 11,000 ha.; in 1925, 15,000 ha.; in 1926, 13,600 ha.; in 1927, 17,200 ha.; in 1928, 28,900 ha.; in 1929, 27,700 ha.; in 1930, 19,200 ha.

FERTILIZERS: The utilization of artificial fertilizers increased equally rapidly, rising from 0.4 kg. per ha. production land to 50.2 kg. in period 1919-29. In 1914 it stood at 62.1 kg. The break in the continuity of the rise in 1929-30 and subsequent decrease in 1930-31 resulted from the low prices of agricultural products latterly obtaining.

Gardens and orchards cover some 530,200 ha., of which orchards occupy about 65%. In this area are about 600 ha. of fruit and ornamental tree nurseries, and about 1,000 ha. for seed raising. The fruit crops are estimated at approximately 94,250 T. of apples, 33,500 T. of pears, 25,100 T. of plums and 47,100 T. of cherries. The crops of peaches, apricots and walnuts are much less.

2. FORESTS

Forests in Poland cover an area of 8,358,000 ha. They differ in the various parts of the country as a result of different climatic conditions. The coniferous woods are dominant. The most numerous is pine (about 60%), abundant throughout the country with the exception of the eastern Carpathians and a portion of the Wołyń Region. Spruce (12%) is found in two tracts: the southern in the extensive unbroken reaches of the Carpathians, and the northern. In the former this tree makes excellent saw-mill material, in the latter it is chiefly utilized as pulpwood. Fir (3%) grows in the southern tract. Oak (5%) is scattered over the whole country, excepting the Carpathians and the northeastern Regions. A large quantity of valuable oak is found in the Wołyń Region, where it is about 25% of the total. Of the remaining varieties there is a considerable amount of beech, alder, aspen and birch. Mixed in with other species there are some plane-tree, maple, elm, ash and larch.

The system of forestry generally conceived in Poland is that of the natural forest, strong, healthy and self-protecting. Artificial forests are met with mainly in the western Regions. The natural timber accretion per year per ha. in State forests is about 2.85 m.³, on the large private properties 2.42 m.³, and on small holdings 1.62 m.³. The State forests also are ahead of the others in timber quality. They produce 50-60% of useful timber; in large private forests the proportion is 49.8%, and in the small holdings 25%. The total yearly growth is estimated at 21.5 million m.³, of which 11 million m.³ is useful timber, and 10.5 million m.³ becomes fuel.

The quality of pine and spruce in Poland is in general very good. Both these trees are remarkable for strength and dimensions, especially in their natural habitat, the spruce in the Carpathians and the pine in the eastern wilderness. The oak is also valuable, in particular that of the Wołyń Region, as excellent veneer, stave and carpenter's material.

3. ANIMAL PRODUCTION

Livestock in Poland has been increasing greatly in recent years. A summary of livestock is given in Table 3.

TABLE 3. LIVESTOCK IN THOUSAND HEAD

PERIOD	HORSES	CATTLE	PIGS	SHEEP	GOATS
Pre-War	3,496	8,664	5,487	4,473	...
9/30/1921	3,290	8,003	5,287	2,193	...
11/30/1927	4,127	8,602	6,333	1,918	...
6/30/1929	4,047	9,057	4,829	2,523	...
6/30/1930	4,103	9,400	6,047	2,492	227
6/30/1931	4,123	9,782	7,314	2,594	238

If the present amount of livestock in Poland be compared with the pre-war or even immediate post-war state, it becomes apparent that far-reaching changes have occurred. During the War there was close to a calamitous fall in sheep numbers when most of the sheep breeding stations were destroyed. During the following ten-year period there was a very marked rise in livestock numbers. Since 1927, the horse situation has kept constant, cattle numbers have steadily increased, while the number of pigs has fluctuated. Sheep numbers have alone been low. The increase of livestock has been greatest in those parts of the country where war devastation was most sorely felt, i.e., east of the Vistula and to the southeast.

The numbers of different kinds of livestock (on the animal unit scale)¹ per 100 ha. of productive land, cited in Table 4, gives an idea of the numerical density of the animals in various Regions.

HORSES: The relatively large number of horses does not indicate greater breeding productiveness. The Polish horse is lighter than in the countries to the west, and is, therefore, a weaker traction unit. Moreover, the peasant farms as a rule keep too many horses, which decreases the efficiency of the farm. Further reasons for the large

¹This calculation is made according to the following key: horses and cattle, 1 animal unit; colts and calves above 1 year, $\frac{2}{3}$; colts and calves below 1 year, $\frac{1}{4}$; hogs, $\frac{1}{4}$; young pigs, $\frac{1}{10}$; suckling pigs, $\frac{1}{20}$; sheep and goats, $\frac{1}{10}$; lambs and kids, $\frac{1}{20}$.

TABLE 4. LIVESTOCK DENSITY
(In animal units per 100 prod. hectares)

STATE AND REGIONS	HORSES	CATTLE	PIGS	SHEEP	GOATS
POLAND:	15.2	30.4	2.7	0.8	0.1
Central:					
Warsaw	14.5	28.6	2.4	0.2	..
Łódź	15.2	33.0	2.2	0.2	..
Kielce	15.5	33.6	2.2	0.2	0.1
Lublin	16.9	28.7	3.4	0.3	..
Białystok	15.1	23.5	2.8	1.5	..
Eastern:					
Wilno	11.4	19.7	2.2	1.5	..
Nowogródek	13.4	23.2	2.6	1.7	..
Polesie	9.5	23.5	2.2	1.8	..
Wołyń	20.1	26.0	2.8	0.6	..
Western:					
Poznań	13.8	33.7	4.2	0.6	0.5
Pomerania	14.0	29.7	3.9	1.3	0.2
Silesia	13.5	45.2	4.5	0.1	1.6
Southern:					
Kraków	12.8	52.8	2.2	0.4	0.1
Lwów	19.9	42.5	2.2	0.2	..
Stanisławów	15.0	34.6	1.8	1.2	0.1
Tarnopol	21.5	31.2	2.7	0.5	..

horse population is the small utilization of tractors and automobiles, coupled with the sparsity, in certain parts, of rail, road and waterways. The greatest density of horse numbers is in the southeast, where horse-breeding, according to the opinion of experts in this branch, has the best conditions.

As has been stated, Poland is a country of light horses, though in the western Regions the big draft type prevails. In the central and a part of the southern Regions the large holdings keep a lighter type of half-bred English horse; in the small holding a heavier horse and the local common animal. In the eastern Regions the so-called "Konik" (pony) prevails, i.e., a small, tough beast, which is much in demand in the mines of western Europe.

In the southern Regions horse-breeding is tending towards thorough-bred standards (English and Arab); in the hills the mountain pony is found, a small, very strong pack animal. The first place in breeding stations is occupied by the half-bred English horse, and second place by that of the thorough-bred English (the number of half-bred brood mares is about 700). The breeding of pure-bred Arab horses is less developed and the number of mares is 120. For the

purpose of improving the blood quality there are the National Studs and Depots of Stallions. On April 1, 1931, they contained 1,516 stallions distributed among 630 breeding stations, 231 mares and 321 colts.

On January 23, 1925, a Statute concerning State control of stallions and the register of brood mares was issued. This Statute decrees that stallions used for mating with privately owned mares must have a license and are subject to State control. Brood mares are also under State control and may be mated only with State Stallions or by licensed stallions. The State also sets a premium for 200-300 private stallions per year.

CATTLE: The most popular breeds of cattle are the Holstein-Friesian, the Red Polish, and the Simmentahl. The Friesian, a breed developed as a result of importation of a considerable number of bulls of Dutch and German origin, is acclaimed in Poland. This breed may be divided into several kinds, depending not only on origin, but also on the natural and economic conditions which influence its usefulness. It is most numerous in the western, central and a portion of the southern Regions, where the milk type prevails (with the exception of the Poznań Region which goes in for the dual-purpose). In the eastern part of the southern Regions, the Simmentahl prevails.

In eastern parts, the Polish Red cattle predominate. It was only at the close of the last century that this breed became the object of rational zoö-technic effort, the result of which was a marked increase in milk productivity. The Red breed is most suitable for development in the milk line, owing to a butter-fat character. It may also be utilized for meat, because it fattens easily and its meat is of excellent flavor. The natural good health of this breed, developed through centuries under natural conditions and use of every kind of fodder, makes it ideal on the more primitive type of farm.

In order to fix and improve the cattle breeds, a Statute of State control of bulls was issued on October 28, 1925. It decrees that privately owned cows may be mated only with bulls certified as suitable both from the point of view of race and individual for the given breeding district.

REGISTRY: Although the cattle productiveness in Poland is in general lower than in western Europe, there is steady improvement in this respect. An indication thereof is the increasing number of entries in the pedigree ledgers of the Breeders' Association. In 1921 there were 15,047 Friesian cattle registered, 1,800 of Polish Reds and 293 Simmentahl; in 1930 the respective figures were: 34,208, 15,066 and 985.

MILK YIELD: One of the influences tending to raise milk productivity are the milk recording societies, of which there were 719 in 1930. The result of their activity was that the annual milk yield of cows under control rose from 2,496.2 kg. in 1921 to 2,778.8 kg. in 1927-28; and the per cent of fat from 3.29 to 3.49. The constantly rising efficiency of cows was in large measure fostered by the dairy farms, especially the coöperative dairies.

DAIRY FACTORIES: In 1929 the number of dairy factories in Poland was 4,176, of which 1,398 were affiliated coöperative organizations and 406 independent (wild) coöperative societies. In that year the amount of milk processed was 911,849,038 kg., of which 65.0% went to the coöperative dairies, 6.7% to the "wild," and 28.3% to the private ones. The average daily work of the affiliated coöperatives was 1,170 kg. of milk, that of the "wild" 400 kg., and 300 kg. the private. Thus the superiority of the coöperative type is apparent. In this branch there is the same lack of uniformity as in other kinds of agricultural production in Poland. In western Regions the average yearly business of all factories was 675,807 kg. of milk, in the central it was 179,734 kg., in the southern 89,632 kg. and in the eastern 92,073 kg.

COÖPERATIVES: It is instructive to note the rapid rise of the dairy coöperative. An investigation which embraced 1,334 affiliated dairy coöperatives gave the following numbers of newly created dairies: in 1881-1890, 80; in 1901-1913, 115; in 1914-1924, 152; and in 1925-1929, 987. The influence of dairy coöperatives on cattle breeding results in better selection and more rational feeding of cows, and consequent increase of milk capacity and percentage of fat in the milk. This last is important because the dairy factories are engaged mainly in butter production.

Hogs: The greatest concentration of hogs is in the western Regions. Here and in the Kraków Region the early maturing porker prevails. In the northeastern Regions there are mainly pigs of local breeds. In the rest of the country most of the pigs are the local Big White, crossed by boars of the Big White English breed of the bacon type. In general hogs are raised for bacon and meat production. The conditions for hog raising are very favorable in Poland, owing to the high crop production, especially potatoes, and to the prevalence of the small holding, on which pig raising has better chances of success than on the large holding. The Hog Breeders' Unions, organized by agricultural organizations and chambers of agriculture and supported by the Government, are interested in the production of breeding stock, for the purpose of purifying the breeds. This they accomplish by

allocating breeding stations of pedigree boards and by organizing peasants' pure bred pig herds.

Sheep raising in Poland is inconsiderable. Moreover the low yields of wool and meat relegate this branch of production to the bottom of the list. The greatest density of sheep is found in the eastern and western Regions. There are two basic types of sheep in Poland: the Merino sheep and the local type. Merino sheep, mainly of the long-wooled type (Merino-précoce and Rambouillet) is dual-purpose, viz., meat and wool, and is raised in the western Regions. Of the local types, the dual-purpose "Swiniarka" is kept in the central Regions, the pelt producing sheep "Wrzosówka" in the eastern Regions; the milk-sheep "Cakiel" (also for pelt) are in the southern mountains. There is also a series of centers breeding pure bred and grade Karakul sheep.

SMALL VS. LARGE HOLDING: The animal production on the small holding is greater than on the estate. According to the census of 1930, the large holding had 11.5% of the horse population, 8.9% of the cattle, 7.9% of the hogs, 17.6% of the sheep and 3.1% of the goats. There are, however, wide differences in this respect in the different Regions. (See Appendix, Table VIII.) It is characteristic that a relatively large amount of livestock, especially of sheep, is found on the large holding in the western Regions. In the Poznań Region, in 1928-29, there was the following number of animal units per 100 ha. of productive land: on peasant farms, 502, estates (together with servants' cattle), 29.1, and estates (proprietors' stock only), 21.0. The tendency towards numerical increase of livestock per ha. as the size of the holding decreases is strikingly apparent also for the peasant-farm. (See Appendix, Table IX.)

The estates are clearly superior respecting the level of animal husbandry. They are almost the sole pedigree breeders, and own the majority of registered animals. The productiveness thereof is also unquestionably greater on the estates. For example, the report of the milk recording societies of the central Regions in 1929-30 gives the average yearly milk yield per cow on the estates as 3,075 kg. and the average fat yield as 102.16 kg., while on the peasant farms the corresponding figures are 2,416 and 84.6.

OUTLOOK: In connection with the numerically low state and medium productiveness of utility stock, the question naturally arises whether this situation can be remedied, or whether it is the result of factors stubbornly limiting the development and improvement of breeding. Fears of the latter condition are groundless. The ratio of meadows and pastures to arable land from the breeder's stand-

point is favorable; it is 1:2.84. The large proportion of land under grain, potatoes and other tuber plants supplies great quantities of straw and succulent fodder, while the agricultural industry (especially the sugar and distilling) provides valuable waste-products. Moreover, the utilization of cattle primarily for milk leaves excellent feed (whey) for hogs. Other elements also make for the development of animal breeding: Polish soil requires manure, milk cattle are a source of steady income to the farmer, hog raising is one of the main sources of the peasant's income, and the preponderance of the small holding is favorable for mass breeding.

The hitherto slow development of breeding is the result of causes which in time can be remedied. One of these unfavorable influences is the small professional knowledge of the peasant farmer, and the consequent inefficient feeding of animals. Another is the lack of sufficiently well-organized agricultural trade in animal products, the consequence of which is that Polish products often obtain a low price abroad. Further factors which must be removed are the necessity for improving a large part of the meadows and pastures, and the faulty agrarian structure of certain parts of the country.

Poultry raising plays a very important national part. The present resources are estimated at 40 million chickens, 8 million geese and 2.2 million ducks, turkeys and guinea-hens. Poultry is raised pre-eminently on the small farms. The largest numbers are found in the southern Regions, though considerable numbers are also kept in the west. Poultry raising is of an extensive character, hence the birds are strong and resistant. The utilization of hens is almost exclusively for egg production, which amounts to a total of 2.2 billion eggs per year. Of the different breeds, the Polish Green-Leg (Zielononozka), spry and of considerable egg-laying capacity, is noteworthy. Geese and ducks are raised for meat and feather purposes. The native goose is easily and rapidly propagated, and cheaply fattened.

• Fisheries, totally ruined during the War, have not yet been fully reëstablished, in spite of favoring natural conditions. The fresh-water fish yield is estimated at 20 million kg. per year, of which 7-8 million kg. are from pond farms, and the rest from lakes and streams.

4. AGRICULTURAL EXPORT TRADE

All the characteristics of the Polish farmer and of his farm production described heretofore find expression in foreign agricultural product trade. Export is characterized primarily by the fact that Poland ships a relatively large quantity of raw materials, and a small

quantity of completely finished products. The exported articles are not sufficiently standardized, hence there is difficulty in satisfying the more fastidious markets, and thus prices obtained are unsatisfactory. It cannot be denied, however, that during late years there has been real improvement in both of the above respects. It is the result, on the one hand, of a series of governmental regulations (standardization) and, on the other hand, the steadily rising expert knowledge on the part of agriculturists as a whole.

WHEAT AND RYE: In the matter of wheat and rye, Poland is in general self-sufficient. The balance of wheat trade has been usually on the import side; the considerable export surplus in 1930-31 is accounted for by the larger area sown owing to relatively high prices for this grain in the preceding years. In normal years, Poland has sufficient rye to satisfy her home needs. In years of good harvest, there is an export surplus. No small influence on the export balance is the price of the grain, since that decides the quantity consumed by the peasant farmer.

BARLEY: One of the regular export articles is brewing barley. The rest of grain export may be characterized as trade in fodder. There is always a surplus of barley, of rye used in large measure abroad for animal feeding, and of considerable quantities of bran. Of the other grain, buckwheat, there is an inconsiderable export.

CORN IMPORT: Of the grains raised in Poland, only maize is imported in considerable quantities.

SEEDS: Potato export, despite the fact that the possibilities of surplus production in Poland are very great, is not large, quite out of proportion to the crop. This branch of trade could undoubtedly be stimulated, were the Polish farmers to adapt their production to the demands of the foreign consumer in respect to quality and varieties. A favorable symptom lately has been the increasing export of seed-potatoes to Belgium and France. Of the other tuber plants, the sugar-beet export is important. Other export items (with few exceptions) are the seeds of pod plants (beans, peas, lupine, vetches, clover, seradella), rape and sugar-beets. Clover and sugar-beet seeds are especially important. The export surplus of clover seeds is small, in spite of the fact that the Polish seed is sought for, owing to its frost-resistance. Sugar-beet seeds are of high quality, and therefore win in competition in foreign markets. Polish seeds in general, owing to the more severe conditions under which they are cultivated, are pre-eminently resistant to cold and frost. This quality creates a strong demand for them in the deficient seed markets which have cold weather to fear.

Poland imports a limited quantity of fodder plants, grass and linseed from Russia. Since the imported goods are less valuable than the domestic product, the payment balance remains favorable.

FIBERS: The production of fibre plants in Poland constitutes a large portion of the European output, yet the export surplus of flax and hemp is insignificant, for the majority of the crops is absorbed by the home industry. The work carried on at present in the direction of rational organization of fabrication and trade will undoubtedly raise the export of these products, especially regarding their value. The export of hops has every chance of success, since there is abundance of labor in Poland, a cardinal element in hop growing.

ANNUAL EXPORT: In the branch of animal product trade, an unusual phenomenon is the fact that while in certain countries the export of animal products is accompanied by import of fodder, in Poland the reverse holds true. The chief export item is live animals, in particular hogs; meat export is relatively smaller. During late years, however, there has been a definite decrease of live export in favor of bacon and meat export.

Dairy products export is not great, although, as has been mentioned, milk production is the main purpose of cattle breeding. Export of butter is relatively the largest, and is steadily increasing. This trend is undoubtedly influenced by the rapid development of dairy coöperatives. Cheese export is also steadily rising, although at present it is a very small item in the total foreign turnover.

EGGS: The second important position in animal products export, after hogs, is held by eggs. This article hitherto has not been obtaining good prices; standardization and raising of quality of the eggs is now being forced. Poultry, especially geese, are a large export element; the number sent out is steadily increasing.

Of the other animal products, the following should be designated: down, feathers, hair and bristle, and the lighter raw hides (calf).

IMPORTS: Among the more important animal product imports may be listed considerable quantities of wool, the heavier raw hides, fish, and till recently, animal fats. The import of fish is the result of too low tariff protection, for there is an ample supply to satisfy the whole demand for this product.

FOREST PRODUCTS: There is a large store of raw and semi-finished timber for export, in particular round wood and logs, plank, deals, battens, pit-props, pulpwood, poles and ties. During the last few years this export has fallen off, owing to shrinkage of demand in the foreign markets. The state of forestry in the country will shortly, however, not permit any great development in timber export.

SUMMARY: In spite of the deficiencies already discussed, agricultural export is steadily gaining in quality, and is becoming an increasingly strong foundation of the total export of the country. If, besides the purely agricultural export, is counted the export of raw and semi-finished timber and the products of the agricultural industry (flour, sugar, alcohol, potato flakes, potato flour and starch, bran, oil-cake, molasses, etc.), their total values for the respective years from 1924-25 to 1930-31 were: 49.9, 58.1, 53.9, 60.4, 57.1, 56.3 and 51.7% of the total export of the country, while the respective annual values of the strictly agricultural articles were, 24.6, 33.8, 25.6, 30.4, 32.8, 33.7 and 33.7% of total production.

An element deserving notice is the steady increase of animal product export, the respective percentages of which are, over the same period: 16.4, 18.5, 22.1, 21.8 and 25.1%. The agricultural import for the period is far less than the export. It has declined in value and become an ever smaller percentage of the total import, viz., 18.9, 7.8, 18.1, 15.3, 10.2, 9.6 and 9.5%.¹

5. BOOKKEEPING RECORDS ON FARM BUDGETS

The discussions and comparisons in these pages have given a certain conception of the efficiency and intensity of Polish agriculture as a whole, and in the different Regions. It would become clearer still if supplemented by the characteristic statistics coming direct from peasant farms, based on bookkeeping, shown below in Tables 5 and 6. In addition, Table 7 below contains analogous data for the small and the large holdings in the Poznań Region in the year 1928-29.

These data, covering the whole country, are found only with regard to the small holding.² For the large holding, only data covering the Poznań Region in 1928-29 are available. It must be kept in mind that these data do not characterize agriculture in general, since the structure of the peasant farms is often very unlike that of the estate.

In Tables 5 and 6, the more important data regarding the small holding in the years 1926-1930 have been collected, namely: gross returns from plant and animal production, farming expenses, agricultural, social and net income, and earnings of the members of a peasant family³ — all in terms of farm area.

¹ Poland's total imports in million zł. were: 1927-28 3,297.1; 1928-29 3,232.0; 1929-30 2,529.6; and 1930-31 1,836.7. Exports for respective years: 2,500.0; 2,604.0; 2,746.0 and 2,125.0.

² Statistics of the Division of Small-Farm Economics of the National Scientific Institute of Pulawy.

³ Small-farm bookkeeping, and statistics based thereon, are conducted by the method of Prof. E. Laur of Zurich.

TABLE 5. ANNUAL EXPENSES AND INCOME OF VARIOUS SIZED SMALL HOLDINGS
(1926-1930)

SIZE OF FARM IN HA.	ZLOTY PER 1 HECTARE OF PRODUCTIVE LAND					
	2-3	3-5	5-10	10-15	15-30	30-50
Total gross returns	953.88	780.39	603.89	533.38	440.56	406.14
Gross returns from plant production	349.82	280.13	240.23	226.12	194.53	191.25
Gross returns from animal production	551.72	464.58	339.52	286.87	230.13	191.93
Farming expenses	795.57	614.44	451.10	362.66	295.98	259.11
Agricultural income	549.41	425.08	327.14	279.92	208.59	165.38
Net income	158.31	165.95	152.79	170.72	144.58	147.03
Day-earnings per adult member of family	1.21	1.27	1.53	2.07	2.25	2.29

TABLE 6. GROSS RETURNS OF PLANT AND ANIMAL PRODUCTION
(In per cent of the total gross returns)

SIZE OF FARM IN HA.	2-3	3-5	5-10	10-15	15-30	30-50
Total gross returns	100.0	100.0	100.0	100.0	100.0	100.0
Gross returns from plant production	36.7	35.9	39.8	42.4	44.2	47.1
Gross returns from animal production	57.9	59.5	56.2	53.8	52.2	47.1

In addition Table 7 contains analogous data for the small and the large holdings in the Poznań Region in the year 1928-29.

TABLE 7. EXPENSES AND INCOME OF SMALL AND LARGE HOLDINGS
(In zloty per 1 ha. of productive land)

SIZE OF FARMS IN HA.	5-10	10-15	15-30	30-50	5-50	ESTATES
Total gross returns	613.05	708.40	630.37	610.05	648.38	765.69
Gross returns from plant production	254.87	285.82	279.04	304.37	280.24	579.20
Gross returns from animal production	333.73	388.15	329.40	292.89	343.55	142.11
Gross returns from industrial production . . . . .	.....	.....	.....	.....	.....	32.14
Farming costs	595.32	600.01	515.14	440.76	545.13	646.79
Net income	17.73	108.39	115.23	169.29	103.25	118.90
Social income	362.60	384.38	328.63	345.38	351.13	376.74
Expenses on workers	344.87	275.99	213.40	176.09	247.88	257.84
Land and communal taxes	9.03	14.33	15.16	16.45	14.13	24.27
Taxes per ha. of the total farm area . . . . .	.....	.....	.....	.....	.....	16.73

In making use of the Tables, it must be remembered that the statistics regarding peasant holdings and the estate are not quite of the same order. Only the gross returns (divided into their different

elements), and, with certain reservations, the social income are comparable. The expense for work on the small farm can be only theoretically estimated since the proprietor and his family are in most cases the sole workers. Therefore the statistical positions into which these factors (farming expenses, cost of labor, net return) enter, are more or less empirical.

PLACE OF LARGE HOLDINGS: An especially interesting consideration is the part played by plant and animal production in the gross returns of various categories of holding. The larger the farm, the greater the percentage of income from products of the soil in the general gross returns. This phenomenon is striking in the comparison of the peasant farm with the estate. Since the material for small and large holdings is for one year and one Region only, generalization on the basis of Table 7 is unwarranted. With this reservation in mind it may be considered that both the efficiency and intensity of the large holding is on a higher level than that of the small holding. This is the more significant since the agrarian conditions in the Poznań Region are undoubtedly the most favorable in Poland, on which base the reverse might be expected.

RELATIONS TO NATION: As a further supplement to the picture of Polish agriculture, calculations of the value of agricultural production and returns therefrom are given herewith. The value of the national capital of Poland was calculated in 1926-27 at 137,463 million zloty (about \$15,445,000,000), of which 66,903 million zloty, or 49%, pertained to agriculture.

ANALYSIS OF NATIONAL INCOME: The value of agricultural production¹ in 1927-28 has been calculated (see Appendix, Table X), by two methods: (1) as full gross returns separately of plant and animal production, and (2) as gross returns calculated according to Prof. E. Laur. In the second case, from the total gross income is subtracted sowing seed, all fodder and bedding utilized by livestock and manure, thus arriving at the combined total returns of both plant and animal production.

The gross returns thus calculated, and especially by the second method, give an idea not only of the absolute value of agricultural production in Poland, but also of the component elements.

In the first place, a large share, 57.4%, falls to plant production, while that of animal production is 42.6%. The calculated returns at about the same time in Germany and Switzerland gave, respectively, 33.8% vs. 66.2%, and 20.7% vs. 79.3%.

Of the different product groups, the foremost is production of

¹ Calculated on the basis of price loco farm.

grain and tuber plants, milk and animal production, especially pigs and poultry. Other products, further down the scale yet still active in the formation of agricultural gross returns are: garden vegetables, timber, cattle and eggs.

POLAND'S FOREIGN TRADE: The figures in Table XI, Appendix, clarify and supplement all that has been said concerning the characteristics of plant and animal production and the main trend of Polish agricultural export.

6. SUMMARY

In concluding this chapter on the characteristics of Polish agriculture, the following condensed summary is given:

(1) Poland is a great agricultural power, and its production occupies a high place in the plant and animal production of nations.

(2) The character of this agriculture is not uniform, and this lack of unity takes two directions: (a) the intensiveness and efficiency of farms increases from east to west, and (b) large holdings are on a higher intensity and efficiency level than small holdings.

(3) The causes underlying this situation reach back to the pre-war period, sometimes very far back. The western Regions have the best agrarian structure, the most complete system of railroads and highways. Moreover, owing to intensive pre-war culture, the soil, though in its natural state of medium fertility, possesses an "ancient strength" which the agriculturists are careful not to weaken. The farms of the central Regions are in a less favorable situation, since their agrarian structure and system of communication are worse. The conditions in the eastern Regions are relatively the least favorable. The southern Regions, though they have an efficient system of communications, and fertile soils, are hampered by over-population on the farms and an imperfect agrarian structure.

(4) From the point of view of general and professional education, the agriculturists directing the large holdings stand very much higher than the small-holder farmers. Therefore in organization and exploitation of production factors, the estate is far in the lead. In certain attributes of character, however, such as persistence and ability of limiting his needs during hard times, the peasant folk are more gifted.

(5) In relation to the nations of western Europe, Polish agricultural production has certain traits of extensiveness, especially if the agriculture be taken as a unit. This is attested by the preponderance of plant over animal production, though the conditions for the latter

are favorable. Not only, however, is the share of plant production in the total gross income larger, but also the skill in plant husbandry is on a higher level than that of animal husbandry.

(6) Polish foreign trade is marked in the first place by export of raw material, while that of the finished product is smaller in comparison. Latterly, however, an important improvement has been obtained in standardization of agricultural products and perfection of trade organization, as well as in the increase of processed export product, such as bacon, meat and butter.

(7) Of the three production elements in agriculture, i.e., land, capital and labor, Poland possesses a surfeit of work-hands, and a dearth of capital. The lack of capital is the result of too little exchange between the majority of farms and the surrounding community.

(8) All the stated failings of Polish agriculture are easy to remove. The most important remedy is to begin at the roots by raising the general and professional education of small-farm proprietors, who occupy the greater portion of productive land. This work of education has bright prospects of success, for the Polish peasant is naturally intelligent, capable, industrious, persistent, and strongly attached to his land.

(9) Efforts in this direction were commenced with the close of the World War and Russian War. Suffice it to cite the work of rebuilding the agrarian structure: compulsory education; strong activity in the direction of establishing primary agricultural schools and extension service; the developments of the coöperative movement in the country; the work of the social, autonomous and governmental institutions toward raising the efficiency of the peasant farms; and, lastly, the economic policy of the Government supporting the interests of agriculture in every direction.

(10) Already marked progress during the decade following the end of the World War can be discerned. This progress relates equally to plant and animal productivity and is expressed in the steadily improved utilization of labor, the more accurate cultivation and care of plants, the better preparation of seed for sowing and wider use of selected seeds, the more careful use of manure, the more efficient feeding and better selection of animals, greater attention to the quality of the product, and lastly, in the growing understanding and adaptation to the needs of the market.

For all these reasons, the future of Polish agriculture may be viewed with strongest optimism.

APPENDIX

TABLE I. LABOR ON PEASANT FARMS OF DIFFERENT SIZES¹

SIZE OF FARM IN MORGAS ²	EQUIVALENT SIZE IN HA.	NUMBER OF ADULTS ON FARM	NUMBER OF HA. PER ADULT
Below 5	- 2.8	2.9	0.91
5-10	2.8- 5.6	3.1	2.44
10-15	5.6- 8.4	3.3	3.85
15-20	8.4-11.2	3.8	4.54
20-25	11.2-14.0	4.0	5.55
25-30	14.0-16.8	4.3	6.25
30-35	16.8-19.6	4.3	7.69
35-40	19.6-22.4	4.7	7.69
40-45	22.4-25.2	4.9	8.33
45-50	25.2-28.0	4.9	10.00
50-55	28.0-30.8	5.1	10.00
55-60	30.8-33.6	5.8	10.00
60-65	33.6-36.4	6.2	10.00
65-70	36.4-39.2	6.5	10.00
70-75	39.2-42.0	5.8	12.50
75-80	42.0-44.8	5.8	14.29
80-85	44.8-47.6	6.0	14.29
85-95	47.6-53.2	..	.....
95-100	53.2-56.0	5.2	20.00
Above 100	above 56.0	5.2	20.00

TABLE II. COMMASSATION, LIQUIDATION OF SERVITUDES AND COMMON
GROUNDS, 1919-30

YEAR	COMMASSATION		LIQUIDATION OF SERVITUDES		LIQUIDATION OF COMMON GROUND	
	No. of Holdings	Area in Ha.	No. of Holdings	Area in Ha.	No. Holdings	Area Ha.
1919	2,145	20,159	62	259	101	224
1920	1,666	14,926	192	543	187	407
1921	2,013	16,741	1,482	4,693	216	257
1922	3,489	28,842	1,142	4,714	189	136
1923	3,797	36,477	2,408	6,624	447	960
1924	3,771	32,337	4,021	12,872	994	1,491
1925	7,731	68,118	5,597	18,928	1,016	1,149
1926	17,491	145,524	12,406	42,861	2,123	3,554
1927	29,490	265,369	20,549	82,882	1,646	3,851
1928	41,076	325,087	49,746	108,873	918	1,126
1929	58,650	429,594	32,101	88,743	1,615	6,514
1930	70,769	509,668	38,615	103,182	5,938	8,762
1919-30	242,088	1,892,842	168,381	475,174	15,390	28,431

¹ Results of investigation of the agricultural association: Centralne Towarzystwo Rolnicze.

² 1 morgas = 0.56 hectares.

TABLE III. EMIGRATION AND RE-EMIGRATION

EMIGRATION	CONTINENTAL	OVERSEAS	TOTAL
1918 ¹	...	4,629	4,629
1919	804 ²	5,901	6,705
1920	14,183 ³	74,121 ³	88,304
1921	8,851 ³	107,449	116,300
1922	31,373	38,716	70,089
1923	72,020	55,401	127,421
1924	52,082	22,511	74,533
1925	42,709	38,449	81,218
1926	117,616	49,833	167,509
1927	89,427	58,187	147,614
1928	122,048	64,581	186,630
1929	178,132	65,310	243,442
1930	171,853	46,534	218,387
1931	64,229	11,771	76,000
Total ⁴	965,488 ⁴	643,453	1,608,841
Re-immigration	532,308 ⁵	150,959	683,263

¹ Nov.-Dec. 31. ² Only to France. ³ Calculated on the basis of visas issued by the Emigration Office, greater than actual emigration. ⁴ From January 1, 1919. ⁵ From January 1, 1924. ⁶ To which add for 1931: Continental.

TABLE IV. RAILROADS AND HIGHWAYS

REGIONS:	RAILROADS		HIGHWAYS	
	Per 100 km ² .	Per 10,000 Inhabitants	Per 100 km ² .	Per 10,000 Inhabitants
Central:				
Warsaw	3.7	3.5	13.5	19
Łódź	2.8	2.3	13.8	12
Kielce	3.1	3.2	10.5	10
Lublin	3.2	4.8	5.7	8
Białystok	3.6	8.9	7.9	19
Eastern:				
Wilno	2.9	8.4	1.3	4
Nowogródek	2.6	7.3	2.7	7
Polesie	2.1	10.2	1.9	9
Wołyń	2.8	5.9	2.9	6
Western:				
Poznań	9.2	12.4	22.6	30
Pomerania	10.7	18.7	26.7	46
Silesia	16.4	6.2	52.0	18
Southern:				
Kraków	6.5	5.7	30.8	26
Lwów	5.3	5.3	17.3	17
Stanisławów	4.2	5.7	20.7	28
Tarnopol	5.5	6.3	17.1	12

TABLE V. DEVELOPMENT OF COÖPERATIVE SOCIETIES IN 1924-29

YEAR	NUMBER OF COÖPERATIVE SOCIETIES	% OF ASSOCIATED COÖPERATIVE SOCIETIES	MEMBERS			SHARES	RESERVE FUNDS	DEPOSITS	LOANS
			Total Number	Agriculturists	% of Agriculturists				
			In 1000						
In 1000 zloty									
1925	12,409	...	1,764	765	43.4	28,678	34,025	39,038	285,548
1926	13,909	54.3	1,823	910	49.9	40,010	40,329	69,498	370,432
1927	15,729	56.3	2,174	1,276	58.7	64,235	55,731	137,720	786,531
1928	16,349	62.8	2,475	1,462	59.1	98,181	73,743	234,395	1,310,979
1929	17,476	64.3	....	....	....	....	....	....	....

TABLE VI. CROP YIELDS OF THE LARGE AND SMALL HOLDINGS
(In 100 Kg. per Ha.)

HOLDINGS	WHEAT	RYE	BARLEY	OATS	POTATOES	SUGAR-BEETS
Over 50 ha.	16.4	14.0	15.1	12.8	145	264
Below 50 "	12.7	11.4	11.2	10.3	110	225

TABLE VII. AVERAGE YIELDS OF THE MORE IMPORTANT CULTURES, 1926-30
(In 100 Kg. per 1 Ha.)

REGIONS	4 GRAINS	POTATOES	SUGAR-BEETS
POLAND	11.4	109.4	209.8
Central.	12.0	116	190
Warsaw	12.0	107	193
Łódź	12.9	128	198
Kielce	11.9	114	193
Lublin	12.7	126	179
Białystok	10.3	107	160
Eastern	9.2	90	152
Wilno	7.1	82	..
Nowogródek	9.1	111	..
Polesie	8.5	80	136
Wolyń	10.8	89	150
Western	15.3	124	235
Poznań	16.1	132	237
Pomerania	13.6	111	228
Silesia	13.7	115	191
Southern	9.7	101	189
Kraków	9.3	90	206
Lwów	9.3	99	190
Stanisławów	9.8	101	198
Tarnopol	10.4	117	182

TABLE VIII. LIVESTOCK ON LARGE HOLDINGS
(In % of the Total Number)

REGIONS:	HORSES	CATTLE	HOGS	SHEEP	GOATS
POLAND	11.5	8.9	7.9	17.6	3.1
Central Regions	11.0	7.5	5.7	18.2	2.7
Warsaw	18.9	12.6	10.1	69.5	7.1
Łódź	13.9	7.6	5.9	50.7	1.7
Kielce	9.1	5.1	3.7	34.9	1.9
Lublin	9.3	6.4	4.5	24.5	6.8
Białystok	4.4	4.8	3.4	2.7	3.5
Eastern Regions	5.4	5.4	4.5	3.9	7.5
Wilno	9.7	10.3	8.5	7.5	1.4
Nowogródek	6.8	7.7	5.9	3.3	4.8
Polesie	3.7	3.7	3.0	1.5	5.1
Wołyń	3.3	2.5	2.2	4.0	1.8
Western Regions	35.7	25.9	18.8	77.1	3.6
Poznań	39.3	27.5	22.0	84.3	5.2
Pomerania	32.7	27.4	19.4	71.8	4.5
Silesia	17.5	11.7	3.2	18.0	0.2
Southern Region	7.3	4.5	3.0	9.0	1.6
Kraków	6.4	3.0	2.5	3.5	0.7
Lwów	6.8	5.1	2.8	8.3	2.8
Stanisławów	6.2	4.8	3.0	12.0	2.2
Tarnopol	9.0	5.3	3.7	6.7	2.3

TABLE IX. AMOUNT OF LAND, EXCLUSIVE OF FOREST, PER COW ON
PEASANT HOLDINGS
(1929-30)

	SIZE OF FARM IN HA.					
	2-3	3-5	5-10	10-15	15-30	30-50
Land per cow in ha.	1.43	2.13	2.97	3.57	4.19	4.45
Livestock per ha. in zloty	397	358	294	262	246	233
Utility stock per ha. in zloty	367	302	233	200	186	173

TABLE X. GROSS RETURNS FROM AGRICULTURE, 1927-28
(In Thousand Zloty)

	GROSS RETURNS OF PLANT AND ANIMAL PRODUCTION	GROSS RETURNS ACCORDING TO THE METHOD OF PROF. LAUR
A. Plant production:		
I. Field plants	9,479,283.8	5,409,669.2
1. Grain — cereals	4,896,918.2	3,502,002.2
2. " — siliquous plants	234,978.3	119,090.5
3. " — fodder plants	166,190.4	146,314.4
4. " — oleaginous plants	97,803.6	78,342.5
5. Industrial plants	103,375.2	103,375.2
6. Tuber plants and vegetables	2,520,240.5	1,408,932.7
7. Hay	406,073.1	34,493.8
8. Straw	930,921.7	16,294.5
9. Plants left for fertilization	90,036.2	.....
10. Selected plant seed production	32,746.5	30,823.4
II. Meadows	932,634.0	.....
III. Pastures	102,408.3	.....
IV. Gardening	551,152.6	541,752.6
1. Fruit	101,151.8	101,151.8
2. Trees in nurseries	5,400.0	.....
3. Vegetables	440,600.8	440,600.8
4. Vegetable and flower seeds	8,000.0	.....
V. Forests	376,448.0	376,448.0
1. Timber accretion	355,828.0	355,828.0
2. Mushrooms and berries	20,620.0	20,620.0
PLANT PRODUCTION	11,445,926.7	6,417,869.8
B. Animal production:		
I. Milk	2,104,119.7	2,104,119.7
II. Animal growth	2,247,203.8	2,247,203.8
1. Cattle	442,030.8	.....
2. Hogs	911,268.3	.....
3. Sheep	26,644.3	.....
4. Goats	780.4	.....
5. Rabbits	6,000.0	.....
6. Multiplication of horses	86,720.0	.....
7. Poultry	773,760.0	.....
III. Eggs	323,862.3	323,862.3
IV. Wool	27,271.6	27,271.6
V. Apiculture	14,307.0	14,307.0
VI. Fresh-water fish	49,000.0	49,000.0
VII. Manure	899,850.0	.....
ANIMAL PRODUCTION	5,665,614.4	4,765,764.4
GROSS RETURNS (Laur System).		11,183,634.2

TABLE XI. POLAND'S FOREIGN TRADE

	IN MILLION ZLOTY							IN PER CENT						
	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31
Total export	2,139	2,111	2,477	2,500	2,604	2,746	2,125	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agricultural export . .	1,067	1,226	1,336	1,509	1,488	1,547	1,098	49.9	58.1	53.9	60.4	57.1	56.3	51.7
Vegetal products . .	175	322	200	201	278	327	182	8.2	15.3	8.1	8.0	10.7	11.9	8.6
Animal products . .	351	391	435	560	575	599	534	16.4	18.5	17.5	22.4	22.1	21.8	25.1
Agri. industry products . .	227	211	227	170	180	256	150	10.6	10.0	9.1	6.8	6.9	9.3	7.1
Raw and semi-finished timber . .	314	302	475	579	454	365	232	14.7	14.3	19.2	23.2	17.4	13.3	10.9
Total import ¹	3,265	1,303	2,471	3,297	3,232	2,529	1,837	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agricultural import . .	618	102	448	503	331	243	175	18.9	7.8	18.1	15.3	10.2	9.6	9.5
Vegetal products . .	194	38	283	273	116	61	55	5.9	2.9	11.5	8.3	3.6	2.4	3.0
Animal products . .	119	51	134	194	178	154	101	3.7	3.9	5.4	5.9	5.5	6.1	5.5
Agri. industry products . .	298	12	29	33	32	22	15	9.1	0.9	1.2	1.0	1.0	0.9	0.8
Raw and semi-finished timber . .	7	1	1	2	4	6	4	0.2	0.1	..	0.1	0.1	0.2	0.2

¹ Not including wool the import of which amounted to: in 1930-31, 64 million zloty; and the average for 1928-31, 120 million zloty.

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ASPECTS OF RUMANIAN AGRICULTURE

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ASPECTS OF RUMANIAN AGRICULTURE

I. PHYSICAL FACTORS

Rumania is situated in the center of the European Continent in latitude $43^{\circ} 38'$ and 49° , and in longitude 18° to 29° east (Greenwich). Thus the 25th meridian divides not only Europe but also this country into two equal parts. It borders on Hungary, Czechoslovakia, Poland, Ukraine, the U. S. S. R., the Black Sea, Bulgaria and Yugoslavia. Because of the configuration of its frontiers, the country presents a uniform aspect and its expanse superposes ancient Dacie of Trajan.

CLIMATE: As to its climate, Rumania lies in the temperate zone, particularly in the tempered Continental zone. The temperate zone with its many different climates can be found here. Thus the "Danube" climate spreads over the greatest portion of the country, that of Ukrania is found in the eastern part, while the Polish climate reigns in the northern regions. In the east and more especially in the southeast, in the province of Dobroudja, still another kind is manifest, namely, the Mediterranean climate. And lastly, the Alpine climate, characteristic of mountainous regions, is to be found in the Carpathians.

The topographical aspect of Rumania presents two totally different regions from a geobotanical and agricultural point of view. Both the ethnical character of the population and the formation of the State of Rumania have been influenced by this fact which determined, very decidedly, the principal occupations of its people. More than 85% of the population of 18,000,000 are occupied in agriculture and cattle raising, for the agricultural character of the country lost none of its importance after the War through the annexation of its sister provinces to the mother country. If in these latter years agricultural Rumania suffered a setback in the cultivation of cereals, cattle raising on the other hand has considerably increased.

The plains of the Danube and those of Moldavia, the agricultural regions of Bessarabia and Dobroudja (mostly watered by the Danube and its tributaries) as well as the western region and the plains of Tisa, have from the earliest times been used for the growing of cereals. The hilly regions which connect plains and mountains are celebrated

for their vineyards, the cultivation of which dates from the remotest times. In these very same regions today, vast expanses of orchards are located. In the hilly and mountainous regions, rich in fertile and remunerative pastures, principally in Banat, cattle raising predominates. For centuries past the peasants have been cattle raisers.

SOILS: The diversity of the climate has given rise to several varieties of soil as regards nature and preparation. To the diversity of climate must be added other factors of equally great importance, determined by local conditions such as the nature of the "mother rocks," exposure, degree of humidity, etc., which influenced the composition of the soil and its subsequent spontaneous vegetation. A glance at an agrogeological map of Rumania based on the principles of Docuccae, i.e., taking into consideration the correlation existing between soil and climate, shows definitely the existence of all the varieties of soil from the rich "chernozem" characteristic of the "steppes" regions to the "pod sols" of the mountainous regions. Aside from the soils which form very distinct zones, subjected, as we have already seen, to the different varieties of climate, we find still other "interzonal" and "azonal" soils whose existence is due entirely to local conditions.

Among the zonal types of soil, some are characteristic of the steppes regions, others of the "ante-steppes," depending upon the average annual atmospheric precipitation which varies from 400 mm. to 500 mm. Among these types we find the white soil of the steppe, the light brown of the chernozem series, the dark brown of the chernozems, and lastly the chernozems proper. These soils present an increasingly evident granulation, due to calcium and to increasing richness of mold on the surface, and are excellent soils for cereal growth. The main problem of our peasants in the steppes regions is to retain water in the earth or else eventually to procure it.

Simultaneously with these types of soil are also found, though rarely, several alkali soils of continental or maritime origin and moving or semi-moving sand, even in the form of dunes, whose origin might likewise be continental or maritime.

A second series of zonal soil characterizes certain regions of Rumania which benefit from favorable rainfalls, varying from 600 mm. annual precipitation to 900 mm. and above. This figure represents the average amount recorded in the rainiest districts of the country. In these regions forest soil predominates, which might be either brown or reddish brown. Through a succession of intermediary conformations of a more or less podsolized nature the forest soil finally becomes typically podsol and *squelletique* podsol, two types equally well

represented in Rumania. They are characterized by the fact that calcium carbonate leaches to a great depth. Their aspect is distinct and gradually they are approximated by the podsollic *squelletiques* soils, found with diminishing amounts of plant foods.

In these regions of favorable rainfalls the principal problem presenting itself from an agricultural point of view is the restoration of plant foods to the soil by means of manure. From studies made up to date by the Institute of Agronomic Research of Rumania, in view of superposing an agronomic map on that of the agrogeological, it developed that the soils of Rumania are primarily in need of nitrogen and phosphorous. All soils are relatively rich in potash.

2. LAND USES

ARABLE LAND: The entire surface of Rumania covers 29,489,200 hectares. In 1930 the territory was distributed according to its soil utility in the following manner:

Arable land	12,857,138 ha.
Natural prairies and pastures	4,054,475
Vines and orchards	613,614
Forests	7,224,071
Useless land	4,739,902
Total	29,489,200

Rumania consists of 4 large provinces, namely, Bessarabia, Bucovina, Transylvania (including Banat and Cresana), and the Ancient Kingdom. The arable land covers 43.59% of the surface of the country, and is distributed among the Provinces as follows: Ancient Kingdom, 6,515,000 ha. (50.05%); Transylvania, 3,113,573 ha. (24.3%); Bessarabia, 2,915,961 ha. (22.60%); and Bucovina, 311,616 ha. (2.40%). The arable land area compared with the size of the respective Provinces is: 96.8% for Bessarabia; 46.9% for the Ancient Kingdom; 30.2% for Transylvania, and 28.2% for Bucovina. The reason for these differences lies in the configuration of the soil of these provinces. If Bessarabia has the largest percentage of arable land, it is because no mountain chains cross through it as is the case in Transylvania and Bucovina.

ESTATES: If property which attains or exceeds 400 ha. of land surface is termed large, large properties control the cultivation of 1,551,628 ha., that is, 12.1% of the entire cultivation area, while small properties control 11,305,000 ha., that is, 87.9%.

RECLAMATION BY IRRIGATION: The irrigable regions of the Danube in Rumania, according to the latest estimates, cover a surface of

more than a million ha., of which 20% could be cropped, especially if submersible dams were used. Due to such works an area of 200,000 ha. could be made profitable by fitting it for agriculture and cattle raising. The remaining 800,000 ha. of low ground below the high-water level of the Danube, covered with marshes, reeds, etc., could be managed and exploited more intensively by organizing fishing, utilizing willows, reeds, low pastures and meadows, eventually endeavoring to cultivate the latter. In the pre-war time, and especially about 1910, a great impetus was given damming through results obtained from fertilizing irrigable lands, thereby increasing their yield. Mention should be made of dams installed throughout the Pruit River, along which a very appreciable area was improved. The work of damming was done pretty generally throughout the course of the Danube, though more particularly in the region lying between Olteritza and Calarasi. Today careful study is given to possible new sources of farm income. Following the lowering of sale price on agricultural products, it seems more profitable to develop fishing, the natural condition found in these areas being most favorable thereto.

3. HISTORIC REVIEW

Its geographic situation explains why agriculture and cattle raising have, from remotest times, been the chief occupation of the Rumanians. It would seem that vine-growing had been very extensively practiced by the Dacians, as numerous bas-reliefs, inscriptions and documents of those times sufficiently prove. The history of Rumania's agriculture is interwoven with the history of its people. The invasion of the barbarians after the downfall of the Roman Empire, added to their continuous struggles against the domination of the Turks during the Middle Ages, creating an atmosphere of uncertainty, and the pursuit of agriculture became a task to be performed under the most onerous conditions. Only after the Crimean War could the cultivation of cereals be considered, when the Danube, Rumania's great artery of navigation, became international, and as a result agricultural products found an easy outlet.

From the beginning of the nineteenth century and prior to the World War, due to assured outlets and to its increasingly easy means of transportation through a network of railway construction, as well as to the increase of machinery and dependable incomes, Rumanian agriculture made steady progress toward its apex. Immediately after the war the country's agriculture followed closely the evolution

of world agriculture, maintaining it by the same methods and the same improvements as those which contributed so powerfully to the progress of other countries.

POST-WAR: After the War, due to the Treaty of Versailles, Rumania realized her national dream of annexing sister provinces to the Ancient Kingdom. The greatest part of the country having been invaded by the enemy during the war, agriculture suffered trying times. Enforced requisitions and a whole series of destructions ended by almost completely destroying her farming implements, with the result that large areas remained uncultivated for lack of resources.

Thus, after the War, Rumania found herself facing two agrarian problems: The first pertained to a definite agreement on its agrarian reform, of which mention will be made later, and the second to fertilizing the land. Lack of man-power, one of the sorest results of the War, lack of dairy-farm animals, the total lack of machinery, of seeds, of ready and practical means of communication, etc., all drew statesmen's attention first toward agriculture. They began vigorously to remedy these discrepancies. From 1918 to 1922, heroic efforts were made to bring agriculture back to normalcy and it was nearly attained. The high prices of agricultural products, of cereals especially, acted as a powerful stimulus to agriculturists, who made every effort to restore their homes and replenish their machinery.

SECOND PERIOD: A second characteristic period for Rumanian agriculture as well as for the other agrarian countries of Europe is that comprised within the years 1923-1929. This was a period of depression for agriculture during which the scheme of lowering home prices on agricultural products was resorted to as a protection to the consumer. In these years, Rumania and other agricultural countries especially favored industry to the detriment of agriculture. A series of export taxes on agricultural products amounting at times to 100% of their value, and still another series of measures prohibiting exportation, are the sad reminiscences of the agriculturists of those days.

And lastly in this short review of the past ten years of Rumanian agriculture is discerned a third period, dating from 1929 to the present time. The world over-production of the last two years disturbed the equilibrium existing between costs and selling prices, making the matter of income the most important problem. It was not long before this serious condition reacted on agricultural products which suffered more or less from the lowering of prices. Later, when treating of the Agrarian Conferences, an examination of the measures taken by the State during these last two years in common with the other agrarian states will be made.

4. LAND REFORM

As above stated the most important post-war problems for agricultural Rumania were peasant property ownership and implementing the great agrarian Reform. Any one glancing over pre-war statistics bearing on the distribution of rural property would have been surprised at the disproportion existing between the cultivable land area belonging to the large proprietors and that of the small proprietors, meaning the peasants.

PRE-WAR ESTATES: In order to define more clearly the respective positions of these two categories of pre-war Rumanian property, one need only recall that in the Ancient Kingdom 0.64% of the proprietors, i.e., 5,385, owned 3,810,000 ha. or 47.7% of the entire surface; while 99.36% of the proprietors, i.e., 968,622, owned only 4,180,648 ha., representing 52.5% of this area. The precarious condition of the peasant not only stunted his own development but that of the whole country as well, since the peasant class constituted an overwhelming majority of the population.¹ It is because of this very fact that for some time prior to 1913, agrarian reform was seriously considered. Political events ensuing the following year prevented the State from realizing this reform before the War. It was in 1917, when the War was in full swing, that the Constituent Assembly meeting at Jassy, capitol of Moldavia (Bucharest, the capitol of Rumania had been invaded by the enemies' armies) took the first steps toward bringing about this agrarian reform.

EXPROPRIATION: The Rumanian Constitution as it was then written had provided the inviolability of property. The Constituent Assembly modified the article in question by admitting the principle of expropriation in the case of public utility. On the 20th of July, this article of the Constitution was modified in the following manner: "Because of its usefulness to the Nation, peasant land shall be increased by expropriating cultivable lands to the following extent and under the following conditions: lands to be re-sold to peasants (tillers of the soil), preferring the mobilized peasants of this category, or their families in case the peasants had died during the War or because of the War."

They had likewise determined the categories of land which were to be expropriated. It had been definitely settled that all arable land belonging to the Dominions of the Crown, to the Rural Bank, to public or private civilians, to various endowments, even when the

¹ Population: 18,025,237 (1930 census).

testamentary donation had specified these lands were inalienable — all were to be expropriated in their entirety. The new Constitution defined the categories of lands that were to be expropriated and fixed the expropriable area at 2,000,000 ha., from which the rural owners were to be dispossessed according to a progressive scale. Special measures had been provided concerning oil-bearing land, common pastures, prices, etc. The expropriation was effected in Rumania in accordance with the laws extant in the separate provinces, so that there is one law of expropriation for the Ancient Kingdom, one for Transylvania, one for Bessarabia, and one for Bucovina.

In the Ancient Kingdom the historic decree-law of December 14, 1918, promulgated the first law of expropriation elaborated in accordance with the provisions of the Constitution. This decree was completed by the decree law published December 15, 1918, which provided another expropriation of 2,000,000 ha., to be derived from private properties. The decree provided two kinds of expropriation, one total and one partial. The following categories of property were to be totally expropriated: (a) properties provided by the Constitution as above mentioned; (b) rural properties belonging to foreign subjects whether foreign by birth, by marriage, or for any reason whatsoever; and (c) properties belonging to Rumanian subjects not inhabiting their country and termed "absentists." Partial expropriations were to be applied only to cultivated lands, to prairies, to pastures and to all other fertile lands.

NEW SCALE: The progressive scale indicating lands expropriable in relation to the extent of the properties formed an integral part of this decree. According to this scale, properties of 100 ha. or less were not liable to expropriation. On the other hand no proprietor could possess after expropriation more than 500 ha. Expropriated land was to be placed immediately at the disposal of the peasants, forming associations of small farmers owning less than 5 ha., and known as "obstii," notably those peasants who had taken part in the War of 1916, not yet 50 years of age, and who had never been sentenced to prison term. These "obstii" were registered and organized by a special institution known as "Central Office of Coöperation and Distribution of Land to Peasants."

MALADJUSTMENTS: The decree-law provided still another series of measures including the price of the expropriated land as well as the farm-rental the peasant was to pay until taking possession thereof. And lastly, this decree-law provided yet another series of details. If the decree-law solved the agrarian problem from a social point of view, it was, on the other hand, altogether anti-economic, for it de-

stroyed large properties without solving the problem of the method of granting possession. In certain regions, the expropriated area was too great, exceeding local needs, while in other regions it was just the reverse.

In order to remedy this state of affairs, the agrarian law of 1921 was promulgated for the Ancient Kingdom. As with the decree-law, so this one provided two kinds of expropriation, total and partial. The following were totally expropriated: (a) Lands that had been rented for a period of more than ten years, in the interval between April 23, 1910 and April 24, 1920 inclusive, exception being made for lands belonging to minors or to the interdicted, and legally rented by their parents or guardians; lands under judiciary sequestration and those belonging to the wives of State employees whether civil or military; and (b) cultivable lands belonging to the dominions of the Crown, to the Rural Bank, or to any juridical body such as Institutions, endowments, donations, etc., even though in the endowment act they had provided against the inalienability of these possessions. Exception has been made of prairies belonging to city or rural communities, and those belonging to churches and schools, these last to be expropriated only from 12 ha. upwards; (c) land belonging to foreign subjects and absentists; (d) lands under long lease, of the form of rental called "embatic," of hereditary or any other form expropriated for the benefit of the immediate tenant; and (e) rural properties owned by the condemned convicted of crimes against the State, for desertion, or for any other delinquency of less importance.

Article 7 abrogates all rights and privileges of whatsoever nature or source which proprietors held over their land. The law protected those proprietors who personally cultivated their land for reasons of economic order. By this article new and intangible quotas were established according to the region in which the land was located. The number of peasants having right of possession was determined by the method of the degree of rational exploitation of the estate and the value of the investments made.

Article 8 of the law dealt with lands effectively cultivated by their proprietors, — expropriating that portion of arable land which exceeded the following areas: 100 ha. in the hilly and mountainous regions; 150 ha. in the region of plains where the number of requests for ownership was large; 200 ha. in the hilly regions where the number of requests was moderate; and 250 ha. in the hilly regions where the number of requests for ownership was satisfactory.

The law *increased* the intangible quotas for agricultural exploitations which on February 1, 1921 possessed important investments in

inventories, in constructions and livestock, in installations for agricultural industries, or for those lands which were cultivated by the proprietors themselves. For the respective regions cited above, the maximum of arable land was: 100 ha., 200 ha., 300 ha., and 500 ha. Proprietors who owned diverse investments August 15, 1916 (the date of Rumania's entrance into the War) or those whose property lay in the devastated region, came under this same category.

FAVORS: Along these same lines, the law provided for proprietors whose son or sons had studied agriculture, a lot of 50 ha. each in the region of plains. Proprietors holding diplomas of agriculture enjoyed the same right.

EXEMPTIONS: Exempted from expropriations were areas used for vine growing, fruit trees or any other plantation in effect July 1, 1917; lands artificially irrigated, forests, stream-beds, ponds, lakes, areas on which constructions were built, as well as land unfit for cultivation.

MINERAL RIGHTS: The sub-soil of expropriated areas remained State property, exception being made of the sub-soil of lands expropriated for common pastures in the mountainous and plateau regions; these remained possessions of the expropriated proprietors. As there were proprietors owning estates in different departments, the legislator, in order to centralize and facilitate as much as possible the exploitation of the parcels remaining to the same owner, introduced into the law the principle of coördination by virtue of which proprietors owning several lands which exceeded a total of 500 ha. of arable land were expropriated up to the limit of 200 ha. This maximum was permitted if the lands were rented by April 23, 1920, or at the time of the application of the law. The respective areas retainable in the four regions cited above were 250 ha., 400 ha., and 500 ha. The law granted privileges to proprietors who February 1, 1921, owned well-organized farms, agricultural installations with proper inventories, agricultural industries, or whose occupation was cattle raising, and stipulated that those belonging to said categories might retain a maximum of 500 ha.

In order to create common pastures in the mountainous regions the law provided for expropriation of a much smaller quota than that specified. It was set at 25 ha. for lands fit for pastures and meadows. With this same intent even forests could be expropriated, but only with the preliminary approval of the Technical Council for the Administration of Forests and of the Agrarian Committee. Sufficient lands were left to cattle raising, even though the quota determined by Article 8 had to be exceeded.

Thus one can see that this law sought not to impede but rather to facilitate the advancement of agriculture.

Calculations of areas of possible expropriation applicable to cultivable lands were made after the deduction of various areas exempted from expropriation as of January 1, 1916. Cultivable lands are defined as lands fit for plowing, pastures, meadows, including irrigable lands susceptible of cultivation or of use as pastures. Estates as yet undivided were considered divided from the quota point of view, subject to expropriation. Certain exceptions however had been made.

The law provided another series of measures of details regulating different matters pertaining to sowing, exchanges, sales, rentals, etc. As to the quota part, it was stipulated that it should be in one piece in order to facilitate the economic exploitation of the property. In order to complete the agrarian reform for the future the law provided a State Right of Preëmption where land was to be sold, price and conditions being equitable.

EXECUTIVES OF REFORM: The law provided the following executive agencies: 1. The Public Committees on Expropriation. One Committee was organized for each juridical District. Its prime purpose was to pass upon the legal status of properties from the viewpoint of expropriation and to furnish the necessary appraisal data. It was composed of a Justice of the Peace as President, of a delegate from the Central Office of Distribution, of a delegate from the proprietors, and one from the peasants. 2. The Departmental Committees on Expropriation. There was one for each Department. Their prime purpose was to pass upon the cost of the expropriated land and, finally, upon appeals made against the Public Committees' decisions. These Committees were composed of four members, viz., one Judge from the Court of Appeals appointed by the Minister of Justice, as President, or in his absence, the President of the local Court, or one of the Judges of the Court appointed by the President; one delegate from the Central Bank of Distribution; a delegate from the proprietors; and a delegate from the peasants. 3. The Agrarian Committee. This held its seat at Bucharest and was composed of high magistrates of the Supreme Court and competent economists. It was the consulting agency for the Ministry and passed judgment only when the law was misinterpreted.

With reference to the *price* of expropriated land, the law provided that this would be determined by taking as a basis the prices of farm rentals established by the regional committee of the 1917-1922 period, these prices to be multiplied by 40 for cultivable lands and

by 20 for pastures. One price was set for each property, for each category and for each quality of land. All inquiries were made by the Public Committees and submitted to the Departmental Committees which determined primarily these prices with the right of appeal to the Court of Appeals. The decisions of the Court of Appeals were liable to appeal to the Supreme Court. The price paid the proprietor for the expropriated land depended upon the decisions of the expropriation committee. Eighty per cent of the land value was paid immediately and the last 20% after the land survey.

The foregoing shows the general lines, the standards and the methods serving in the application of the Agrarian Reform in the Ancient Kingdom. The laws especially established for Transylvania, Bessarabia and Bucovina are based on the same principles as the law of the Ancient Kingdom and differ from it only in matters of secondary importance. In Transylvania expropriation was decided upon by the General Assembly of Alba-Julia, November 18, 1918, when the Transcarpathian Province was joined to the Mother Country. In Bessarabia, the Agrarian Reform was voted for by the State Council in 1918; while Bucovina voted for the law of expropriation at the same time as the Ancient Kingdom.

DISTRIBUTION: Expropriation once established, the great concern of the State of Rumania was the distribution without delay to the peasants of the land which had been allotted them. The first step was the classifying of peasants having claims thereto, and deciding the order in which these claims were to be satisfied. To establish the list of those having claim to the land, another agency, the local committee, was set up, composed of the Mayor, the Priest, the Instructor and four peasants chosen by the peasants.

The duty of this committee was to list all those having right of possession to the land. Once established, these lists were registered and classified by the Departmental Committee on Distribution which consisted of a Justice of the Peace as President, of a Chief from the agricultural regions, of the sub-Prefect, of two delegates from the peasants, and of one delegate from the Ministry of War, who was to take charge of the military rating of those listed. These lists were inspected by the Agrarian Committee. This procedure of land distribution used in the Ancient Kingdom was with slight variations used in the other Provinces. The typical lot distributed among the peasants varied between 0.5 ha. and 5 ha., excepting lots for colonization, which had a much greater expanse, varying according to region.

The Agrarian laws provided still another series of orders concerning the economic organization of the new proprietors.

Still further modifications in the agrarian laws aimed to create a peasant bourgeoisie which would represent the average agricultural property, e.g., a law was voted in 1929, called "Law for the Circulation of Rural Bonds."

RESULTS: The results of the Agrarian Reform expressed statistically are as follows: 2,776,401 ha. have been expropriated in the Ancient Kingdom. This area was obtained by expropriating 7,181 estates. In Bessarabia, 1,491,920 ha. were expropriated, an area obtained by the expropriation of 4,271 properties. In Bucovina 75,967 ha. were expropriated from 561 properties. In Transylvania, 1,663,809 ha. were expropriated from 8,963 properties. The grand total in Rumania was 6,008,098 ha. and the expropriated properties 20,976.

According to the established lists the number of rightful claimant peasants to the land distributed per province is: in the Ancient Kingdom, 1,053,628; Transylvania, 490,328; Bessarabia, 357,016; and Bucovina, 77,911, making a total of 1,978,083. As in certain regions the expropriated area was not sufficient to satisfy all the "rightful claimants" to land, only the following numbers of peasants took possession, in the province order just named: 630,113; 310,583; 357,016; and 71,266, totaling 1,368,978.

The aim of the Agrarian Reform was to improve the peasant's lot and was applied to the proprietors as well as the peasants regardless of nationality or religion. Thus in the provinces of Transylvania, Bessarabia and Bucovina where besides the Rumanians there were also representatives of other nationalities, land was distributed among 206,165 foreigners (minorities) and 532,700 Rumanians.¹ Thus we see that 36% of those who received land are foreigners.

The 6,008,098 ha. of expropriated area were distributed in the following manner:

To peasants having rightful claim to land	3,629,824 ha.
To common pastures	948,914 "
To common forests	489,182 "
To peasants' dwellings	77,922 "
For the purpose of colonization	320,616 "
To long-lease farmers having become proprietors	58,008 "
Non-productive area	59,841 "
General interest reserve	299,656 "
For State's use	124,130 "
Total	6,008,098 "

¹ Numbers given possession in the land distribution:

	Rumanians	Other Nationalities	Total
Transylvania	227,943	82,640	310,583
Bucovina	42,221	29,045	71,266
Bessarabia	262,536	94,480	257,016
Total	532,700	206,165	738,865

More than 6,000,000 ha. belonging to large proprietors passed into the hands of small agriculturists. This radical transformation resulted in bringing about a complete change in the agrarian structure of the country. To make this fact more evident, data follow, which show how property was distributed before and after the application of the Agrarian Reform.

Properties whose areas varied from 0 to 100 ha. aggregated in hectares:

	<i>Before Reform</i>	<i>After Reform</i>
Ancient Kingdom	4,593,148 ha.	7,309,549 ha.
Bessarabia	2,337,811 "	3,829,731 "
Transylvania	4,689,855 "	6,363,664 "
Bucovina	405,000 "	480,967 "
Total	12,025,814 "	18,033,911 "

Properties of more than 100 ha. aggregated in hectares:

	<i>Before Reform</i>	<i>After Reform</i>
Ancient Kingdom	3,397,851 ha.	621,450 ha.
Bessarabia	1,844,539 "	352,619 "
Transylvania	2,751,457 "	1,087,648 "
Bucovina	115,000 "	39,033 "
Total	8,108,847 "	2,100,750 "

Before the Reform 20,134,661 ha. were distributed as follows: In small properties 59.77%, and in large 40.23%; after the Reform: in small properties 89.56%, and in large 10.44%.

In this manner, after appreciable sacrifices, the basis of the social and economic structure of the State of Rumania was improved. The consummation was due to the novel distribution of rural properties in such a way as to permit building thereon today a powerful and healthy economic system.

5. CROP PRODUCTION AND TECHNIQUE

Agriculture in Rumania is characterized by the cultivation of cereals. Of 14,270,105 ha. of cultivable land, including prairies, orchards, vines, more than 11,035,000 ha. are growing cereals. Of 56,022,189,174 lei, the gross value of the crops obtained from this land, 31,336,225,000 lei are attributable to the cereals.

CORN: The chief cereals are wheat, corn, barley, and oats. Of these cereals corn occupies the largest area. Corn, in 1930 for example, was grown on 4,426,000 ha. Corn raising is preferred because

it is the basis of the peasants' food and of cattle feed. In addition, conditions of vegetation are most favorable for corn growth. In the rotation of crops, corn generally appears after a spring or autumn cereal. The time for sowing corn varies, depending on the length of the winter; ordinarily peasants plant it in mid-April. Methods of cultivation differ from one region to another. Generally peasants seed in hills, placing four or five seeds in each hill.

The distance between the hills is from 50–60 cm., and between the rows from 60–70 cm. Where large agricultural tracts are exploited, especially in Banat and Transylvania, planting machines are used. In well organized exploitations, peasants weed out the corn as often as possible by machine or by hoe, in order to control the weeds and to make a mulch, both operations to conserve soil moisture. Mulching corn after it has grown is the oldest system of dry farming and proves successful in Rumania.

To get a clear idea of the importance of corn raising a few statistics referring to 1930 are cited herewith: Land sown, 4,426,689 ha.; total production 45,199,201 quintals; average price per q. 235 lei; average yield 10.2 q.; and average value per ha., 2,399 lei.

Wheat ranks second in importance. In 1930, 3,055,000 ha. were sown, producing 35,590,000 quintals. Following are a few 1930 data citing results of wheat culture; area in wheat 3,055,904 ha.; total production 35,590,379 q.; average price per q. 310 lei; average yield 11.6 q.; and average value of produce per ha. 3,610 lei.

EFFECT OF REFORM: For example, the average production of wheat during 1927–1928 was 21,000,000 q., internal consumption amounting to 19,000,000 q., thus leaving a very small exportable surplus. This situation can be explained by the fact that the yield was less during late years because of the change in farm property management under the Agrarian Reform. Further, there has been a considerable increase in domestic consumption, a fortunate result of the Reform, for it shows a rising level in the standard of living among the rural population.

In the cropping scheme wheat succeeds corn, legumes, cole crops, or fallow. The technique used in its cultivation is the same as that of the western countries except that here fertilizers are, up to the present, little known. Although the land lacks certain plant foods, e.g., nitrogen and phosphorous (now alluding to lands in humid and semi-humid climates), it is rich enough. Accordingly the problem addressed is not the restoring of these elements but the judicious use of our reserve moisture by means of a rational technique. This problem is especially important where the soil is dry and one which

the Institute of Agronomic Research is endeavoring to solve to the very best advantage.

If production of wheat has decreased it is because as with corn the small farmer will not give sufficient attention to cultural conditions. They are still far too neglectful of the necessary fall labor, of the use of the seed grader, the sulphating of seed, and cultural work aimed at cleaning the land and retaining reserve soil moisture.

The use of the threshing machine is steadily gaining. The purchase and use of this machine, following the war, helped to form associations of peasants. Motorized machinery has recently come to the fore, and is beginning to be adopted by small property owners. Of agricultural machines those most used are the drills and reapers.

BARLEY: As to that which concerns extensive cultivation, a vast area is utilized for barley growing for which the soil and climate of the country are well suited. This crop does not require much care and the yield, which for the moment is low, depends to a great extent on the agricultural technique and seed used. The area devoted to barley raising in 1930 was 1,975,000 ha. and the total production amounted to 23,713,000 quintals. The area sown to *oats* in 1930 was 1,087,000 ha., and the production amounted to 11,565,000 quintals. *Rye* covers much less ground and is especially raised in Bessarabia and in Transylvania. Its entire crop varies from 3 to 5 million quintals.

A fact worthy of notice is the extent of the spread of the culture of special food crops, e.g., beans, green beans, lentils, peas, etc., showing the evolution from small farm to intensive farm management.

VITICULTURE: In Rumania the most important branch of plant production after agriculture is viticulture. Vineyards cover 239,825 ha. of surface. Vine culture is practiced in Muntenie and in northeast Oltenie, in Moldavia and in Bessarabia, in the region of the Ardeal at Alba-Julia, in the region of the two "Tarnave" and lastly, on the sandy region known as Michael's Valley in Bihor. Wine production has considerably increased since the war, to such an extent that it greatly exceeds home-consumption demand, and Rumania is forced to seek export markets for the surplus. A series of legislative measures prevent too great a development of inferior vineyards (direct producers). Tending to the same end, measures were taken to increase home consumption by forbidding the production of wine alcohol.

The most cultivated of the industrial plants are: hemp, flax, cole, sunflower, sugar beet and tobacco.

The area, production, costs and value of the important crops of Rumanian cultivation will be found in Table I, Appendix. In graphic

form in Fig. 1 and Fig. 2 (pp. 328-29) are given extracts from the agricultural statistics of 1930 published by the Minister of Agriculture, the average production, and yield of the principal cereals during the 1925-30 period.

6. ORGANIZATION OF THE NEW AGRICULTURE

Making more profitable both land and crops constitutes the most important economic problem for Rumania. In the first place it was necessary to make productive the greatest possible area by restricting products to particular areas and adapting them to the specific potentialities of each region. With this in mind a program was worked out to encourage cultivating wheat and corn. For each of these cereals that region best suited to it from the point of view of soils and climatic conditions was determined. These decisions were made by the different agents of the Minister of Agriculture and of those of the local institutions pertaining to plant improvement.

AGRONOMIC INSTITUTE: That branch of the Institute of Agronomic Research pertaining to plant improvement is now seeking the most productive varieties which combine the maximum of qualities regarding earliness and resistance to frost, rains, disease, etc. The Institute is in charge of the program and will grant subsidies for the organizing of special extension courses. The Administration of agricultural and zoötechnical development will increase by means of its farms, new varieties, and under the direction of the Institute will continue comparative experiments with crop varieties in order to decide the maximum geographic area suitable to each variety. It will assist, through its personnel of specialists in propagation, in improving these varieties, etc.

As for corn, the Institute will make numerous tests on its agricultural farms of the new methods used for making corn profitable for fattening young stock and poultry. This will be done according to directions given by the Zoötechnical Institute which will undertake comparative nutrition experiments on corn-fed animals. Lastly, the Union of the Chambers of Agriculture, local Chambers of Agriculture and other local agencies will work energetically to encourage and direct the cultivation of wheat and corn. Practical courses given to agriculturists of all classes will acquaint them with the best methods of all phases of culture. In a word, all state agents will do their utmost to encourage efficient cultivation of these two important cereals in the most appropriate regions.

It is proposed to work out similar programs for growing indus-

trial plants that play an important rôle in the general economy of the country.

PEASANTS' ASSOCIATIONS: In order to improve the land in the most intensive manner, peasants were recently encouraged to form friendly associations, "Association for the Advancement of Agriculture." A law lately passed granted appreciable advantages to these associations, hoping to improve agriculture by grouping the different classes of cultivators whose properties form an economic unit, thus facilitating the application of rational methods of cultivation such as: mechanical plowing, spreading manures, using selected seeds, machines, stock breeding, cleaning and storing of cereals, and processing products.

It is obvious that these associations tend to correct the technical and economic disadvantages resulting from the obliteration of large properties in consequence of the Agrarian Reform. In this way it is hoped to profit by this social agent growing out of the Reform and to correct the economic deficiencies on record since it has gone into effect. A further advantage accrues to peasants through these associations, viz., the opportunity afforded of raising mortgage loans at reduced rates, thus making it much easier for small farmers to obtain credit. Whereas mortgage loans would be refused the individual owner of but 3 to 5 ha. land, the very reverse would occur when the mortgage had been assumed by a group of small proprietors representing an area of several hundred ha., each member of said group to be responsible for the debt contracted.

The State has endeavored to encourage these associations as far as possible, and it assumes the loans contracted at 6% from the accredited institutions. In exchange for assurance that the advantages promised by the law will be granted, the association draws up for the approval of the Ministry of Agriculture a detailed work plan on how loans are to be used. This plan must follow the general program outlined by the Ministry for rationalizing agriculture.

The agricultural products of members of the Associations which are shipped for common sale to the different markets or are intended for exportation, enjoy reduced freight rates. All the advantages the State grants for agricultural advancement, e.g., distribution of selected seeds, facilitating animal breeding, obtaining machinery, etc., will be granted preferably to these Associations.

From the above outline, one can realize the vigorous efforts the State is making to improve the soil and its derivatives, striving for increased productivity.

PROCESSING PRODUCTS: The second part of the problem of development is to make agriculture more profitable by processing its crude

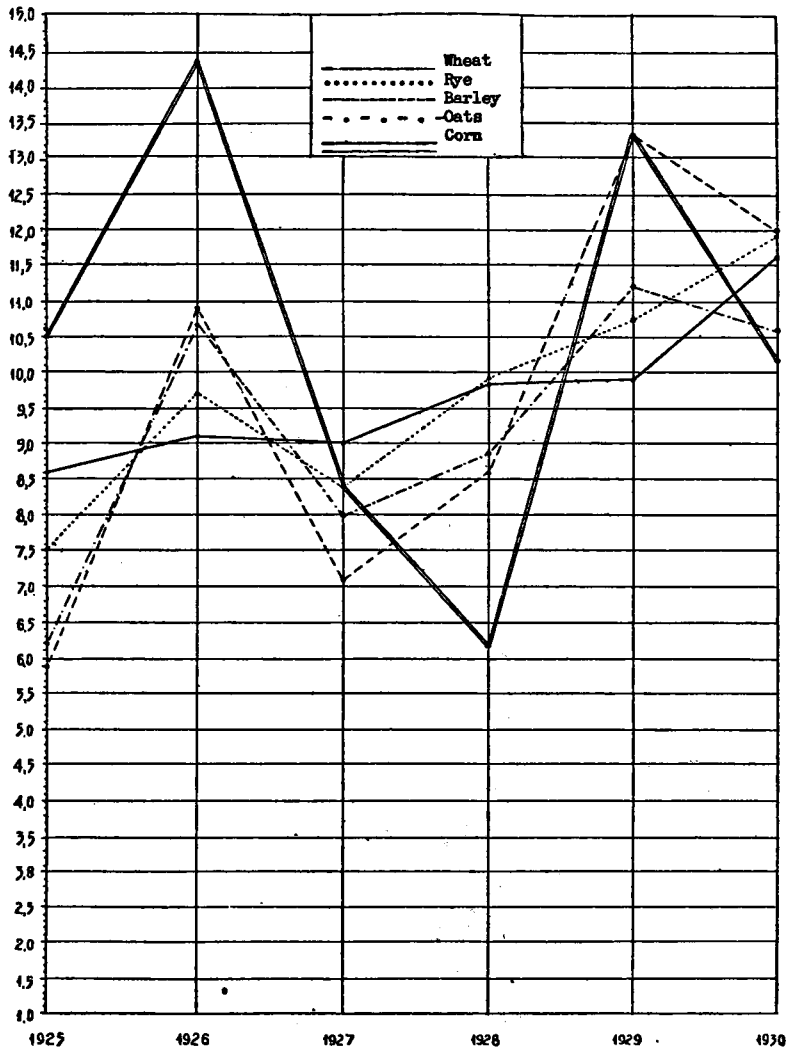


FIG. 1
Yield of Cereals in Million Quintals per Hectare, 1925-1930

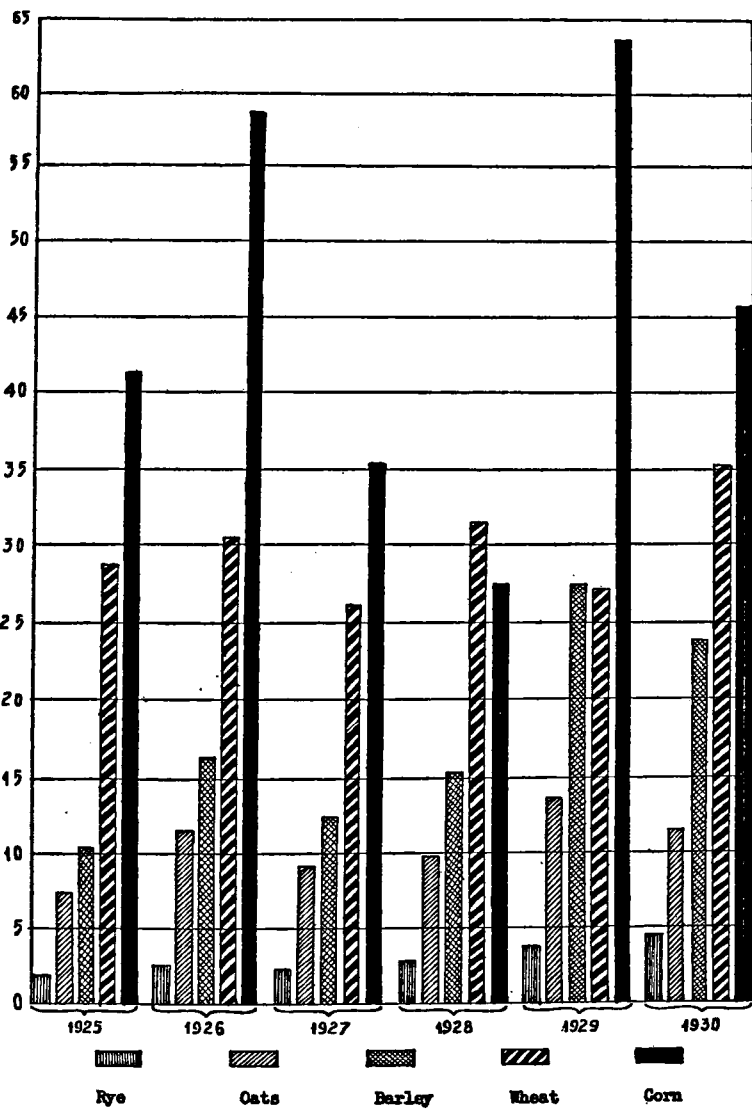


FIG. 2
 Production of Cereals in Million Quintals, 1925-1930

products. As observed, the cereal mostly grown is corn. A great quantity of it is available for exportation. It is to Rumania's interest, however, to export processed merchandise. It will be easy to "process" corn if cattle-raising is increased, thus substituting in export trade, meat and dairy products for corn. Aside from its geographic situation, the country lending itself naturally to cattle raising, there are other equally advantageous conditions to this branch of agricultural activity from an economic point of view. Rumania owns important stock-yards. In Table II, Appendix, statistics are presented on domestic animals of the last three years. The slight decrease recorded last year is attributable to the general agricultural crisis. Encouraging cattle raising is the most important concern of these specialists in economics.

POLICY: Today we are following a complex program, promulgated by the Ministry of Agriculture, whose aim is to encourage cattle-raising and to improve or adapt indigenous or imported breeds throughout the different provinces. For a while agricultural industry has profited by advantages granted by the State. This policy has caused a rapid development which has recently been limited because of the demands of domestic consumption. The powerful competition of the other industrial countries in international markets has been a serious obstacle to the prosperity of the agricultural industry which has thereby been forced to produce mainly for domestic needs.

EXPORT BOUNTY: Likewise in order to enhance the value of agricultural products, measures were recently taken which may have an immediate reaction, namely: The domestic price of wheat was raised by placing a bounty on exportation in the amount of 1,000 lei per ton of wheat, and 1,300 of wheat flour. To recover the amount necessary to pay the bounty, a stamp tax was put on all bread sold in the market, an easy tax, bread being much cheaper than in other countries where it is twice and even three times as high. The possibility of standardizing cereals is being seriously considered in the attempt to diminish the price of wheat by lowering the cost of handling and facilitating commercial relations.

7. AGRICULTURAL COÖPERATIVES

In Rumania there exist several kinds of agricultural coöperatives. There are coöperative loan associations, rental associations, purchasing associations, agricultural coöperatives, forestry coöperatives, etc. Coöperative loan associations aim to assist agriculturists in obtaining credit.

LAND RENT: Rental associations are coöperative societies formed by the cereal-growing peasants who aim at renting and cultivating either entire properties or part of a property. The Rumanian Association is a civil body. It is composed of an administrative staff of three representatives elected for the entire duration of the rental lease, with a committee as controlling agent, generally consisting of three censors. The number of members varies according to the extent of the properties. Generally the leased land is divided into individual lots which are distributed among the members for cultivation. The area of these lots varies according to the amount of labor and the necessities of each individual, and in general according to the demands for land whether numerous or otherwise. Lots must be worked under certain legally prescribed conditions of cultivation. The important machinery and implements are furnished and are for common use at slight cost, merely sufficient to cover operating expenses. The members are provided with the necessary seeds and joint-sales organization, so that products reach the consumer without passing through any intermediary. The Rental Association sets the pattern of coöperative societies.

LAND PURCHASE: The Associations for Purchasing are likewise coöperative societies formed by small farmers whose aim it is to buy properties in whole or in part, to be later distributed among its members proportionate to the contribution of each. The organization lasts until the land has been divided, distributed among its members and the lots entirely paid for. In order to compute the purchase price of the lot, the amount paid the proprietor (entitled to an appraisal) is taken as a basis, this figure being sufficient to cover the general expenses and the improvements made. Members make payments by the annual amortization plan. Association organization is favored because the State exercises through the Agrarian laws the right of preëmption in the purchase of properties that have been expropriated but not distributed, real estate thus preëmpted passing from the State to the Associations.

Agricultural Coöperatives are also associations consisting of small and moderate farmers whose object is to facilitate the better organization and more rational cultivation of the land. These ends are promoted by helping each to use modern methods and enhancing market value of products for better incomes.

The foregoing summary comprises all the agricultural coöperatives appertaining to land cultivation.

DEVELOPMENT: Agricultural coöperatives began to develop after the Agrarian Reform. The organization of small proprietors, repre-

senting 90% of the land area, is an absolute necessity. Without it Rumanian agriculture could progress only with greatest difficulty. Agricultural coöperatives sprang naturally into being as a corollary of the association of those to whom land had been granted. Through the medium of these organizations livestock breeding farms have been established, agencies for the common use of machinery, machine repair shops, cereal cleaning plants, and nurseries. Experimental fields, libraries and expositions have been planned. And lastly, forestry coöperatives aiming at developing parts of forests in mountainous regions.

CONSUMPTION: Since 1927 all these coöperatives have been merged in the coöperative statistics under the title of Coöperatives of Consumption, so that from this time on the activities of both production and consumption coöperatives merge.

In 1927, the Agricultural Coöperatives distributed and developed for the benefit of its members 2,232 ha. of forests, 55,000 ha. of arable land and 13,000 ha. of marshes and ponds. In that year they organized common sales amounting to 5,000,000 lei, and stored selected seeds and diverse agricultural machines in the sum of 33,000,000 lei. They also organized Mutual Insurance against hail by paying heavy premiums.

FEDERATION: In the Appendix, Table III, page 349, are given statistics on the Coöperatives of Consumption and the Agricultural Coöperatives after their fusion. All these are directed by a central governing office located at Bucharest, commissioned to supervise all the activities of the State's coöperatives. To direct the Agricultural coöperatives there exists a separate division called the "Technical Division of Administration" in connection with the "Office of Coöperation."

8. AGRICULTURAL EDUCATION

Rumania has 67 schools devoted specially to instructing qualified students in technical agriculture. Eleven different types are distributed as follows: one college each of agriculture, horticulture, and viticulture; 23 secondary schools of agriculture, 4 of viticulture, and 2 of horticulture; 1 school of agriculture and agricultural trades, and 1 first grade school of pisciculture; 6 winter schools; 9 second grade winter schools; and 18 domestic science schools.

COLLEGES: The three colleges receive as students only those having successfully completed four years of high school or those having passed through schools of secondary grade. Students are admitted

after submitting to a medical examination and passing successfully the examination given at the beginning of each scholastic year. These schools aim to train agricultural administrators for directing extensive cultivation and agricultural, viticultural, and horticultural institutions, whether private or belonging to the State. The courses last four years, of which three are theoretical, the fourth year being devoted exclusively to practical work. This last year the students are distributed among different agricultural institutions to complete their courses. Scholarship and tuition students, in dormitory or not, of full 16 years of age or older, are accepted. Pupils coming from the Gymnasium must have at least one year of practical agricultural work. Those having completed the college are permitted to present themselves for the agricultural baccalaureate examination, passing which entitles the graduate to enrollment as high school teachers. The teaching and administrative staff is recruited for the most part from agronomic engineers or from the qualified graduates of the special colleges of agriculture.

HIGH SCHOOLS: Secondary schools referred to above receive pupils who have concluded the elementary course, are sons or daughters of agriculturists, are at least 13 years of age, and have successfully passed the medical and entrance examinations. The aim of these schools is to form diligent and skilled farmers and housewives who, on completing the course, will appreciate advantages received and in a more rational way profit by the advantages country life offers, whether taking care of their own property or working for private institutions. The teaching in these schools consists mainly of practical work and includes general and special courses in cultivation. The head teachers, both men and women, as well as the instructors in these schools are always chosen from those specialists who have passed examinations in proficiency. The curricula requires four years, of which one is reserved for practical work during which the pupils are sent to different State Institutions or to farms and private properties where they develop their practical training. Pupils of domestic science also receive one year of practical training whether in the work shops of their respective schools or in other schools. Boys having completed their courses in agricultural schools of whatever grade serve only one year of military duty, and this is of great advantage to them.

WINTER COURSES: Winter courses for boys and those in season for the girls aiming to be good farmers and housewives operate alternately or separately with schools of secondary grade. Theoretical courses last one or two semesters, throughout the winter, concluding with

practical demonstrations in the fields during the summer. The teaching staff of winter schools consists of a director, who is also head teacher of special and general culture, and the administrative staff, members of which teach and train in special lines. Training fields operated for winter courses are under the direct supervision of the specialty instructor. He delivers lectures in adjoining towns and holds classes in theory during the winter, with laboratory demonstrations at the school.

RADIO AND MOVIE: In order to popularize agriculture the Ministry of Agriculture, with the assistance of the Society of Agronomic Engineers, organizes each year a lecture sequence bearing on agriculture, to be broadcast over the radio. In addition, lectures have been given, accompanied or followed by films, and agricultural and zootechnical expositions held in the large centers. All these methods of propaganda in the realm of agriculture tend in an obvious way to improve the Rumanian peasant's lot.

UNIVERSITY COURSES: University courses in agriculture are given at the Academies of Advanced Agronomic Studies in Bucharest and Cluj, and at the Agricultural Division Branch of the University of Jassy. Only those students (Bachelors) are admitted who have successfully passed entrance examinations. It is a four-year course. Those having finished the course after specializing technically, receive the degree of Agronomic Engineer and are recognized as such by the State; they are registered and enrolled in the Corps of Agronomic Engineers who enjoy certain legal privileges. To obtain the degree of Doctor of Agricultural Science, Agronomic Engineers must follow an advanced course for at least two years, which entitles them to report for examination to sustain their theses.

9. FARMERS IN POLITICS

THE "LEAGUE": Political parties existing in Rumania include civilians in all grades of society, of various professions that, properly speaking, are far from representing agricultural interests. This is the reason why, during 1923-1928, measures were taken which harmed agricultural interests without heeding their rightful claims. The critical times through which Rumanian agriculture passed during those years had also its good side. Agriculturists realizing that they were scattered among the different political parties and therefore unable to protect their professional interests, decided to form an association called "The Agrarian League," aimed solely at protecting their interests. This young organization has today succeeded through its

representatives in Parliament and in public life in gaining several points of its program, and even during the last elections held in 1931, the League witnessed an increase in the number of its deputies. It is the only organization which at the present time supports a journal, "Agrarul," and by its various activities the interests of agriculture.

CHAMBERS: There are, besides, as professional organizations, the agricultural syndicates, aiming rather at commercialism in supplying materials and machines, thus likening them to the coöperatives of consumption. There is still another public or state organization, the "Chambers of Agriculture."

10. TAXATION AND FARM INCOME

PROPERTY: Direct taxation on agricultural properties is of two kinds: There is in the first place land taxation, for which the operating proprietor or peasant agriculturist must pay 12% of his net income based on the apparent hectare value of the location. For those (landlords) who rent, the tax rate is 14% of net income. Next there is the tax on roads, varying according to the province from 3-10%. Then taxes levied by the Chambers of Agriculture which vary between 3-8.5%. The tax on agricultural buildings is 12% of their local value, dwellings of as many as three rooms being exempted. Lastly, tax on roads leading to dwellings vary from 2-5%.

INCOME AND PRODUCTION COSTS

The average gross income per ha. from the different cultures and their total values are given in Table I, Appendix. It is very difficult to estimate the net income owing to the great regional variation in the cost of production. As documentary evidence is cited below the wage paid for the commonest agricultural day-labor during 1930: Wages: Man, 40-60 l.; woman, 30-50 l.; boy or girl, 35 l.; team and driver, 100-150 l. Work performed in 10 hours in ha.: plowing 6-8 cm. deep 0.75; 15-20 cm. deep 0.5; 25 cm. deep with 2 teams 0.5; one harrow, 1 team 0.75; sowing, 1 man 1.5; cutting cereals, 1 man 0.5; binding cereal, 1 man 0.5; shocking grain, 1 man 0.75; rolling land, 1 team 2.5-3. Labor Costs: On basis of cost in lei per ha.: Plowing 15 cm. deep 250-300; 28 cm. deep 300-400; 32 cm. deep 600; harrowing 20-30; machine sowing 140-150; reaped 200-300; reaped and bound 600-800; shocked 80-100; cleaned 200-300; and rolled 15-30. The above wage, work and labor costs were obtained for 1930 by the Institute of Agronomical Research.

II. THE PRESENT CRISIS AND CONTROL MEASURES

It is evident that in the trying circumstances through which Rumanian agriculture is now passing, it is difficult to establish true perspectives of this branch of human activity. The actual distribution of cultivable land, of which an overwhelming proportion is owned by the small farmers, affords Rumania the greatest opportunity of overcoming all odds and passing through today's crisis without a break-down.

PEASANT FACTOR: The still very primitive mode of living of the peasant will cause him to feel much less the effects of the crisis. His limited needs, for he grows about everything necessary for himself on his farm, will enable him to hold out much longer than the larger farmer. The latter must raise money to provide countless necessities for the proper functioning of an extensive development. In the case of the large and medium proprietors, they are threatened with ruin if produce prices are not raised. The cost of production is considerably less than the 1930 data, and as a consequence the small farmer does not suffer so much because of the low prices of his products. His power of resistance, being inversely proportionate to his needs, makes of stability under existing conditions a powerful weapon against the agricultural crisis.

The depreciation of agricultural products and especially of cereals was a terrible blow to the predominantly agrarian central and south-east Europe. On account of the general agricultural crisis due to overproduction, to transoceanic competition, and to the tariff measures enacted by the industrial importing countries, which threatened to assume alarming proportions, the necessity of a more or less international agrarian conference was evident. Yugoslavia and Rumania, therefore, decided to hold a conference in July, 1930, at which representatives of both countries would discuss the means of entente between the industrial and the agricultural countries with like interests.

FIRST DANUBIAN CONFERENCE: At the resulting conference held in Bucharest as planned, in which representatives from Hungary also took part, it was decided that all participant States should answer the questionnaire submitted by the League of Nations on the method of directing the discussion to the end of insuring better collaboration among the industrial and the agricultural groups of countries.

AGENDA: At the Conference one truth was admitted and stressed which has gradually tended to gain a foot-hold, namely, a good understanding of the matter of economy in the exchange of merchandise between the different countries or groups of countries. People

have been convinced that a working understanding can be reached only by preferential duty on European agricultural products, supplied to the industrial markets of Europe, thus violating the clause of the most favored nation. It has been found opportune and necessary for the industrial countries to reduce the import tax on agricultural products, thereby insuring the development of agricultural exporting nations. Undoubtedly this has been done on condition that the limit of tax reduction be determined by the interests of their own agriculture. Lastly, experts have advised doing away with disguised protection by setting aside all restrictive tariff measures and insuring thereby complete commercial liberty for cereals.

SINAIA CONFERENCE: In August, 1930, the economic Rumania-Yugoslavia conference was held at Sinaia. The aim of this conference was to create large economic units representing the great masses of consumers, and to adopt a commercial policy toward the foreigner which would satisfy the claims of the agrarian countries and lead to an economic European coöperation.

Because of the nature of these debates, and especially through the resolutions adopted, this conference marks a stage of progress toward the economic entente among peoples, so necessary to rational functioning. However, these resolutions present complex aspects which might introduce new elements, retarding the longed-for solutions. Representatives of the respective governments have studied whether, in view of the common interests to be protected, it might not be a case of establishing a tariff union between these two countries, and forming a very close economic association.

BASIS OF ECONOMIC ENTENTE: Much insistence was laid upon the principles established at the Bucharest Conference, and, once more in a very special manner, the matter of the necessity for preferential treatment was pointed out as fundamental, even before the expiration of the current commercial agreements. Among urgent measures to be adopted in a general way were: cereals to be sold in common, railway treaties to be concluded, also commercial treaties, and plant and animal sanitation agreements. An amicable solution would be found for any litigation which might result therefrom.

It was likewise decided to establish a provisional economic accord which would serve as a statute, until definite agreements were reached. This accord was signed August 4, 1931, by the representatives of these two States. It relates to the situation of the humble subjects of the two countries and to the law of the most favored nation. New sections were inserted therein, e.g., the reciprocal advantages consented to by the two countries concerning a customs duty which would

not be granted countries having already made commercial agreements based on the clause of the most favored nation. The matter of sanitation forms the subject of another section, and anticipates a series of measures advantageous to both countries. The last part is devoted to facilitating transportation.

THE WARSAW CONFERENCE: The Economic Agrarian Conference held in Warsaw, August, 1930, in which eight countries took part,¹ had for its aim, conformable to the decisions reached in the former Conferences, the creation of a common platform for the protection of agricultural interests threatened by the world economic crisis. Among the resolutions adopted, the most important are: Studying the means of organizing the exportation of agricultural products with a view to creating a more stable equilibrium between the possibilities of production and their outlets for the market; creating powerful loan associations; unification of statistical methods concerning the exportation of products; and construction of silos. Further, in order to bind more closely relations between the interested agricultural countries, periodic meetings of delegates from the respective institutions are encouraged. In the field of animal diseases, united war is to be waged against the foot-and-mouth disease, and improved sanitary conditions in cattle raising are encouraged.

Note, finally, that countries taking part in the conference agreed to the necessity that the industrial countries of Europe should grant to the agricultural exporting countries of Europe the law of preference. This decision assumes a greater importance because semi-industrial countries such as Czechoslovakia, Poland, etc., took part in this conference. Mention must, however, be made that the principle whose basis was preferential treatment, derogatory to the clause of the most favored nation regarding the agricultural products of Europe, in no way injures the interests of transoceanic countries, since it is a question of raising the 15% products requested for the European markets, the 85% being raised by the transoceanic countries.

The important Warsaw Conference has been epochal, for the resolutions there adopted formed the main subject of discussion of the XI General Assembly of the League of Nations of Geneva. The protocol of the Warsaw Conference actually constitutes part of the very difficult program of the economic union of Europe, the necessity for which is deeply felt. M. V. Madgearu, former Minister of Agriculture of Rumania, representing the eight nations that took part in the Warsaw Conference, expressed very clearly the conclusions

¹ Czechoslovakia, Bulgaria, Lithuania, Estonia, Rumania, Yugoslavia, Poland and Hungary. See also final section in Yugoslav chapter.

reached by the Second Committee which took charge of the economic policies of the League of Nations.

FOURTH CONFERENCE: The last Conference, which took place in Bucharest, October, 1930, aimed to continue the discussions already started. It assisted in formulating a procedure which today governs international commercial exchange. It, furthermore, constitutes a powerful weapon for the protection of the agrarian countries of Europe which nature has deprived of coal and iron, but to which in exchange she gives other riches.

The results of this Conference are crystallized in the following practical conclusions: A law has been proposed for the establishment of a permanent Committee of Study as an indispensable agent for insuring continuity of work. The Rumanian Government, on which the duty of making the necessary formalities devolves, is expected to convene the first session.

Beginning in November in order to obtain as complete a statistical document as possible, the interested nations will be obliged to report the general sales of their animal and vegetable products. With this information at hand, the amount of potential export stock can be appraised. This in turn will serve as a prime element on which to base regulations of commerce. In this way the economic agricultural contacts will be equally enriched by this knowledge.

Afterwards, at the Bucharest Conference it was decided that each separate country should study the problem of moderate rate loans. To facilitate this work, the Polish Government was requested to circulate a questionnaire which would contain all the necessary elements for studying this problem and reporting thereon.

INSTITUTE OF EXPORTS: In view of this coördination and the resultant control of exportation it has been suggested that there be created a National Institute of Exportation similar to those already existing in Poland and in Yugoslavia. Their existence alone can have some influence on the quantities of merchandise exported. It will permit the controlled shipping of stocks to importing markets, and prevent the accumulation of large quantities of merchandise in a relatively short space of time in certain commercial centers. Control organization and rational management of the commerce of agricultural products are now imperative. It is the hope that having the above aim in mind, eventually the agreements will certainly materialize. These will serve as a starting point for other similar ones, of even greater proportions, which will through economic channels contribute to the realization of the "Briand" plan.

The opinion of this Conference was that it is not advisable for agricultural countries to propose or accept, beyond the fixed date of Article IX, the commercial agreement of Geneva relating to the suppression of prohibitions and the restrictions on importation and exportation. If the agreement were followed it would result in establishing international exchanges only for an appreciable time in case the requests for markets for agricultural products were granted. Likewise it would provide for a general International Veterinary Convention in conformity with the resolutions passed at Warsaw, August, 1930.

PREFERENTIAL TARIFFS: Lastly, the intriguing problem of preferential tariff has likewise taken definite form. The delegates, experts from Hungary, Poland, Rumania and Yugoslavia have advised studying concrete means of applying preferential tariffs and studying the application of the clause of the most favored nations in relation to the preferential law. The object of the permanent Committee which must be formed will be to study immediately emergency measures that can be taken to insure the sale of agricultural products. The measures must be so taken as to cause the minimum harm to international commerce "and will be maintained only as long as the rule for regulating the importation of agricultural products shall be maintained in importing countries." This point of view was accepted without dissension in the group of four countries mentioned, because of the resemblance in their structure which places them in a difficult situation with regard to foreigners.

Permanent committees of economic studies, uniform statistical information and procedure, adoption of the principle of preferential tariffs, these and many other knotty considerations of common importance have been attacked and at least partly solved. From this, and from a reading of the protocol of the Bucharest Conference of Agricultural Experts, the impression grows that the new ideas governing the agrarian countries which took part in the Conference makes certain the realization of the program imposed through this new economic situation in Europe.

12. ASPECTS OF COÖPERATION

The cycle of agrarian conferences has continued, and during the first ten days of the month of December, 1931, the delegates of the agricultural states of Central and Eastern Europe were reunited at Sofia, capital of Bulgaria, under the leadership of M. Gitsef, minister of Agriculture for Bulgaria. Rumania had been represented by

M. G. Ionesco-Sisesti, Minister of Agriculture, who in his discourse expressed the following ideas:

The leaders of the agricultural states are obliged to meet periodically in order to find through friendly coöperation the means of sustaining agricultural industry in the grave economic crisis which at the present time has spanned the world. The agricultural countries are obliged to consider the study of agricultural problems of first importance, as the economic stability of the respective countries depends to a great extent on agriculture.

In the economic community — European and world-wide — the agrarian states have obligations which they have contracted and which they wish to respect. They can meet these obligations only by their agricultural produce. They ask the large countries, which are responsible for the future of Europe and of the world, to allow them a part in the division of international work. They ask not only the right to live but the right to work. The economic equilibrium of these states affords not only a means for meeting their obligations, but also a condition of prosperity for the industrial countries of central and western Europe. For one cannot shut his eyes to the phenomenon which is taking place in distant markets and to the growing difficulties in disposing of industrial products in the countries overseas and in the colonies.

The territory of the countries of the agricultural bloc, with a population of nearly one hundred million inhabitants, represents a vast and crowded area which is not to be ignored, and which, unfortunately, is losing its capacity for absorption because of the decreased buying power of its population.

Instead of considering these arguments for a United States of Europe, and despite constant recommendations of international conferences and competent organizations of the League of Nations, there is a continued growth in protective tariffs which closes the frontiers to the agricultural products, or which hinders their entrance by very reduced profits, and which does not realize the value of the labor of the agriculturists.

Since the agriculturists of the big industrial countries enjoy very high prices as a result of protection, the agricultural states export their products at prices extremely low, below the cost of production. This is to say that they export their capital of production, one might also say their substance and their vitality. It seems that if the economic barriers grow worse, Europe will fall into a sort of Middle Ages condition, as when the seigneurs shut themselves into their strong chateaux and sought a living by their own means, without exchanges,

or only by exchanges of violence. It will not be the fault of the European agricultural nations if, obliged by this trend, they now shut themselves in also against the importation of industrial products, or if they direct the economy of their respective countries to be self-sufficient and to dispense with the exchanges which have been denied them. In this extreme, which will be their last resort, the peasants of these states will find in their ability for adaptation and resistance the means of saving their countries and their civilizations.

Let us hope that the states will not be led to this last extreme, and that Europe will attain wisdom and unity.

In applying the system of preferential tariffs which the agricultural states have asked, and which have been allowed by the organizations of the Society of Nations, it is believed that a solution of the crisis will be found, and a return of confidence and prosperity.

In asking the large countries of Central and Western Europe to consider the actual situation, agricultural states ought to give the example of their own solidarity and try, by all possible means of reinforcing the economic ties between their own countries, to eliminate all hindrances to trade, to see even the practicability of a tariff union. In creating a wider territory by such a union, they would open new possibilities for their work and their trade. If the agricultural states act thus, they can be sure that they conform to the great imperative for a united Europe, and the peace of civilization.

After this address the questions on the agenda were as follows: The system of preferential tariffs, international agricultural credit, the establishment of a common plan of action for the international economic conferences of 1932, and in general the strengthening of the agricultural front against the industrial states of Western Europe in order to create an economic unity and a division of labor on the European continent.

SUMMARY: Through the debates which have taken place, there has been established a perfect accord between the delegates of the participating states (Estonia, Poland, Czechoslovakia, Hungary, Rumania, Yugoslavia and Bulgaria), an accord which is reflected in the motion voted at the close of the conference. The principal points of the motion are: The means by which to combat the restrictions imposed in the recent past by a large number of countries, on the importation of agricultural products; the means by which the powerful signers of the conference for the creation of the International Society are urged to accelerate the ratifications, so that this convention may be able to equal in strength those conventions approved as the confirmed principles of the preferential régime, adopted by the Commission of

studies for the union of Europe. Simultaneously, the conference has decided that the discussions which each agricultural country carries on with other countries, in view of conclusions of commercial agreements on the basis of the preferential régime, be communicated to all the states of the Agricultural Bloc, and that the discussions be conducted in such a way that they shall not injure the unity of the Bloc.

ASPECT OF THE COÖPERATIVE MOVEMENT AND THE RESOLUTIONS OF THE INTERCOÖPERATIVE REUNION (BULGARIA, YUGOSLAVIA, RUMANIA), HELD AT BUCHAREST, APRIL 16-17, 1932.

Simultaneously with the question developed by the European governments of the different particular associations for the unifying of European countries, coöperating countries of south-central Europe follow on their own account a parallel movement.

The difference between those two questions lies in the fact that while the project of a United Europe, general or limited, starts most often from political premises, the plan of coöperation is born in a strictly economic domain, and seeks to realize by its own means, without changing the political structure, and without making any changes in the economic structure, a coöperation holding the economic forces in its hands in the states participating.

To effect this, the following was decided upon by Rumania, Yugoslavia and Bulgaria: (1) The creation of national offices for the grain trade, and of the Interbalkan union of these offices having at their disposal a special grain appropriation; (2) the reduction by all practicable means of the consumption of grains produced in the Balkan states; (3) the development of the organization of the products of each country in selling coöperatives, and the creation of national coöperative groups united in their turn under the head of an Interbalkan Coöperative Union; (4) the creation among the members of the conference of a special under-commission for the development of a coöperative agricultural organization; and (5) the creation of a permanent committee for Interbalkan Commercial Trade.

All these measures were contained in the solutions proposed by the states under the pressure of the crisis which dominates the world economic situation and most particularly the economic situation of the agricultural peoples. On this plan has been grafted the political economy of Rumanian Coöperation, in view of the constitution of a coöperative bloc of the agricultural countries of the Balkan area.

For its realization, agricultural coöperation of Rumania, represented by the Central Coöperative of Importation-Exportation, held

a conference in December last, at Sofia, with the Bulgarian Agricultural Coöperatives. Its results were to emphasize: (1) The creation of a central coöperative bureau of the agricultural states of middle and south-central Europe for the sale and exportation of grains, and (2) the implementing of the agricultural coöperatives of each Balkan state to facilitate exportations for their respective coöperative organizations.

At the National Office of Coöperation of Bucharest, there was held on April 17-19, the conference of the delegates of the agricultural coöperatives of Rumania, Yugoslavia, and Bulgaria. The aim of this conference was the establishment of an agreement having to do with the following questions: 1. The concentration of exportation of agricultural products by the aid of coöperatives; 2. the organization of the exchange of products, and supply in general, and finally; 3. the régime of interior and exterior trade in agricultural products.

The conference was opened by M. G. Ionesco-Sisesti, Minister of Agriculture, who demonstrated to the members present that coöperation is the most efficacious means for doing away with the exaggerations of the capitalist régime, and for solidifying small energies and modest capitals in a strong economic fabric.

The condition of the grain trade cannot contribute to the normalization of trade and to the remedy for the crisis. The commercial organizations, and above all the coöperative organizations which represent the producers will be enabled to bring about a solution of the crisis if they work in a united fashion. The intensification of trade between the states participating in the conference; the creation of bureaus to function in the large markets of the West; the unification of commercial usages, contracts, and methods of standardization — these would constitute marked progress. The countries interested will be able in their turn to work more. When the prices of agricultural products are low for any reason whatsoever, they will be able to arrange to abstain from offering these products on the market. In this fashion, the recurrence of a fall in prices would be avoided among agricultural producers.

The resolutions of the Intercoöperative Union can be summed up as follows: The Union is of the opinion that only the coöperative solution is able to satisfy the interests of the producers and those of the general economists, thanks to rationalization. To this end, it is necessary to realize a concentration of the national plan by the creation of a central coöperative organization for trade in each of the countries represented.

In view of the realization of a common front of coöperative agri-

cultural organizations of Bulgaria, Yugoslavia, and Rumania, in what concerns their relations with the countries which import agricultural products, thus to avoid the competition between these organizations on the exterior markets, the Union proposes the creation of a common and permanent organization which would have, first of all, the task of raising the price of grains. It should have specially the mission of concentrating the offering and the sale of exportable grains, and of arranging the manipulation of the merchandise by a common means (transport, insurance, supervision, etc.). Its efforts ought to look towards the unification of the methods and of the technique of operations in order to terminate in a régime of contracts, usages, and uniform qualities, and of reserving for export only the merchandise of first quality and highest standards in world trade in grains.

Each of these national institutions will represent in its country the interests of the other participating institutions, having the general representation for all of the articles of which these institutions are purchasers or contributors in the respective markets.

This organization will be constituted under the form of an "Inter-coöperative Bureau of the Danubian Countries," having its headquarters at Bucharest.

The Union considers it necessary that the coöperative organizations of the agriculturists of other countries of the southeast of Europe be invited to this common action. In this aim, the text of the present solution will be communicated to the coöperative institutions of an agricultural character in these countries (in the first place to the agricultural coöperatives of Hungary). It would be desirable that the future conferences be held in this widened circle.

APPENDIX

TABLE I. CROP AREA, PRODUCTION, YIELD AND VALUE, 1930

CATEGORIES AND CULTURES	AREA	AVERAGE PER HA.	TOTAL	AV. SALE PRICE PER Q.	GROSS VALUE OF CROPS	AVERAGE VALUE OF PROD PER HA.
	Hectares	Quintals		Lei	Lei	Lei
1. CEREALS	11,035,771	....	....	....	31,336,255,125	....
Oats	1,087,057	10.6	11,565,361	190	2,197,418,590	2,021
Wheat	3,055,904	11.6	35,590,379	310	11,033,017,490	3,610
Corn	4,426,689	10.2	45,199,201	235	10,621,812,235	2,399
Millet	90,173	8.7	788,412	250	197,103,000	2,185
Barley	1,975,191	12.0	23,713,061	170	4,031,220,370	2,040
Buckwheat	2,609	6.5	17,653	240	4,236,720	1,569
Rye	391,616	11.9	4,645,292	220	1,021,964,240	2,609
Sorgo	6,442	19.2	124,046	180	22,328,280	3,466
Straw	11,035,771	20.0	220,715,420	10	2,207,154,200	200
2. VEGETABLE PLANTS	415,067	....	....	....	7,694,039,575	....
Beans (dry)	1,806	9.4	16,948	725	12,287,300	6,803
Beans (green)	{ 89,190	7.6	677,566	725	491,235,350	5,597
	{ 766,437	1.7	1,352,600	725	980,635,000	1,279
Lentils	16,340	8.1	131,191	775	101,673,025	6,222
Peas	17,412	12.8	233,688	600	134,212,800	7,708
Onions	16,622	71.2	1,184,083	230	272,339,090	16,384
Potatoes	{ 189,562	95.1	18,140,566	160	2,902,490,560	15,311
	{ (66,479)	21.6	1,438,843	160	230,214,880	3,462
Cabbage	19,914	145.5	2,899,044	320	927,694,080	46,585
Melons	31,264	100.9	3,153,477	150	473,021,550	15,129
Pumpkins	{ 5,807	68.7	399,084	75	29,931,300	5,154
	{ (846,056)	15.5	13,138,304	75	985,372,800	1,164
Other vegetables	27,150	36.6	955,824	160	152,913,840	5,632

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TABLE I—Continued

3. INDUSTRIAL PLANTS	399,200	2,384,062,419
Hemp		(5.1)	169,206	2,500	423,240,000	12,620
Hemp-flax	33,536	3.3	112,486	650	73,115,900	2,180
Linen (fiber)	17,615	1.5	26,913	3,000	80,739,000	4,583
Linseed . . . . .	....	5.6	99,716	850	84,758,600	4,811
Rape	77,822	6.4	499,298	350	174,754,300	2,245
Poppy	1,455	4.5	6,524	1,500	9,786,000	6,725
Sunflower	183,748	8.3	1,519,229	400	617,477,600	3,200
Sugarbeets	45,765	185.4	4,485,760	105	471,004,800	10,291
Chicory	700	135.7	95,020	125	11,877,500	16,967
Tobacco	34,427	6.9	240,458	1,781	428,483,619	12,446
Mustard	354	0.7	3,437	300	1,031,100	2,912
Other plants	3,778	6.8	25,980	300	7,794,000	2,062
4. ARTIFICIAL PRAIRIES AND NATURAL MEADOWS	1,970,921	....	....	....	6,204,472,955	....
Alfalfa	115,994	35.2	4,085,334	155	633,226,770	5,459
Clover	136,522	30.2	4,124,667	155	639,323,385	4,682
Other forages	178,431	22.7	4,052,041	155	628,066,355	3,519
Roots (forage)	32,262	152.6	4,992,697	100	499,269,700	15,475
Millet	194,861	23.2	4,530,678	155	702,255,090	3,603
Natural Meadows	1,312,851	20.5	26,976,797	115	3,102,331,655	2,363
5. ARBORESCENT CULTURES AND SHRUBBERY	449,146	....	....	....	8,403,359,100	....
Prune trees	209,321	14.6	3,054,705	500	1,527,352,500	7,296
Producing vineyards	239,825	34.9	8,385,374	820	6,876,006,600	28,670
Grand Total	14,270,105	....	....	....	56,022,189,174	3,925

TABLE II. NUMBER OF DOMESTIC ANIMALS IN RUMANIA

ANIMALS	1930	1929	1928
<i>Equine Species</i>	1,809,211	1,867,397	1,849,839
Stallions	53,523	61,687	57,425
Horses	740,036	753,799	740,648
Mares	724,334	740,624	718,978
Foals (colts)	291,318	311,287	324,388
Asses	9,001	9,726	8,984
Mules	1,347	1,551	1,639
<i>Bovine Species</i>	3,834,133	4,171,861	4,256,364
Bulls	28,952	33,800	31,146
Oxen	1,044,013	1,157,338	1,214,146
Cows (milk)	1,411,268	1,471,668	1,438,511
Cows, sterile	459,371	486,316	493,842
Calves	890,529	1,022,739	1,078,236
Buffaloes	177,008	183,252	185,877
" milk	78,999	88,108	85,029
" sterile	36,480	34,559	31,161
" young	27,381	40,098	43,277
Bulls	2,109	2,046	2,466
Buffaloes	22,039	18,441	23,884
<i>Ovine Species</i>	11,920,502	12,092,021	12,422,881
Rams	436,591	475,007	542,863
Sheep (ewe)	9,443,536	9,594,348	9,484,514
Lambs	2,040,375	2,022,666	2,395,504
<i>Caprine Species</i>	352,845	362,388	374,450
Goats — Bucks	14,975	15,793	18,212
Goats	269,159	287,754	278,455
Kids	68,711	67,841	77,783
<i>Porcine Species</i>	2,322,971	2,299,599	2,684,048
Boars	81,941	114,086	111,504
Sows	790,041	812,050	924,306
Young pigs	1,450,989	1,373,433	1,648,238

TABLE III. GENERAL CONDITIONS OF COÖPERATIVES OF CONSUMPTION AND AGRICULTURAL COÖPERATIVES

	ANCIENT KINGDOM	POST-WAR RUMANIA		
	1912	1924	1928	1929
Number of societies	318	2,516	2,254	1,665
" " members	14,015	288,722	244,959	185,122
Average	44	115	109	111
Average social capital	17	98.6	168	159.7
Capital in millions of lei:				
Reserve	0.5	57.6	147.9	134.8
Capital loaned	11.0	260.9	655.8	579.9
Deposits . . . . .	....	....	....	....
Total	28.5	471.1	971.7	874.4
Interest on capital loaned in %	35	62	68	67
Average capital in thousands of lei:				
Of the society	10,312	165,779	431,100	525,165
Loaned	235	1,455	3,967	4,723
Sale in millions of lei	7.7	844	1,036	790
Average in lei:				
Of the society	24,195	335,583	459,627	474,395
Loaned	549	2,924	4,229	4,267

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CHAPTER EIGHT

THE ECONOMIC POSITION AND FUTURE
OF THE AGRICULTURE OF YUGOSLAVIA

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THE ECONOMIC POSITION AND FUTURE OF THE AGRICULTURE OF YUGOSLAVIA

I. PHYSICAL FACTORS

The Kingdom of Yugoslavia is located in southeastern Europe, and extends from $40^{\circ} 50'$ to $46^{\circ} 51'$ North Latitude and from $13^{\circ} 40'$ to $23^{\circ} 05'$ East Longitude (Greenwich). The country is bounded on the north by Austria, Hungary, and Rumania; on the west by Austria, Italy, and the Adriatic Sea; on the south by Albania and Greece; and on the east by Bulgaria and Rumania.

CLIMATE: The territory included in the Kingdom is divided by Prof. A. Stebut into four general climate regions. One of these regions lies completely within the boundaries of the country, whereas the other three regions form a part of large climate regions that extend into other European countries. The four climate types represented by the different regions are: the Highland, Atlantic, Mediterranean and Eastern Continental.

1. The Highland climate is humid, cold, with short summers and long severe winters. It is found in the entire system of the Dinar Alps and Pind mountain ranges, that extend across Yugoslavia from the northwest to the southeast and only a short distance inland from the Adriatic shore line. The mountain region also determines the direction and extent of penetration of the other three climates.
2. The Atlantic climate is humid, regular, and moderately warm with long summers. This climate is found in the northwest section.
3. The Mediterranean climate is distinguished by a high annual rainfall, most of which occurs during the warm winter months, and by long, hot, and dry summers. It is found along the entire Adriatic.
4. The Eastern Continental climate is very irregular with a low rainfall, most of which occurs in the summer and evaporates on account of hot weather. The winters are cold and severe, but relatively short, whereas the summers are long, hot, and dry. This type of climate predominates in a large area in the north and especially in the northeast part.

In addition to these four general regions there are three sub-regions: (a) the Vardar region, along the Vardar River in the southeast, influenced by the Eastern Continental, the Mediterranean and the

Highland climates; (b) the Morava region along the Morava River in the east, affected by the Eastern Continental and the Highland climates; and (c) the Posava region in the vicinity of the Sava River in north-central Yugoslavia, which is affected by the Atlantic and Eastern Continental climates.

ECOLOGY: The prevailing climate in the different parts of the country has had a decided effect upon the plant growth, and the soil classes that have been developed. Consequently there is close agreement between the climate regions, the distribution of plant growth and the regions where different soils predominate.

In subdividing the country into regions of different plant growth Professor Stebut established four separate regions: the typical Region of Woods, the Region of Unstable Woods, the Mediterranean Region, and the Region of the Steppes. (1) The largest region is the Typical Region of Woods which is found in the central and western part of the country (Highland). (2) The Region of Unstable Woods is second in size and is found in the south and east where the Highland climate is modified to a large extent by the Eastern Continental. (3) The Mediterranean Region is the smallest of the four, and is situated along the Adriatic coast where the Mediterranean climate predominates. The region is very stony, rough, and is covered with bush (*Machia*) growth. (4) The Region of the Steppes is third in size and forms a part of the large Danube plains. The Eastern Continental climate predominates in this region, and the original plant growth of the region, except for timber areas along streams, was prairie grasses.

SOILS: There are three main types of soils in the four plant growth regions. They are the "Chernozem" (black soil), the "Podsol" (leached soil), and the "Crvenica" (Red soil or *Terre Rossa*). The "Chernozem" type is found in the region of the Steppes, the "Podsol" in the regions of Typical and Unstable Woods, and the "Crvenica" is found in the Mediterranean region. "Chernozem" is a product of the Eastern Continental climate. It is the result of accumulated humus, has a high calcium content, is sandy, and is dark or black in color. "Podsol" is a product of humid climate. The top layer of the soil has been leached, therefore it has a high acid content and is heavy. It normally has a relatively high percentage of humus. "Crvenica" is a type of *Terra Rossa* soil and is a product of the Mediterranean climate. The scarce plant growth has added little humus to the soil, which is red and heavy. The red color is the result of the accumulation of iron.

In addition to the main soil types mentioned above there are two

other types that make up important areas in some sections of the country. These two types are: "Gayniatcha" which is found in extensive areas in north and south Serbia which now forms the east-central section of Yugoslavia, and "Smonica" which is also found in relatively extensive areas in north and south Serbia. "Gayniatcha" is somewhat similar to "Podsol," but is not leached to the extent that "Podsol" is, and cannot be classified as either a typical sour or typical sweet soil. It does not have an exceptionally large proportion of humus. "Smonica" is very similar to "Gayniatcha," but is more fertile, has an abundance of humus and is black in color.

There are also other types of soils that are less important, and are found in rather limited areas in different sections of the country. The two most important types of this group are: "Scelet soils," which are stony, and are found on steep mountain slopes; and "Salty soils" which are found in low areas in the region where "Chernozem" predominates, and are the result of the accumulation and subsequent evaporation of water which leaves large salt deposits.

2. POPULATION AND LAND USES

Yugoslavia has a total area of 248,655 square kilometers, and according to the census of 1931 the population was 13,930,918, an average of 56.02 inhabitants per sq. km. The density of the population decreases continuously from north to south. In some of the northern sections there are as many as 128 inhabitants per sq. km., whereas in southern Serbia the average is 32.3 and in Montenegro only 20.7 per sq. km.

FARM POPULATION: The agricultural population, according to the census of 1931, was 9,215,514, this total comprising 78.78% of the total population. Our territory is still sparsely settled and could easily support twice as many people as are now living on it. Not only is our Kingdom very young, it is also undeveloped. Generally speaking the degree of density of population corresponds exactly to the degree of intensity in agricultural production.

The total area of the country is divided as follows:

<i>Areas</i>	<i>Hectares</i>	<i>Per cent of Total</i>
Cultivable ¹	13,721,419	55.18
Forest ²	7,586,026	30.51
Uncultivated other than forests	3,559,055	14.31
Total	24,866,500	100.00

¹ Data obtained in 1930. ² Data obtained in 1925.

The uncultivated land other than forests is comprised partly of waste land, and partly of land which could be brought into cultivation. Thus there is a sufficient land reserve for an extension in the cultivated area, further expansion in colonization and for use in other agrarian purposes.

In 1930, the cultivated area of the country was divided according to different uses as follows:

	<i>Hectares</i>	<i>Per cent of Total</i>
Arable lands (field crops)	7,076,481	51.57
Gardens	139,037	1.01
Meadows	1,819,791	13.26
Pastures	4,095,684	29.85
Vineyards	183,530	1.34
Orchards	242,320	1.77
Marshes and other waste lands	164,576	1.20
Total	13,721,419	100.00

It is obvious that a large part of the total is occupied with meadows and pastures. Such a large surface in meadows and pastures indicates the facilities for keeping great numbers of all kinds of domestic animals, and also the possibility of an extension in arable land.

3. BRIEF HISTORY OF AGRICULTURE, 1918-1931

TURKISH INFLUENCE: Political and economic freedom within a country is undoubtedly one of the most essential factors for a complete and rapid development of any branch of activity in which a part of its population is engaged. For centuries past the Yugoslav people did not enjoy this freedom, and this factor has been a principal reason for the lack of development in the agriculture of the country. Serbia was under Turkish rule for almost five centuries. The people were politically and economically enslaved. However, they were constantly fighting for their freedom, and their opposition to the Turks served as a barrier against the penetration of Turkish dominance into Western Europe. Southern Serbia (Old Serbia and Macedonia) was under Turkish rule until 1912.

Montenegro was able to maintain its freedom, but its poverty, the infertility of the soil, and its continual struggles against the Turks to hold its independence, made it impossible for the people of this small mountainous country to attain the economic level of several other more advanced European countries.

AUSTRIAN INFLUENCE: The provinces of Croatia, Dalmatia, Slovenia, Voivodina, and others now included in Yugoslavia formerly

belonged to the Austro-Hungarian Monarchy, and this Monarchy in dealing with these provinces never considered their economic necessities. Furthermore, the Yugoslav people who made up a large part of the population of the provinces were treated in quite a different manner than were the true Austrians and Hungarians.

FREEDOM: During the War the Yugoslav people with the aid of their allies succeeded in winning complete political freedom, and at the close of the War were able to unite and form a strong national State. After political freedom had been attained, and the different provinces were united into one country, it was necessary to give economic freedom to the enslaved people in some of the provinces. This was done by making them owners of the land on which they lived.

SERFDOM ABOLISHED: The first steps in giving ownership of land to the people who lived on it were taken under the 1919 law called, "Preliminary Regulations for the Preparation of the Agrarian Reform." The most radical reforms under this law were: the abolition of feudal and similar holdings; the expropriation of large estates; the cancellation of existing rent agreements; and the provisional distribution of the land in former large holdings among the poor liberated peasants. These were to serve until a definite plan for the redistribution of land could be established.

The application of this, as well as several other laws that were passed at later dates, has resulted in the distribution of approximately 1,805,000 ha. of former large holdings to about 497,000 peasant families. In addition to distributing these lands, the State negotiated a loan of 172,702,595 dinars which has been made available to these settlers to help them build about 20,000 houses and procure the necessary materials, implements, machines, and livestock needed for operating their farms.

We may consider that the real development in Yugoslav agriculture began after the War. Therefore in studying its progress we are confined to this period. This progress, however, has been very greatly handicapped by the enormous losses suffered during the War, which amounted to several billions of dinars. A part of our provinces were occupied by foreign armies, and at the close of the War it required large outlays to rebuild that which had been lost. Therefore, the development of agriculture was greatly handicapped.

PROBLEMS: Immediately after the liberation and unity of the country were realized, agriculture met three very difficult and complicated problems. These problems have persisted, and as yet have been but partially solved. They are: (1) replacing of machinery,

implements, seed, livestock, and other articles that are essential for agricultural production; (2) the readjustment of agricultural production to conform to post-war conditions; and (3) the difficulties resulting from the necessity of intensifying, improving, and reducing the costs of agricultural production.

During the War, and the long period in which foreign armies occupied a part of our territory, a great part of the agricultural machinery and implements were either taken out of the country or destroyed. In addition to this the equipment which remained within the country received continual use and was not replaced as it was worn out. The number of cattle and horses, and especially agricultural draft animals, was much reduced during the War.

FINANCES: The great losses to farmers in the essential items for agricultural production, that were incurred as a result of the War, could not be completely repaid either by the foreign states which occasioned them, or by our own state. Therefore, the efforts of our farmers since the liberation has been directed to completing the equipment on their farms. This has not been an easy task for them in spite of the fact that the Yugoslav farmers are noted for the tenacity with which they undertake difficult tasks. Three successive very dry years, 1921, 1922, and 1923, occurred, and in addition there was a rapid decline in the prices of agricultural products. Thus, the farmers were unable to obtain sufficient capital to purchase the necessary equipment. The difficulties encountered have been increased still further by the fact that prices for the needed equipment have been constantly increasing, whereas prices for agricultural products have been decreasing.

MARKETS: Our current statistical data still show that the number of agricultural machines and implements are insufficient to apply the proper mechanical forces required in farming, especially in our country where cereal crops form a large part of total production.

After the liberation of the Yugoslav people our country came in closer touch with world markets either by water or by road. The political, economic, and financial changes that occurred in many states as a consequence of the War have also created new foreign markets for the Yugoslav farmer. These markets, open to Yugoslav farm products, have quite different requirements from the pre-War markets. In addition to this change new national markets have been created in big cities where, since the War, there has been a constant increase in population.

These changes in the markets for Yugoslav agricultural products have had a great influence upon agriculture and have forced our farmers to introduce changes in their methods of production, and also to

shift from one crop to another. This readjustment in production to meet new market conditions is being made very slowly, the tempo preventing rapid progress in agriculture.

CHANGES: Agriculture in the greatest part of our country is still in a self-sufficing stage; i.e., most of the agricultural production is consumed by the farmers themselves and only small quantities are sold. However, with the increase in the number of markets both at home and abroad, our agriculture is changing from this to the commercial stage. This change must be aided by a sound agrarian policy in order to help the farmers to provide the necessities of life, and be able to pay the increasing taxes. The third of the three problems mentioned above, that of intensifying, improving, and reducing the cost of production became more acute than ever after the War. Taxes and other expenses that had been paid by the farmer were naturally increased, and it became necessary for him to obtain a larger net return per hectare.

The creation of the new state, and its complete organization brought increased expenses. State debts, pre- and post-War, had to be paid and the total outlay of the Government was greatly increased. This increase in tax burden was not accompanied by a corresponding improvement in agriculture and an increase in the net income of the farmers. The selection of seed and improvement in domestic animals have not as yet become general in even the best farming areas. The use of fertilizers is yet unknown to great numbers of the farmers, and systems of crop rotation are not generally practiced.

PRESENT POSITION: The Yugoslav agriculture is still somewhat undeveloped, can be classed as extensive, and obtains relatively low crop yields. For example, the average yield of wheat per ha. is not more than 10 quintals, and the yield of corn not more than 18 q. The returns obtained from such low yields together with small farms does not permit our farmers to improve their standard of living and the agriculture of the country rapidly. It is essential that we endeavor to create general conditions that are necessary for the development and progress of agriculture, and at the same time improve the efficiency of the farmer in order that he be able to improve his soil, plants, animals, and methods of farming. A great deal has already been done in this direction. Our Government is conscious of the importance of the rôle that farming plays in the economic life of our country, and is making great efforts to meet the difficult situation through the Department of Agriculture; but owing to existing conditions it is impossible for our agriculture to make the rapid progress we should like it to make.

4. AGRARIAN REFORM AND STRUCTURE

Before the War the land in the different provinces which now constitute the Kingdom of Yugoslavia was not evenly divided, and great numbers of peasants had very small farms or no farms at all. In northern Serbia 82% of the farms were 10 ha. or smaller in size, and only 0.02% of the farms were above 100 ha.; whereas in Croatia and Slavonia the large estates above 100 ha. represented about 27.2% of the total number, and in Voivodina (provinces of Banat and Batchka) about 41.8% of the total. In other sections of the country such as Bosnia, southern Serbia, and Dalmatia, great areas of farm land had been under feudal and similar holdings.

Before the agrarian reform in Yugoslavia there were about 600,000 peasant families, or about 30% of the total number of peasant families, who had no land at all, and about 280,000 additional families who did not have enough land to support themselves. Consequently the desire for land which necessitated the agrarian reform was not, as some people maintain, a war-psychology or a war-consequence. The desire arose from a real necessity which existed even before the War.

EXPROPRIATION: The application of the Reform Law of 1919 resulted in the abolition of all feudal and similar holdings, and also the taking over of other large estates. In expropriating large estates that could not be classified as feudal or similar holdings, the size that was classified as a large estate varied from 50 to 300 hectares, depending on the province in which it was located, and whether or not it was property under "fideicomis." The land taken over was redistributed among the peasants that had no land at all, or whose holdings were too small for them to provide family support.

SERF CONDITIONS: Before the Reform feudal holdings were in existence in the provinces of Bosnia and Hercegovina. These holdings were old forms of serfdom in which the serf-tenant operated the land of the owner on a share-rent basis. The usual rent was one-third or one-half of the gross production of grain, and one-fourth or one-fifth of the production of hay. With the agrarian reform the serf-tenants were freed, and were recognized as the lawful owners of the land which they had been operating for their former landlord. The landlords who originally held such land were paid for it partly in cash and partly in the form of 4% bonds. The total sum paid for such holdings amounted to 250,000,000 dinars.

EFFECTS: The total area of cultivated land, grazing land, and woodland which was formerly held in feudal holdings amounted to

775,233 ha., and there were 113,103 families of serf-tenants who were freed and made lawful owners of the land. Nearly all of the serf-tenant families, as well as other farm families in Bosnia and Hercegovina received parcels of "Begluk" land (land which formerly belonged to the higher Turkish governing officials, Pashas, and Begs). This land was formerly registered in the land survey books as property not included in feudal holdings, but at the same time it was land that had been cultivated by serf-tenants for a great number of years. There are about 200,000 ha. of this land, and it was purchased by the Government for 375,000,000 d. The land was paid for in Government 6% bonds.

In addition to the above mentioned lands, there were 34,364 ha. of Government land in Bosnia and Hercegovina divided among former military volunteers, colonists, and local poor people. Some 13,806 families received such land. The total number of families that have been given land in Bosnia and Hercegovina has reached 126,909, and they have received about 1,009,597 hectares.

In Voivodina, Srem, Croatia, Slavonia including Baranya, and Slovenia, farm properties with arable land as large as 300 ha. existed. The large holdings in these sections have been taken over and subdivided among former military volunteers, colonists from the poor agricultural sections of the country, immigrants from some of the bordering countries, and local poor people who either had no land at all or only small amounts. The area of this expropriated land amounts to 315,382 ha., and the land was allotted to 232,576 families. All of the families to whom such land was given, except the military volunteers, are paying for the land given to them. The Government is paying for the land given to military volunteers.

LAND PRICE: The average price paid for such land is about 3,000 dinars per "yoke" (0.57 ha.). When land was allotted to military volunteers, the former owners had the option of receiving payment for the land either directly from the people who obtained it or in bonds from the Privileged Agrarian Bank. If bonds were accepted the person to whom the land was given had to pay for it at the Privileged Agrarian Bank. The total amount that the Government will eventually pay for land allotted to military volunteers is about 480,000,000 d.

DALMATIA: In Dalmatia, various forms of serfdom and serf-tenancy were in existence before the agrarian reform. All of the different types of feudal holdings in that province were abolished and the serfs and serf-tenants became the owners of the land which they had been cultivating. The Government has paid the former owners

of the land with 5% bonds. These bonds are being paid off by both the Government and the present owners of the land. The share to be paid by the Government amounts to about 300,000,000 d. There are about 90,000 ha. of this land, and it has been distributed among something like 100,000 families.

SOUTH SERBIA: In south Serbia the feudal holdings, and the forms of serfdom and serf-tenancy that existed before the Reform were also abolished, and the land was given to the people that had been cultivating it. The former owners of the land have received payment for it from the Government in the form of 5% bonds.

Land on which serf-tenants had been living since 1902 was given to them by the Government, and the Government is obligated to pay off the bonds used in purchasing such land. The total value of these bonds amounts to about 60,000,000 d. In cases where the serf-tenants had not been on the land prior to 1902 they were required to pay the Government for the land that was given to them. The total amount of land in south Serbia that has been redistributed among serf-tenants amounts to approximately 250,000 ha. and it has been given to about 20,000 families. In addition to this land about 140,000 ha. of land that formerly belonged to the national and community Governments have been given to colonists and the local poor people. About 18,000 families have received such land.

AGRARIAN STRUCTURE: The agrarian structure of our country at present is not known, but a census covering the ownership of land was made in 1931, and the returns of this census when completed will show the exact structure. However, the division of large estates and colonization have increased the number of small holdings to the extent that it makes Yugoslavia a country of small holdings and small individual exploitations.

Many errors have undoubtedly been made in the manner of conducting the agrarian reform, as laws have been applied too quickly. Errors made in the beginning have had a bad consequence upon production in general. However, the economic liberation of the peasants, and the increase in the number of small holdings at the expense of large estates will form a good basis for the intensification of agriculture. Therefore the future of agriculture is encouraging.

5. AGRICULTURAL PRODUCTION

CEREALS: The production of cereals has first place in the field crops produced in Yugoslavia. The area under cereal crops has been increasing steadily during the past few years, and the annual produc-

tion also shows an upward trend. However, there is a wide difference in the production from year to year as a result of the influence of weather on the average yield. Frequently there are long persistent summer droughts in the areas where cereal crops are of the greatest importance, and the cereal production is reduced far below the normal production.¹

The planted area of cereal crops shows a steady increase from an average of 4,753,000 ha. for 1921-25 to 5,877,000 ha. for 1930. In 1926 it was 5,031,000 ha.; 1927, 5,264,000 ha.; 1928, 5,307,000 ha. and in 1929, 5,877,000 ha.

The production of the five most important cereals during the ten years 1921-1930 varied between 44,050,000 and 77,059,000 quintals.²

Corn and wheat are the chief cereal crops of the country, as about two-thirds of the arable land is used in the production of these crops. The wheat produced in the northern part of Yugoslavia, called "Banat wheat," is in great demand in international commerce as it has a high hectoliter weight, sometimes reaching as much as 88 kilograms, with also a very high percentage of gluten.

Corn has first place among the cereals of the country. The varieties grown can be grouped into early, medium, and late. The most important varieties, grown for export are the medium early varieties particularly "osmak" (eight row flint corn), and late varieties of American origin, particularly dent varieties.

INDUSTRIES: There are a number of commercial industries which use cereals as raw products, playing an important rôle in our economic life. Chief among these are the milling, beer, and alcohol industries.

Yugoslavia has a large number of flour mills, including some of the most modern type and also many that are very primitive. The total productive capacity of all the mills of the country is about 9,000 metric tons of flour per day. At present only a small proportion of this capacity is being used, because the export of flour is made very difficult, as a result of protective measures taken by importing countries which favor the importation of wheat instead of flour. The export of flour from our country is decreasing each year, and a number of our big mills have been forced to close.

In addition to the production of fruit brandy, great quantities of corn and sugar-beet molasses are transformed into industrial alcohol. The country has about 47 industrial alcohol distilleries on large farms, and 8 commercial distilleries. The combined production of

¹ See Appendix, Table I.

² See Appendix, Table II.

these distilleries is about 500,000 hl. per year. Of this amount about 100,000 hl. are used for domestic consumption, the remainder being exported.

The country has about 40 beer factories with a productive capacity of about 1,500,000 hl. per year, but only about one-half or their capacity is being used. During the years immediately following the liberation of our country these factories had great difficulty in obtaining sufficient quantities of beer barley, but the production of this type of barley within the country has been increasing, and the returns from this crop will soon reach the point where we shall not be required to import beer barley from abroad. The production of beer in our country amounts annually to 600,000 to 700,000 hl., and is practically equal to the total consumption of the country.

LEGUMES: The area devoted to leguminous plants is of very minor importance as compared to the area devoted to cereals. The annual area of legumes exclusive of clover and alfalfa averages about 80,000 ha. Legume plants that yield seed of commercial importance are produced primarily for grain and little attention is paid to them as a means of improving the fertility of the soil. The production of the leading legume crops¹ in 1930 was 1,827,000 q. The leading leguminous grain plant raised in our country is the edible bean. It is cultivated alone or interplanted with corn. In the ten years 1921-1930 the production has ranged from 316,000 to 1,521,000 quintals.

ROOT CROPS: Root and tuber crops have a very important place in our cropping system, as the area devoted to these crops is well above that devoted to any other group of cultivated crops except cereals. This is especially true when sugar beets, which are normally classed as an industrial crop, are included with the other root and tuber crops. The area harvested in 1930 was 327,184 ha. and the production was 26,190,739 quintals.²

The most important crop in this group of plants is that of potatoes, which are largely cultivated in the districts north of the Sava and Danube Rivers. The production of potatoes in 1930 was 14,705,000 quintals.³ Our soil and climate is well suited for the production of potatoes, but the growing of this crop has not been developed to the point where the annual production is much in excess of home consumption requirements, consequently export of this crop is of very minor importance.

¹ See Appendix, Table III for details.

² See Appendix, Tables IV and V.

³ See Appendix, Table IV-A.

INDUSTRIAL CROPS: Under the head of industrial¹ crops is included all crops that are raised almost exclusively for sale. These crops hold a relatively important place in our cropping system, and with the exception of cereals and possibly fruits they are the most important source of cash income to our farmers.

The cultivation of sugar beets is largely limited to the quantity required to produce the home consumption of sugar. Most of our sugar beet seed are imported from Czechoslovakia, Germany, and Poland, but in recent years a great effort has been made to produce our own seed requirement. There are eight large sugar refineries with a productive capacity of about 100,000 metric tons of sugar per year. These refineries are not able to produce economically enough to meet foreign competition, therefore their output is limited to the domestic requirements of sugar, which is about 85,000 tons per year. Our soil and climate are well suited to the production of sugar beets, and in recent years there has been a movement to build sugar refineries on a coöperative basis, and thus reduce the cost of production to the point where our sugar can be sold on foreign markets. One farmer-owned coöperative refinery has already been established and it is expected that others will be brought into existence.

Cotton is grown in southern Serbia, but as yet the production is on a very small scale. The yearly import of the products of this plant is very large, and the possibilities of extending and the urge to establish its culture are very promising. Flax is not extensively grown, and its production is used almost entirely for our domestic requirements. Our soil and climate in different parts of the country are suitable for its production, and it could be grown on a more extensive scale.

Hemp is grown on a relatively large scale and offers raw material to a large number of factories. Our yearly output is well above home consumption requirements and hemp products have an important place in our export. We have about 50 factories that are engaged in the separation of hemp fiber from the unprocessed hemp stalks. These factories do not produce hemp products, but there are a number of other factories within the country that are engaged in the manufacturing of final products from hemp fiber.

Rape and other oil plants are not extensively grown, and there is a very important import of the grains and oils of these plants. Therefore, it is hoped that the production of these plants will soon be increased. There are a great number of factories engaged in extraction of oil from the seed of industrial plants (principally rape, pumpkin,

¹ See Appendix, Table V.

and poppy seed), and from olives. Most of the output of these factories, with the exception of pumpkin seed oil, is consumed within the country.

The production of poppies is confined to southern Serbia where this culture was introduced by the Turks during the period when this part of our country was under Turkish rule. The plant is raised both for the production of opium and of oil. Practically all of the opium is exported, but most of the oil is domestically used.

Tobacco is grown throughout the entire Kingdom, but the most important productive areas are Hercegovina and southern Serbia. The production in these areas is of very high quality. The entire tobacco industry, including the production, processing, and sale of tobacco, is under monopoly control of the Government, and farmers are required to obtain a permit from the Government before they are legally allowed to grow tobacco. The permit also fixes the area that the farmer is allowed to grow.

The prevailing high prices for hops, that existed until recent years, resulted in a large production of this crop in the northern part of our country. In recent years, however, world production has surpassed the demand for hops and prices have been greatly reduced. Therefore, the area devoted to this crop has declined rapidly. In 1927 the area devoted to hops amounted to 9,176 ha., but by 1930 it had been reduced to 3,225 ha.

Chicory is cultivated on a relatively small scale. However, the annual acreage of this plant is steadily increasing, because it is well adapted to our soil and climate, and as yet we are not producing enough for our home consumption.

GARDEN CROPS have a very important place in the agriculture of Yugoslavia, even though they do not furnish a large part of the farmer's cash income. Each farmer has a farm garden, and this garden furnishes a large part of the family's food requirements. Gardening on a commercial scale is not developed except in the immediate vicinity of the larger towns, and the production from such developments is practically all sold within the neighboring town. There is practically no export of garden products, and only small quantities of such products are shipped to internal markets that are located outside of the vicinity where the crops are produced. The conditions for growing garden crops are very favorable in almost all parts of the country, and the products are usually of high quality. This is especially true in regard to cabbage and melons.

FODDERS: The production of fodder crops in the Kingdom is increasing from year to year, and these crops, especially legume hays,

are becoming of more importance in crop rotation. About a million hectares of forage crops were harvested in 1930, producing about 40,000,000 quintals of fodder, of which clover and alfalfa¹ accounted for about 180,000 ha. and 6,315,000 q.

TREE FRUITS: The production of tree fruits is of major importance in all sections of Yugoslavia except on a part of the plains country north of the Danube. The production in Serbia, however, is of greatest importance and results from the large number of district nurseries that were established by local authorities before the War. The wide range of climate makes it possible for almost all kinds of fruits to be grown within the boundaries of Yugoslavia, though important surpluses are not produced except in the case of plums, apples, pears, and walnuts. The total average production of all tree fruits for the entire Kingdom is about 9,500,000 q., but the annual production varies considerably from year to year as a result of the influence of climatic conditions.²

Plums are the leading tree fruit, and the most important variety of plums cultivated in the Kingdom, especially in Serbia and Bosnia, is the local fall variety, called "pojegaca." This variety is well suited for drying, and almost the entire production of dried prunes is of the "pojegaca" variety. The number of plum trees has been greatly reduced during the last few years as a result of the dying out of old orchards, and the general spread of diseases. Therefore, measures are being taken to replace the destroyed orchards, and to encourage spraying and better care of the trees.

Our large production of plums has resulted in the development of three important industries, that are dependent upon plum production. They are: (1) drying plums, (2) production of plum marmalade, and (3) the distilling of plum brandy. The drying of plums is practiced in all of the important centers of production in Serbia and Bosnia. Home-made drying houses of the French and American type are most commonly used. There are some 36 large packing houses in the country that are engaged in grading, processing, and packing the dried prunes. They are usually packed in boxes holding 12.5 to 25.0 kg. The production of plum marmalade is largely a household industry, but there are also a number of special modern plants for the manufacturing of this product. The plums have a high sugar content and the marmalade is produced without adding any sugar. The production of plum brandy called "shlivovitza" is well developed in all regions where plums are produced. Most of the production is used

¹ See Appendix, Table VI for details.

² For details regarding number of fruit trees, etc., for 1930, see Appendix, Table VII.

within the country, because the very high customs duty in foreign countries practically prohibits the export of this highly esteemed product.

The production of apples is of much less importance than that of plums, but owing to the natural adaptability of the country the number of apple trees is constantly increasing. There is a great number of varieties of apples being produced, but the most popular in both domestic and foreign trade are the winter varieties: "Boudimka," "Kolatchara," and "Tetovka." Pears are of even less importance than apples. Our production of good winter varieties of pears is very small, and a broad field of useful activity is offered in increasing the production of such fruit, especially production for export.

Walnuts are grown in different sections throughout the Kingdom, but orchards devoted exclusively to walnuts are very rare. Most of the trees are planted along the roadside, as shade trees in yards, or are interplanted among other fruit trees in small home orchards. There is a ready market for our walnuts both at home and abroad, and an extension in production is being urged. The production of tree fruits other than those mentioned above are relatively unimportant, and they are used primarily for local consumption.

GRAPES AND WINE: The total area of vineyards in Yugoslavia in 1930 was 183,530 ha. Some 39,200 ha. were planted with non-grafted native vines, and the rest to vines that were grafted on American stocks. The non-grafted native vines are dying out from *Phylloxera*, and are being replaced by vines grafted on American stocks.

In two provinces, Smederevo, and Srem, the peasants cultivate two very popular varieties called "Smederevka" and "Plemenka." The grapes from these regions form a very important export item.

The consumption of wine within the country is relatively small as compared with the consumption in other European countries, as the yearly per capita consumption is only about 30 liters. The production of wine during recent years has ranged from an average of 3,838,914 hl. for 1921-25 to 4,016,121 for 1930. In 1926 it was 2,911,885 hl.; 2,854,767 for 1927; 4,318,437 for 1928; and 2,909,913 for 1929.

The export of wine is greatly handicapped by very high customs duties in importing countries. Therefore, the farmers in the wine-producing districts are having great difficulties in selling their products. In order to avoid a surplus, farmers are being advised to confine their vineyards to areas where the soil is especially adapted to vines, and where other crops cannot succeed. The production of table grapes, and of only the best quality of easily salable wine, is also being stressed.

LIVESTOCK: The livestock industry of the Kingdom forms a very

important branch of its agricultural production, and a large part of the country's grain crops are marketed in the form of livestock.¹ These data show that the number of different kinds of livestock with the exception of poultry has tended to remain fairly constant for the past eight years. Thus, there has been no upward trend in the density of livestock.²

HORSES: Horses still continue to furnish the major part of the power on Yugoslav farms, and also the means of communication in both the country and the towns, as automobiles, tractors, and trucks are not generally used except in the large cities. The type of horse that is considered to be the best suited for Yugoslav agriculture is the light draft type, especially the "Nonius" (Anglo-Norman), and "lipizza" breeds. These two breeds are most common in north-eastern Yugoslavia where agriculture is the most advanced. Heavy draft horses of the Norman and Belgian breeds are rarely found.

In our southern and mountainous districts, e.g., Bosnia and southern Serbia, the native mountain horses have been bred and constantly improved for many centuries by crossing with Arabian horses. Therefore, a very sturdy light-type horse has been developed, which is quite suitable for these regions. The constant improvement of our horses is being carried on through State-owned studs, which maintain about 1,000 stallions kept for service in farm communities, 408 brood mares, and 400 head of young stock. In addition to these studs there are numerous privately owned studs, most of which are located in the northern and northwestern part of the country.

CATTLE: Our cattle industry, especially as it relates to export surplus, is largely confined to the production of beef. The local breeds, and a cross between them and foreign cattle, are primarily used for beef production. The recent increases in our industrial development, and the growth of the larger cities and towns have stimulated the production of milk and the development of better milk stock. The production of milk has been increased particularly in the provinces north of the Sava River where the Simentaler, gray

¹ For details Appendix, Table VIII.

² The number of head of the different kinds of livestock per 100 hectares of land and per 100 inhabitants both urban and rural in December, 1930, was as follows:

<i>Kind of Livestock</i>	<i>Number of Head per 100 Ha.</i>	<i>Number of Head per 100 Pop.</i>
Horses	4.67	8.34
Cattle	15.33	27.36
Hogs	11.76	20.99
Sheep	31.98	57.09
Goats	6.96	12.42
Poultry	76.09	135.10

Alpine cattle, and Pinzgauer are coming into general use. South of the Sava River the native cattle which are small, very hardy, and give a low production of very rich milk are still largely used; but the crossing of these cattle with the above-mentioned breeds of foreign cattle is becoming more common.

SWINE: Hog raising before the War was the most important branch of our livestock production, but several dry years which followed the close of the War reduced the yield of corn and other grains to the point where pork production was greatly curtailed. We have not as yet attained to our pre-War level. Hogs are raised for lard and meat. However, the large production of corn and other grains makes the lard type hogs by far the more common. About four-fifths of the total number are of this type. The native breed called "Mongolitz" or in certain localities "Shoumadinka" or "Matchvanka" are used almost exclusively for lard production, whereas the Yorkshire, Berkshire, and other English breeds are used for meat production.

SHEEP AND GOATS: The raising of sheep and goats is most common in the less advanced agricultural regions of our country, especially in Southern Serbia, Bosnia, and the "Karst" mountain regions. The breeding of sheep for one particular line of production is not generally practiced, and sheep are usually kept for the production of meat, milk, and wool. Sheep milk is used for the production of cheese, called "Kachkaval," as well as for the production of butter. Both of these products have an important place in the export trade with oriental countries. The native breeds of sheep and goats are most generally used, but in the northern part of the Kingdom foreign breeds, such as the Merino and Hampshire have been introduced, and are being kept primarily for wool.

POULTRY: The predominance of small farms in our country, together with the large grain production, offers an ideal situation for the raising of poultry. Therefore, the local breeds of poultry, especially chickens, are being improved in order to bring about an increase in the total output of this important branch of agriculture. Many foreign breeds of chickens have been introduced, and some of them are used quite extensively. The most common of these foreign breeds are the Leghorn, Rhode Island Red, and Plymouth Rock. The export of eggs, and of live and dressed poultry, has a very important place in our total export.

MEAT PRODUCTS: Yugoslavia has fifteen packing houses engaged in the processing of various meat and meat products. They are primarily concerned with the preparation of fresh meat, bacon,

sausages, hams, and lard for export. The large livestock output offers favorable conditions for the development of these enterprises, but during the last few years the export of meat and meat products has been greatly handicapped as a result of high customs duties established by importing countries. The high duties on meat and meat products have been established in order to favor the importation of live animals, and the development of the packing industry within the importing countries. As a consequence of the existing duties, only about one-third of our own packing plants are now in operation.

SILK: Our silk industry is confined to the production of cocoons, as there are no silk factories in the country. The raising of silk worms is largely confined to Serbia, and the areas along the Danube River. There are many other sections of our country that are well suited for the culture of this product, and the prevailing favorable export prices should result in its extension. A great many of our mulberry trees were destroyed during the War, but new plantings have been made, and rapid progress has been realized in the production of cocoons. The total crop has been increased 50% since the close of the War, and the annual output is now estimated at about 1,000,000 kg. Before the War the production of cocoons was about 2,000,000 kg., and if it continues its rapid increase we shall soon attain or possibly surpass our pre-war output. The establishing of textile factories within the country for the fabrication of silk would tend to encourage the production of silk worms.

FISHING: The large number of rivers and lakes that exist in the country, together with the long sea coast on the western side of the country, offer ample opportunity for many of our inhabitants to engage in fishing. In addition to the fish which are obtained from these natural sources there are some large fish farms located in the northwestern part of the country. These farms cover more than 3,000 ha., and have an annual production of about 100 carloads of fish, principally carp, which are primarily for export.

FORESTRY: The total area covered by woods within the Kingdom of Yugoslavia amounts to 7,586,026 ha. or 30.5% of the entire territory. It should be specified, however, that these figures also include unproductive areas in our forests, such as rock outcrops, roads, streams, etc. These items take up some 546,443 ha., which leaves a total area in woods of 7,039,583 ha., or 28.3% of our total territory. The forest area, therefore, of our country ranks seventh among European countries.

The national Government owns a large part of the country's

timber, as the national forests comprise 3,619,566 ha., or 47.7% of it. The collectively owned timber lands, such as those owned by towns, villages, communities, or various administrative divisions, amount to 1,442,854 ha., whereas private and church-owned lands amount to 2,523,606 ha.

The exact boundaries and ownerships of wood-lands have not been definitely determined, but all available data indicate that timber lands are divided into different size-groups as follows:

	<i>Size-Group Number of Hectares</i>	<i>Number of Properties</i>	<i>Percentage of the Total Number of Properties</i>
1- 10	598,654	92.8
11- 50	43,346	6.0
51-100	4,553	0.7
More than 100	3,526	0.5
Total	650,079	100.0

COMPOSITION: It is estimated that about 20.8% of the area in woods is covered with evergreens growing either separately or with other trees, whereas the remainder is covered with deciduous trees growing separately or mixed with other trees. The classification of forests in accordance to height shows that 59.3% is in high woods that have grown from seeds, 6.2% in medium high woods which originated from either seeds or sprouts, 23.9% in low woods which originated from sprouts, and 10.6% in bush which produces only small amounts of wood for heating purposes.

WOOD INDUSTRIES: Considering the invested capital, the number of laborers employed, and the value of the export of forestry products, it is clear that forestry is our leading industry. When classified according to the type of products produced, the forestry output separates into two distinct industries: (1) the timber industry in which saw-mills produce half-finished products, e.g., building material, and (2) factories which make finished products from wood, e.g., furniture.

There are 2,790 saw-mills in the country. Of this number, 350 are large mills equipped with steam or electric power, and 2,400 are small mills using water power from streams and rivers. The total production of all our saw-mills is estimated to be about 15,000,000 cubic meters per year. About 80% of this quantity is domestically consumed and the remainder exported. There are 448 factories in the country engaged in producing finished products from wood. Finally, our forestry industry is closely connected with factories engaged in dry-wood distillation, tannin extraction, cellulose production, and other timber processing.

6. NATIONAL INCOME FROM AGRICULTURE AND FORESTRY

A few years ago a group of agricultural experts prepared an estimate of our national income for the year 1925, and published their results in book form.¹ Since these figures represent the most recent data relating to the subject of the national income from agriculture and forestry they are the only ones that we shall use.

After considering the production and prices obtained for our agricultural products, and making allowance for quantities fed to animals as well as deducting the depreciation in farm machinery and buildings, these authors found that the national income from crop production for the year 1925 amounted to 18,638,864,000 dinars. Attention should be paid to the fact that the area of ploughed land in 1925 was only 6,017,178 ha., and in 1930 it had increased to 7,076,481. Therefore, at 1925 prices and yields our present crop income would be well over the 1925 estimate. The income from livestock production for the year 1925 was estimated at 12,940,286,000 d. after proper allowance had been made for the cost of feeding and housing farm animals.

The total national income from the forests for the year 1925 was 3,935,620,000 d. A part of this sum, namely 2,560,508,000 d., represents the income from the annual crops of the forests, and 1,375,112,000 d. the earnings of the laborers employed. The total national income of the Kingdom for the year 1925 amounted to 69,608,150,000 d. which means that the income per capita for the year was 5,354 paper dinars or about 500 gold dinars. National income from agriculture including livestock production and forestry amounted to 35,514,770,000 d. or 51% of the total national income.

7. MARKETING AGRICULTURAL PRODUCTS

The agriculture of Yugoslavia is still in the self-sufficing stage. The greatest part of the agricultural production is used to meet the needs of the peasant family, and only a small part is sold for the purpose of obtaining money needed to pay taxes and to buy the few necessities of life that cannot be produced on the farm.

HOME CONSUMPTION: A pre-War inquiry made in Serbia, by the Central Coöperative Society of Belgrade, shows the following propor-

¹ See final reference, Bibliography.

tions of the total production on different sizes of farms that was used at home or marketed.

<i>Size of Farm in Hectares</i>	<i>Per cent of Total Production Used at Home</i>	<i>Per cent of Total Production that was Marketed</i>
5-10	79.0	21.0
10-15	78.0	22.0
15-30	74.0	26.0
30-50	68.5	31.5
50-70	59.0	41.0

The proportion of the total production that is marketed has tended to increase since the War as a result of the development of larger cities in the interior of the country, better export outlets, and an increase in the amount of taxes that the farmer has to contribute for the improvement of agriculture and the country in general. Therefore, the agriculture of the country is gradually taking on the characteristics of the commercial stage.

BALANCE OF TRADE: The production, as well as the quantity of agricultural products that was sent to both internal and external markets, was relatively small in the years that followed the War. Farmers were required to re-establish their production equipment before they could produce large marketable surpluses, and movement to market was greatly handicapped as a result of the destruction of means of communication that took place during the War. The total export from the country is largely composed of agricultural products, and the export of these products during the years 1920-23 was so low that the country had an unfavorable balance of trade. From 1924 the export of agricultural products increased, and the country enjoyed a favorable trade balance until 1927-28, when it again became unfavorable, because of low agricultural exports that resulted from dry weather and low yields of agricultural products. In 1929 the export of agricultural products was very large, but the drop in prices for these products reduced the value of all exports to the point where it barely exceeded the value of products imported. In 1930 prices for agricultural products declined still further, and this decline together with lower exports of these products resulted in an unfavorable trade balance.¹

A comparison of the value of our total exports and imports during the period 1921-30 shows that the value of imports exceeds the value of exports by 4,947,635,000 dinars. This average annual deficit of a half billion dinars is a very unfavorable balance for an agricultural country such as ours, especially so, since our ability to pay our foreign loans and other obligations depends largely on our trade balance.

¹ See Table IX, Appendix, for details.

The following data show the yearly average value (1921-30) of exports classified according to types of products:

<i>Type of Production</i>	<i>Value in Dinars</i>	<i>Per cent of Total</i>
Cereals, other field crops, and derived products	1,666,449,000	24.57
Fruits and fruit products	320,063,000	4.73
Livestock and livestock products	1,915,979,000	28.25
Forestry products	1,206,663,000	18.57
Other products (minerals, chemical, manufactured products, etc.)	1,610,831,000	23.88
Total	6,780,885,000	100.00

A review of the preceding data shows that agricultural and forestry products represent 76% of the total yearly export for the last ten years. In Table X, Appendix, is given detailed data on the export in 1930 of the most important agricultural and forestry products. A scant 8,000,000 T. of grain and grain products was exported, valued at slightly more than a billion dinars. Other field crops, fruits and plant products added nearly two-thirds of a billion dinars. Livestock and livestock products approximately equalled in value the two export classes just cited. Wood and wood products had export values of close to 1,520 million dinars, thus roughly equalling the export values attained by crops and livestock. Hence in 1930 between 1.5 and 1.7 billion dinars was in the export of (a) field and fruit crops or their products, (b) livestock or products, (c) forest products and (d) minerals, chemicals and industrial products.

The countries that imported the larger part of our exports and the percentage of the total quantity imported by each in terms of value are as follows: Italy, 28.3%; Austria, 17.7%; Germany, 11.7%; Czechoslovakia, 8.2%; Hungary, 7.2%; Greece, 6.0%; France, 4.2%; and other countries, 15.7%.

Most of the import into Yugoslavia is made up of industrial products. The leading countries from which Yugoslavia receives its imported products, and the percentage imported from each in terms of value are: Czechoslovakia, 17.6%; Germany, 17.6%; Austria, 16.8%; Italy, 11.2%; England, 5.9%; Hungary, 5.8%; United States, 4.1%; and other countries 21.0%.

CEREAL TRADE: The cereal trade is one of the most important enterprises in the Kingdom of Yugoslavia. The purchase and sale of cereals is carried on under two general systems: (1) by means of the produce exchanges, and (2) by direct buying from producers. The former is generally used by large domestic wholesalers, and the latter by the exporters who buy the cereals from producers through their authorized agents. Cereals purchased on produce exchanges are

almost always purchased on the basis of standard grades, whereas cereals purchased directly from producers are purchased either by examining the total quantity to be delivered or on the basis of sample. Our exporters usually sell to foreign importers on the basis of conditions that are fixed in advance, and under guarantee that the cereals will be of a specified hectoliter weight, have not more than a specified percentage of foreign matter, and be of designated quality in other respects. However, some export sales are made on the basis of sealed samples sent to the importer. In such cases the exporter guarantees that the cereals to be delivered will conform in grade to the sealed sample.

All of the financial transactions involved in the purchase and sale of cereals are well worked out, and any misunderstanding that arises in connection with a transaction is settled by an arbitrary committee on the respective exchanges.

Elevator systems and methods of marketing cereals that exist in the United States do not as yet apply in our country, but a movement is developing in that direction. A large private company is attempting to obtain a concession from the Government, which if granted will permit it to establish elevators in different parts of the country. However, it is doubted if this important and essential development can be carried out without large amounts of foreign capital.

The most important cereal centers in the country are Novi-Sad, Betchkerek, Sombor, Senta, Subotica, Osiek, Pantchevo, Kikinda, Smederevo, Shabatz, Obrenovatz, Pojarevatz, Gradishte, Jagodina, Koumanovo, Prishtina and other less important points. The most important foreign markets for our cereals are: Braila, Rumania (transit for western European countries); Vienna, Austria; and Bratislava, Czechoslovakia.

LIVESTOCK TRADE: Our livestock trade both internal and foreign is still insufficiently organized. The trade is mostly in live animals, and both exporters and local concerns buy the animals through agents or small merchants on local markets. Animals purchased for export are sent abroad immediately or in case they are not in condition for export are fed. The most important markets for the export of live animals are, for horses: Greece, Italy, and Austria; for cattle and hogs: Austria, Italy, and Czechoslovakia; and for sheep and goats: Greece and Turkey. Animals exported to these markets are sold by the exporters themselves, or are sold through commissioners.

MARGIN: There are a relatively large number of animals exported from the country, and there is a wide spread between the farm price and the resale price on foreign markets. Therefore, coöperative

marketing is being encouraged in this field with the hope of securing for the local farmers higher returns on their animals. A plan for the organization of a national coöperative agency for the export of animals and animal products is now being considered.

FRUITS AND NUTS: Trade in horticultural products is very well developed in our country and fresh fruits such as plums, apples, pears, walnuts, grapes, and dried fruit, especially prunes, form an important part of our export trade. The fresh fruits for export are either packed in small cases or barrels, or shipped in bulk. Prices for unpacked fruits are relatively low, and the development of coöperative marketing as a means of encouraging farmers to pack their fruit in order to obtain better prices is rapidly progressing. There are already in existence three great coöperative packing houses for apples in the most important fruit-centers of the Kingdom, and the organizing of parallel enterprises for different kinds of fruits is well under way. Fresh fruits are purchased from the farmers by either local or foreign buyers, who come to the most important centers of production during the marketing season.

PRUNES: In the case of dried fruits, prunes are by far the most important. The market grades of dried prunes are established on the basis of the number of prunes contained in 0.5 kilogram. The grades are: 60-65, 70-75, 80-85, 95-100, 110-130, and over 130. The numbers represent the number of prunes that are required to make 0.5 kg. Dried prunes are packed in cases weighing from 12.5 to 25.0 kg., or they are exported in bags containing about 50 kg.

The important exporters of Yugoslav prunes have representatives in all European countries, and through them they are constantly in touch with important foreign importers. Within the country, there are local representatives on the principal prune markets who buy the prunes that farmers bring to market. Prunes that are destined either for export or internal sale are inspected by State officials, and all quantities that do not satisfy specified conditions of dryness and other standards of quality are not permitted to be sold on the market nor to be exported abroad.

The most important market centers for fresh fruits are: Tchatcak, Brtchko, Pojega, Arilje, and Maribor; and the most important markets for dried fruits are: Valjevo, Brtchko, Shabats, Loznitza, Tchatcak, Arandjelovats, and Milanovats. The most important export markets for both fresh and dried prunes are: Austria, Germany, Czechoslovakia, and Italy.

QUALITY: The Kingdom of Yugoslavia is a new State, and its agricultural production is still somewhat undeveloped and unperfected.

Therefore, our agricultural products are not always of the best quality. They represent the standard of quality that can be attained by farmers whose knowledge and skill have not as yet been sufficiently developed. Methods of standardizing, classifying, and packing, as well as the technique of marketing are not so fully developed in our country as they are in other more progressive countries, especially in American countries. Our lack of development not only influences the prices for our agricultural products on international markets, but also adversely influences our ability to compete on these markets when an abundance of similar products are supplied from other countries.

The rationalization and intensification of agriculture is the most important problem with which we are confronted, but our action in this direction must be accompanied by better marketing of our agricultural products in order that the farmer may obtain a satisfactory price for his products. A satisfactory farmer price is the essential for the ultimate success of our agricultural industry.

8. AGRICULTURAL SOCIETIES AND COÖPERATIVE ORGANIZATIONS

Agricultural societies and coöperative organizations have played an important part in the agricultural development of Yugoslavia in the recent past, and the present agricultural crisis has created an urgent need for further development of these economic units. Industrial organizations serving the country have become highly centralized, and the only means whereby the farmers can successfully compete with such organizations in the present period of low agricultural prices is by close coöperation both in the sale of agricultural products and in the purchase of industrial products.

The present need for close coöperation among farmers is of greater importance in Yugoslavia than in some of the other agricultural countries, because the agriculture of the country is rapidly changing from a self-sufficing mode of farming to a commercial and capitalistic form. Furthermore, the capital invested, and the labor applied in the agriculture of the country, is subdivided into an enormous number of small enterprises. It is therefore essential that there be a close coördination between these small units if they are to succeed in making sufficient financial returns from their capital and labor to maintain the high standard of living that is associated with commercial and capitalistic modes of farming. Prior to the establishment of the Kingdom of Yugoslavia, there was a large number of various kinds of agricultural coöperative and social organizations in existence in the

territory now included in the Kingdom, and this number has since been constantly increasing.

THREE KINDS OF SOCIETIES: The different kinds of organizations now in existence in the country can be readily divided into three distinct types: (1) those of an educational nature called agricultural societies, (2) those of a business character called agricultural coöperative associations, and (3) those founded for the purpose of directing the agricultural industry of the country and representing the general interest of the farmer called agricultural boards.

The agricultural societies are the oldest agricultural organizations in the country. Their main purpose is to educate the farmers. They give to the farm people information that is necessary in order that they may develop a better and larger agriculture, and produce agricultural products at lower costs. Their educational program is carried out by agricultural lectures, practical courses in agriculture, publication of books and journals, arranging fairs and shows, and conducting special courses in modern methods of farming. Some of the largest of these societies are: the Serbian Agricultural Society of Belgrade, the Agricultural Society of Ljubljana, and the Agricultural Society of Sombor. These organizations are somewhat general in nature, have a central organization and an office in the town whose name they bear, and many branch offices in territory surrounding the central organization.

UNIONS: Many of these societies specialize in one particular branch of agriculture, e.g., there are societies in wine production, gardening, fruit growing, and honey production. These specialized societies are largely local in character, but many of them are combined into national organizations known as unions. One of the best known unions of this nature is the "Union of Yugoslav Bee Keepers," which includes practically all of the societies that are in any way interested in apiculture and the chief product, honey.

Since the subdividing of the country into nine separate districts (Banovinas) there has been a tendency to centralize all of the local societies, of whatever nature, in each Banovina into one general agricultural society. During the year 1931 two of these central organizations were established, one in the Danube and one in the Drina Banovina.

COÖPERATIVE ASSOCIATIONS: The second type of organization known as the coöperative associations is well established in the Kingdom of Yugoslavia. These associations are primarily business organizations that are concerned with the securing of collective credits, the processing, standardizing, and selling of agricultural

products, and the coöperative buying of industrial products used by the farmers.

MEMBERSHIP: Information published by the main coöperative Union as of December 31, 1930 shows that there were 7,130 local coöperatives in the country, and 32 self-accounting or controlling coöperative associations. Of the total number of local coöperative associations, 4,423 or 62.4% were coöperative credit associations, 1,173 or 16.5% were consumers coöperative associations, and the remaining 1,482 or 21.1% coöperative associations organized for various purposes, but largely for the processing, standardization, and sale of agricultural products. These local coöperatives had a total membership in December, 1931 of 806,809 farmers, each of whom represented one farmstead. Comparing the total number of farmsteads represented with the total number of farms in the country as of March 31, 1931, we find that 29.6% of all the farms of the country were represented in the coöperative associations. Assuming that there are four persons to each farmstead we find that there are 3,227,236 people or 23.1% of the total population of the country represented in the coöperative associations.

ORGANIZATION: The coöperative associations are essentially joint stock organizations and the stocks issued represent membership shares that are held by members. The associations receive some Government aid in the form of loans or direct appropriations, and are subject to a certain amount of Government supervision. The local credit associations are joint stock or membership share organizations with unlimited liability. The stock of the associations is held by the members, and each member is financially responsible to the extent of his entire resources. The stock of the local non-credit associations is usually unlimited liability shares.

AUDITING: Local associations are grouped under self-accounting or controlling associations. These associations are also joint-stock or membership-share organizations, but the liability of the stock holders is limited. They are called self-accounting associations, because their accountants are recognized by the Government, and their operations and the operations of the local associations that are members of a particular self-accounting association are controlled by these recognized accountants instead of being subject to direct Government control as is the case with the usual joint-stock company. The capital stock of the self-accounting associations is obtained through the sale of shares to the local associations, and they serve the local associations in every possible manner. The services rendered to the local coöperative associations by the self-accounting associa-

tions include the negotiation of loans with central banking organizations of the country, the purchase and sale of products in large quantities, and all other activities that are necessary for the success of the local associations.

COÖPERATIVE UNION: Above the self-accounting or controlling associations are the coöperative unions. The unions are not joint-stock organizations. They act merely in an advisory capacity and represent the association under them in their dealings with the Government and large banking and business concerns.

In addition to the above three divisions in the coöperative organizations, there is also a main coöperative union which serves a part of the coöperative unions of the country. This organization has its headquarters at Belgrade, and is the center of the coöperative activity of the country.

LOCAL AND OVERHEAD: The whole system of coöperative associations in the Kingdom of Yugoslavia has grown from the local associations. The local associations were the first to develop, and when the first ones were organized their coöperative activities did not extend beyond the immediate community. Later, however, these local associations were united into overhead organizations that developed into the self-accounting associations. The combining of local associations was not usually made along commodity lines, nor were local organizations in definite areas or of any particular type combined in an overhead organization.¹ Consequently the activities of the overhead organization included all branches of coöperative effort. When these overhead organizations combined to form coöperative unions there was again little attention paid to the activities, location, and type of overhead organizations that were included in a particular union. Therefore, it is difficult to group the coöperative organizations of the country along any common line.

ORGANIZATION: The main coöperative Union has divided the associations of the country into three general groups. The first of these groups is made up of 21 self-accounting coöperative associations and 20 under-coöperative Unions and central coöperatives, united into the main coöperative union with headquarters in Belgrade. The membership of the 21 self-accounting coöperative associations consists of 5,394 local coöperative associations with 687,330 members. The combined resources of these Unions consist of: 14,738,578 dinars held as a reserve, and other funds amounting to 25,131,495 d.; savings of the self-accounting coöperative associations amounting to 345,732,-560 d.; and loans to members, 329,604,941 d.

¹ An exception to this is had in the farm-loan association. See below.

The second group represents organizations whose activities are confined to farm loans. The group consists of six regional coöperative farm loan associations united into one main or central farm loan coöperative Union with headquarters in Belgrade. The membership of these regional associations consists of 1,402 local coöperative associations with 94,520 members. The resources of the regional coöperative associations (new organizations existing since 1925) consist of: 7,815,979 dinars held as reserve, and other funds totaling 1,204,710 d.; savings of the associations 1,569,318 d.; and loans to the local coöperative associations, 221,770,494 d.

The third group consists of four self-accounting coöperative associations within a main or central organization. They represent 282 local coöperative associations with 24,959 members. Their resources consist of: 417,968 d. held as reserve, and other funds totaling 4,503,114 d.; savings 5,824 d.; and loans to local coöperative associations, 48,376,442 d.

PRESENT NEEDS: At the present time there are not enough coöperative associations that are concerned with the production and sale of agricultural products to meet the needs of the country. Prices of agricultural products are low at present, competition on foreign markets is exceptionally keen, and individual farmers are unable successfully to market their products. Consequently, the central Government, as well as the official organizations in the separate Banovinas are encouraging the organization of coöperative associations that shall make for more economical production and better processing, standardizing and selling of agricultural products.

AGRARIAN BANK: Closely associated with the various coöperative associations is the Privileged Agrarian Bank which was founded in 1929, primarily for the purpose of financing the different coöperatives.¹

AGRICULTURAL BOARDS: Another related type of organization is the Agricultural Boards, which are not strictly coöperative associations, but are more or less official organization for the advancement of agriculture and the protection of the farmers' interests. The law for the advancement of agriculture of 1929 provided for the establishment of community, county, and Banovina agricultural boards.

The membership of a community agricultural board consists of from three to five officials, and one representative from each of the various agricultural associations located within the boundaries of the respective communities. One representative from each community board makes up the county agricultural board which repre-

¹ See p. 391 below on Future Tendencies of Yugoslav Agriculture.

sents the interest of the agricultural coöperative organization in the respective county. Finally, one representative from each county board makes up the agricultural board for the Banovina, which represents the interests of the agricultural coöperative organization that exists in the territory included in a particular Banovina.

The community, county, and Banovina boards work independently of each other, but the work of each is coördinated with the work of the others through the members of each board who are also members of the other two boards.

CHAMBERS OF AGRICULTURE: A project in law is now being considered which if adopted will tend to strengthen the position of these boards. The law provides for the recognition of the community and county agricultural boards as semi-governmental organizations, and changes the Banovina boards into Government organizations to be known as Banovina Chambers of Agriculture. The laws also contemplate further coöperation among the boards by means of a National Chamber of Agriculture composed of members from the different Banovina chambers. This national Chamber will have headquarters at Belgrade and will be in close touch with the Government, especially the Ministry of Agriculture.

The preceding discussion shows that Yugoslavia has already developed, or has in the process of development, a system of agricultural coöperative organizations that can furnish aid to the farmers in all of the fields where coöperative effort has proven to be efficient. However, many of the individual coöperative organizations have been in existence for only a short time, and are not as yet completely fulfilling the needs for which they are created. It is confidently hoped that the complete coöperative system may be realized in the near future, and that the individual organizations will be made stronger and more efficient in serving the needs of the farm people.

9. AGRICULTURAL EDUCATION

Ever since the founding of the Kingdom of Yugoslavia in 1921, and especially during the past few years when the agricultural depression has endangered the economic structure of the country, an increasing amount of attention has been given to agricultural education. A continuous effort has been made to weld farmers into a strong economic and social unit, i.e., one more capable of exploiting and managing rural resources; this in the hope that the farmer may continue to maintain a satisfactory standard of living in spite of the depressed condition of the agricultural industry.

The agricultural and educational leaders of the country have considered that the best way to attain this purpose is not only through the training of a relatively few prospective farmers in the different permanent agricultural schools of the country, but also through the education of the entire farm population by means of moving agricultural schools, which makes it possible for farmers to receive agricultural training at home.

PRESENT SYSTEM, COLLEGES: The expansion in agricultural education that followed the founding of the Kingdom of Yugoslavia has resulted in the establishment of a number of permanent agricultural schools, and today we have the following institutions: 1. Two agricultural colleges, one at the University of Belgrade, and the other at the University of Zagreb. Both of these colleges were established after the Kingdom was founded, and each of them has departments for training in both agriculture and forestry. In addition to these two colleges there is also a college of veterinary medicine which was organized after the founding of the Kingdom. These colleges are under the direction of the Ministry of Education, but the Ministry of Agriculture gives important funds to them to support research work. 2. Three vocational agricultural schools, having the rank of senior high school. These schools are located in the towns of Krizevic, Valjevo, and Bukovo, and offer four-year courses in agriculture. Two of these schools were organized after the founding of the Kingdom. 3. A total of 25 elementary agricultural schools distributed in the various sections of the Kingdom. Most of these schools offer two-year courses in agriculture, but some of them give only a one-year course.

MORE SCHOOLS NEEDED: If we take into consideration the fact that the chief occupation of nearly 80% of our population is agriculture, it appears that the number of agricultural education institutions is still not sufficient for the needs of the country. This is especially true in regard to vocational and elementary schools.

In Yugoslavia, where land is highly subdivided and strip farming prevails, the importance of agricultural education is greater than in other countries, because the farmer has numerous activities on his small tracts of land, and must know how to apply the best methods for each. The low prices for agricultural products that have prevailed during the past few years have increased the importance of applying better methods, and it has been found that the application of better methods could best be obtained through education in adequate agricultural schools. Consequently the movement for organizing more elementary and vocational schools is spreading among

the people, and as a result new agricultural schools are being established each year.

NEW PROJECT: The Ministry of Agriculture, on the basis of experience gained in existing elementary and vocational schools, has recently prepared a draft of a law for the reorganization of the elementary and vocational schools of the country. The proposed law if put into effect will result in all of these schools being more efficient in attaining their purposes, and they will therefore be of greater value and use to the agricultural population of the country. The law will provide for transforming many existing elementary agricultural schools into vocational agricultural schools which will then have the rank of senior high schools, and will be maintained by the Government. The final number of vocational schools must be several times the number now in existence, if these schools are to fill the needs of the country. The number of students now applying for admission to this type of school is three times the capacity of the schools operating. The proposed law provides that considerable theory be taught in these schools, and that special attention be given to practical, modern methods of farming in order that graduates be well trained in the profession which they are to practice.

NATIONAL SCHOOLS: The law further proposes that the two-year courses in elementary agricultural schools be substituted by special agricultural courses lasting two winters for men, and two summers for women, and that short courses in agriculture also be offered by the same schools. Such schools are to be organized and maintained by the separate Banovinas, and they will be called National Agricultural Schools because they are intended to educate the mass of the farm people. The main purposes of these schools will be to offer theoretical and practical education for the young people, farm men and women, and to assist in developing progressive farmers and farm women.

EXTENSION: In order to reach the farm people that do not attend the above mentioned schools each Banovina has organized an Agricultural Department for the purpose of carrying agricultural education to the individual farmer. The Agricultural Department is headed by a chief of agricultural service, and in addition has a number of trained specialists. The Department coöperates with the agricultural agents in the counties of the respective Banovina, and with the local agricultural organizations in maintaining an agricultural extension program for the Banovina. The Banovina Agricultural Departments have been in existence since the subdivision of the country into nine Banovinas, which became effective after the decree-

ing of the law, October 3, 1929. Their work in agricultural education during this period has included giving agricultural demonstrations in villages, holding meetings on special farms, giving special summer and winter short courses, and giving organized series of agricultural talks. This type of activity constitutes *moving agricultural schools*, which carry a knowledge of modern agricultural practices directly to the individual farmers.

SCHOOLS FOR WOMEN: Yugoslav women are playing a very important part in the farm life of the country by intensively coöperating in the actual agricultural production, by helping form a more progressive country home, and by their interest in country life. Consequently a strong movement to give the farm women a more complete education has recently developed. In order to meet this need a special school having the rank of senior high school for preparing teachers of *home economics* has been developed. In addition to this school there are four other permanent elementary home economics schools, and the proposed law for vocational and national agricultural schools will make it possible to establish additional home economics schools.

In addition to school training, the State and various women's organizations are steadily organizing additional special short courses in home economics. The programs of these courses are arranged to satisfy the varied needs of the farm women. The instructors giving the courses go into many different communities.

ELEMENTARY AGRICULTURAL INSTRUCTION: In recent years the problem of farm children has been seriously discussed with a view to giving them more adequate agricultural education in the public schools in order to better prepare them for country life and their occupation. A decided step in this connection was made in 1929, when a new national school law was adopted. According to this law the course of study in public schools which previously ran for a period of only four years was extended to an eight-year course, and attendance was made compulsory. The course of study for the last four years in these public country schools is made to meet the needs of the country children. This enables the children while still in the public schools to get courses in general science, and also a knowledge of elementary agriculture. This will prepare them for country life, as well as for the special winter courses in agriculture which they will be eligible to attend after completing the public school work.

CLUBS: Many of the country children are unable at present to attend school after completing the eight-year elementary school course, and in order to make it possible for them to continue their

agricultural training the organization of boys' and girls' clubs similar to those existing in the United States is being undertaken.

The preceding discussion of the system of agricultural education in Yugoslavia shows that many phases of the program are yet to be executed, but the rapid progress during the past few years is evidence that the entire program can be developed into a well-rounded system in the near future. The present agricultural depression makes the realization of the program all the more certain, because it has brought home the fact that better agricultural practices must be instilled into the farmers of the country before they will be able successfully to compete with the industrialist and farmers in other surplus producing agricultural countries.

10. FUTURE TENDENCIES OF YUGOSLAV AGRICULTURE

In relation to the present agricultural crisis the efforts of the Government are directed along two general lines: first, to create a favorable situation for the development of agriculture and, second, to extend direct help to the farmer in order that he may withstand the crisis that has been pressing heavily upon him for the past two years.

GENERAL HELP: For the creation of a generally favorable situation for the farmer, the plans of the Government are as follows: (1) To train the farmer to become more efficient in his work by taking advantage of the modern methods of both producing and selling farm products; (2) to support every effort of the farmer laborers (hired help) toward economic independence and land ownership; (3) to help the farmer to secure necessary capital at favorable interest rates through improving the sources of agricultural credits; and (4) to develop a coöperative spirit among the farmers, and to encourage such coöperative organizations as promise to be beneficial for them.

DIRECT HELP: To alleviate directly the lot of the farmers in the present economic crisis the Government is moving vigorously along the following lines: (1) Helping the farmer to sell to advantage his products, especially grain, and to obtain better prices; (2) entering into international coöperative movements by means of mutual agreements with the countries of the same or similar economic structure in order to create a better organization for the sale of agricultural products, and to protect the interests of agriculturists in the respective countries; (3) helping the farmer to produce at a lower cost by the introduction of various administrative and legal measures which enable him to compete more successfully on world markets; and (4)

helping the farmer to shift from those branches of farming that have been hardest hit by the present crisis to other branches that have proven to be more profitable and offer better prospects for the future.

INSTRUCTION: The efforts that are being made in agricultural education as a means of improving the general condition of our farmers have been along the following lines: (1) To educate the young farm people and thus give them such preparation for their future occupation as will enable them to apply new and modern methods which will improve the quality of their products and reduce production costs; (2) to establish a close contact between specially trained agriculturists and the farmers in order to enable each class to profit by the experience and knowledge of the other; and (3) to develop a permanent system for the education of all the members of the farm family who are not able to attend fixed agricultural schools.

OBJECT OF EXPROPRIATION: The effort that is being made to assist the farm laborer to become economically independent is the motivating force behind the agrarian reform. This reform resulted in the expropriation of large estates and their being re-distributed among farm laborers and serf-tenants who had been operating them, and among farm laborers from sections where it was impossible for them to obtain land.

CREDIT: One of the most important factors for low cost production of farm products is a ready source of farm credit at low interest rates and for periods of time that are adapted to the needs of the farmers. The necessity for cheap rural credit has been strongly felt. At the close of the War the farmers had to rebuild their ruined or neglected farms, and also find ways and means which could enable them to enter into competition with the farmers of more progressive countries. The credit coöperative societies which were in existence prior to the War have rendered a great service to the farmers by offering them credits at low interest rates. However, the means of these societies have not been large enough to meet the needs of the country. Therefore the Government has established a Privileged Agrarian Bank, the sole purpose of which is to assist in furnishing credit to the farmer and farmer organizations.

The Privileged Agrarian Bank was founded in 1929 with an original capital stock of 700,000,000 dinars, that could be increased to 1,000,000,000 d. Of the 700,000,000 d. original capital stock, 120,000,000 d. was purchased by the Government and the remainder was purchased by State banks and other banking and commercial institutions. In addition to the money paid in on stocks, the newly organized Bank received funds amounting to several hundred millions of dinars in the

form of loans from the National Bank, the Government Mortgage Bank, and Postal Savings Bank. It is therefore one of the largest credit institutions in the country and furnishes a great deal of the credit used by farmers and coöperative associations.

According to the stipulations of the law creating the Bank, it is allowed to give either long or short term loans to the farmers, as well as to the various forms of farm coöperative organizations that are engaged in the production or processing of agricultural products. The Board of Directors of the Bank is composed of 14 members, 7 of whom are appointed by the Government and 7 by the shareholders. The Government guarantees the shareholders of the Privileged Agrarian Bank 6% interest on their shares, and a special Government commission supervises the entire work of the Bank.

HIGH INTEREST RATE: The Agrarian Bank began to operate in 1929, and to date has granted approximately 1,000,000,000 d. in loans. The interest rate for short term loans has been fixed at 10% for the individual farmers and 8% for farmer associations. Interest on long term mortgage loans has been fixed at 9%. These rates are approximately one-half the interest rates charged by private banks. However, if we consider the present low returns that the farmer gets for his products, the relatively low interest rates at which the Agrarian Bank loans its money to the farmer are still too high to be of any help to him. These credits are of no special help to the farmer who wishes to refinance old debts made at the time of inflation, and when agricultural products were bringing good profits. For this reason great hope has been built on the formation of an international agricultural credit organization which should enable the farmer to get farm credits on much more convenient terms than have heretofore been possible.

EXPORT COMPANY: One of the most important projects of the Government in its attempts to organize a marketing system which shall secure the farmer the best possible price for his products on international markets has been the founding of the Privileged Export Company. In establishing this Company, it was the Government's intention to centralize and coördinate the activities of exporters and coöperative associations, as well as to eliminate undue competition between them. The chief aim in such measures was to eliminate the excessive number of middlemen from both the domestic and foreign markets and thus bring the consumer in closer touch with the producer. The Company was founded with a capital of 30,000,000 dinars, or 30,000 shares of 1,000 d. each. The greater part of these shares were purchased by the Government and the rest by exporters and coöperative associations. The Company has at its disposal a special fund of

20,000,000 d., which is used for market intervention in upholding the prices of agricultural products, and for the advancement of export. Besides the above mentioned sources of capital, large credits are assured it by the National Bank and the Privileged Agrarian Bank. Therefore it has sufficient means at its disposal to carry out its work.

The main task of the Company is to export and sell the agricultural products, especially grain, at the best prices obtainable. It operates on a commission basis with exporters and coöperative associations, and in certain specific cases when the interests of the country warrant the action, as for example, the upholding of prices, the Company makes direct purchases of agricultural products.

Sales of grain by the Company are made as follows: Exporters and coöperative associations deliver their grain to the Company in railway cars or in barges at various stations in the country, and the Company exports it and sells it through its agents who are located in all the more important foreign markets. Recently the Company has been given a monopoly control over the grain trade of the country, but prior to the date when this monopoly control was established it had been able to carry on most of the export trade in grain. Its ability to obtain control of the export grain trade was largely due to its privileged position and the large amount of capital that it had at its disposal. It is, of course, beyond the Company's power to control international grain prices, but its action in controlling the prices on the home market has proved to be a very decided advantage.

WHEAT FACTOR: The prices that our farmers received for their products during the 1930-31 marketing season were not sufficient to cover the cost of production. When the 1931-32 marketing year opened in July, 1931, there were large world wheat reserves left over from the 1930 harvest (reserves which the International Institute at Rome has estimated to be 135,000,000 quintals), and this together with an estimated large production for 1931 indicated that wheat prices for the marketing year 1931-32 would continue to fall. This prediction has since proved to be correct as prices continue their downward swing.

The Yugoslav wheat area covers about 2,000,000 hectares or one-third of our total arable land, and owing to the fact that such a large part of our farmers' income is derived from wheat it was feared that the steady drop in wheat prices would cause serious disturbances not only in agriculture but also in industry and trade. The farmer represents the main producer as well as consumer. Therefore, in order to prevent disaster the Government undertook the task of finding a way to insure the farmer better prices for his products. The first

step in this direction was the passage of the law of July 2, 1931, which introduced *monopoly control* in the sale of wheat, rye, and wheat flour. This law gave the Government the exclusive right of exporting and importing these products. The monopoly powers were transferred to the Privileged Export Company. By the same law, the Government guaranteed the producer of good quality wheat a minimum price of 160 dinars per 100 kilograms, the price paid to coöperatives, grain merchants, etc., being higher, i.e., 163 d. per 100 kg. of wheat.

Higher prices were paid for wheat of exceptional quality, wheat that was stored in collecting stations close to the main lines of transportation, as well as for wheat that was to be purchased later in the season. The prices that were established later in the season were fixed by the newly organized P. E. Co., and approved by a special delegate of the Ministry of Commerce. The law provided detailed regulations as to the rights and duties of the coöperative associations, grain merchants and flour mills. The buying or selling of wheat or flour at prices below the fixed minimum prices was strictly forbidden by the law. The Government placed at the disposal of the P. E. Co. the necessary funds for its business operations of selling the purchased wheat at home and abroad.

It soon became evident that the prices fixed for wheat by the Government were far above the prices obtained for the same product on international markets. To protect itself from too heavy losses on the purchased wheat the Government was forced to enact a new law on September 4, 1931, by which all flour mills were forced to buy wheat exclusively from the P. E. Co. at a price considerably above the Company's purchase price. Prices at which the Company sold wheat from the Tisza Plains to the commercial flour mills during the last four months of 1931 were as follows: September 240 d. per 100 kg., October 250 d., November 260 d., and December 270 d.

This schedule of prices abruptly stopped speculative transactions in wheat. The farmer was certain of finding a buyer for his wheat, as well as getting a much higher price than he would have had if the market had been left at the mercy of the economic principle of supply and demand. Furthermore, he did not have to sell his wheat early in the season, as there was no danger of loss through price fluctuations.

ECONOMIC UNION: In hope of finding a solution to some of the many difficulties confronting its attempts to place our agricultural products on the European markets at favorable prices, the Government is co-operating with certain other agricultural countries in central and eastern Europe. In 1930 negotiations were carried on with Rumania for a free trade agreement between the two countries. All the urgent

problems were discussed and a resolution was carried in favor of free export and import trade. This resolution, however, was never put into practice.

WARSAW CONFERENCE: Soon after this, in August, 1930, Poland called a conference at Warsaw to which the representatives of the countries of central and eastern Europe were invited. A program was worked out for the development of mutual aid between these countries as follows: 1. To secure a market for the agricultural products of the central and eastern European countries on the large European markets in industrial countries, which through the administration of protective tariff have been practically closed to the agricultural products of central and eastern European countries. The method to be employed in opening these markets for the agricultural products of the countries represented at the conference was that of raising tariffs on industrial products imported from the important industrial countries to a parity with the tariffs that the industrial countries maintained on agricultural products. 2. To raise prices for the agricultural products, and further increase the buying power of the people in the agricultural countries by securing preferential tariff agreements with the countries importing agricultural products of European origin, as well as by improving the export conditions of these countries (whose cost of production of farm products exceeds the income from them). 3. To supply the farmers of the countries with necessary agricultural credits at reasonable interest rates. This credit was to be organized on an international basis. The credits obtained under favorable terms would enable the farmers to pay their old debts made at a time when prices for agricultural products were high. 4. To maintain a united front at all of the international agricultural conferences, and thus protect the interests of the agricultural countries of central and eastern Europe.

After a careful study was made of the entire situation, the representatives of these countries found that the surest method of improving the economic standing of the farmers in their respective countries would be through increasing prices of agricultural products. Their reason for adopting the policy of increasing prices as a means of meeting the present situation is based on the fact that production expenses in their respective countries are large and cannot be materially reduced because of lack of capital, mechanical equipment, and small production units.

The industrial countries have adopted a policy of increasing agricultural prices in their respective countries by means of establishing extremely high protective tariffs. This method cannot be success-

fully employed by agricultural countries, and having no better means of raising prices, the countries represented at the conference have demanded preferential tariff duties for agricultural products of European origin, especially wheat that is placed on the European markets.

The representatives of these countries especially emphasized the importance of finding a solution to the agricultural credit question, and also a solution for the coöperative selling of agricultural products which will do away with undue competition. Upon a number of occasions the League of Nations has already considered the demands put forward by the above mentioned countries, and these demands are being gradually realized. The principle of preferential wheat tariffs has already been put into practice between a number of European countries, including Yugoslavia. Furthermore, the problem of international agricultural credit has been largely solved by the founding of an international bank for agricultural mortgage credits.

DANUBE WHEAT ACCORD: In so far as the organization of a plan for the coöperative sale of agricultural products is concerned, it has been decided that the four agricultural countries of Bulgaria, Hungary, Rumania and Yugoslavia should create national organizations which will control the export surplus of wheat in the respective countries, and demand for these export surpluses such prices and terms as will be fixed by a central bureau organized by the national organizations of the countries concerned. Such national organizations have been formed in Yugoslavia and Bulgaria, and they are to be organized in Hungary and Rumania. When these national organizations are consolidated, they will still be quite unable to do a great deal towards increasing wheat prices, but they can at least eliminate undue competition and dumping.

SPECIAL AIDS: The drop in prices for agricultural products has also forced our Government to undertake a number of other measures, even the changing of laws, in order to lower the cost of production, and to help the farmer maintain a reasonable standard of living. These measures have been as follows: (1) Land taxes have been reduced from 12 to 10% of the farmers' net income; (2) import duties have been abolished on certain articles, such as agricultural production machines; (3) export duties on certain oil-seeds and wool have also been removed; (4) transport charges for agricultural products on Government owned railroads and ships have been reduced; and (5) finally, the Government did not accept its earnings on the shares of stock that it holds in the Privileged Agrarian Bank. This sum was used to reduce the interest charges on the money loaned to farmers.

On June 1, 1931, a law was enacted which enabled the farmer to break contracts made in the sale of growing agricultural products. The farmer can break the contract, up until the time when the crops are harvested, but he must return any advanced loans that he has received from the buyer, and must also pay him 10% interest on the money advanced.

During the last few years the agricultural crisis has been very evident, because the country is so distinctly agricultural. About 80% of our population is engaged in agriculture, and three-fourths of our total export consists of agricultural and forestry products. These conditions have not only disturbed the regular advancement of agriculture but they have also impoverished to a certain extent the individual farmers. Such a situation has been created by Russian dumping, competition from Transatlantic countries, and the high protective tariffs that are maintained by the importing European countries. All of these measures are characteristic of the times, and they did not exist before the War, or at least not to such an extent. These factors have made the markets for agricultural products very unstable, and have caused many fluctuations and drops in prices, resulting finally in unprofitable agriculture.

TREND TO SELF-SUFFICIENCY: The fact that our export has decreased for the last few years, and that we are spending many millions in buying agricultural products which could be produced in the country, has created an off-setting tendency in our agriculture. We aim not only to increase the yield, improve quality, lower cost of production, and pay special attention to such branches of agriculture as have not been so badly affected by the crisis, but also to bring about favorable conditions for the production of agricultural products which we have been importing.

In spite of the fact that we are facing great difficulties in the sale of grain, especially wheat and corn, it is not our intention to reduce the area sown to these grains. This policy has been adopted because this type of agriculture is of vital importance, is closely connected with the very existence of a large part of our farmers, and is essential for the development of livestock production. Furthermore, the yield of grain crops in our country is subject to great variation as a result of unfavorable climatic conditions, and if we reduce our acreage materially, our production in unfavorable years might fall far below our consumption requirements.

Prices for livestock are not subject to such violent fluctuations as are the prices for cereals. Therefore, it is our aim to bring this branch of agriculture to its pre-war level. Efforts are being made to bring

in improved foreign breeds, to reproduce pure strains of these breeds and to cross them with our native stock. Special attention is being paid to raising poultry for egg production, because the export of eggs represents a sizable factor of the total value of our export.

Our fruit export represents less than 5% of our total export, in spite of the fact that the natural conditions are very favorable for fruit growing. Consequently efforts are being made to encourage fruit growers, and for that purpose young trees for planting are sold to the farmers at very moderate prices, special courses in fruit-growing are offered, and fruit demonstrations and exhibitions are being held.

It is a well-known fact that we are spending hundreds of millions in buying foreign agricultural products which we either do not have in sufficient quantity or whose quality is better than the quality of the domestic products. Important items on our import list are the oil products, various fruits, vegetables, etc. Our present tendency is to create favorable conditions for a larger production of these products within the country and to place them on the market at a time when they will satisfy the consumers. The climatic and topographic conditions are favorable for the production of all of them.

The increased livestock production will favorably counteract the crisis in grain production, while the increased fruit production will give a new source of income for the farmers. The development of larger production in those branches of agriculture whose products we are importing will decrease the amount of money that we spend on imports and thus make for better national economy.

APPENDIX

TABLE I. AREA, YIELD AND PRODUCTION OF CEREAL CROPS, 1930

CROP	AREA SOWN (Hectares)	AREA HARVESTED (Hectares)	YIELD PER HECTARE (Quintals)	TOTAL PRODUCTION (Quintals)
Wheat	2,170,950	2,123,131	10.30	21,861,501
Barley	458,507	444,032	9.11	4,043,931
Rye	253,152	246,924	8.05	1,987,561
Oats	419,676	408,484	6.98	2,849,866
Corn	2,407,253	2,398,315	14.45	34,645,745
Maslin	52,138	51,458	8.24	423,906
Spelt	18,809	18,434	6.77	124,786
Millet	30,907	29,839	9.87	294,570
Buckwheat	4,096	3,991	6.89	27,503
Rice	1,687	1,660	13.59	22,557
Others	101	101	....	....
Total	5,877,276	5,726,369	....	66,281,926

TABLE II. PRODUCTION OF CHIEF CEREALS
(In Thousands, i.e. 000 Omitted)

YEAR	PRODUCTION IN QUINTALS					TOTAL QUINTALS
	Wheat	Barley	Rye	Oats	Corn	
1921-25 average	15,990	3,054	1,506	2,997	27,789	51,336
1926	19,440	3,761	1,893	3,578	34,101	62,773
1927	15,395	3,146	1,504	2,920	31,085	44,050
1928	38,112	3,942	1,912	3,663	18,191	55,820
1929	25,855	4,119	2,100	3,508	41,477	77,059
1930	21,862	4,044	1,988	2,850	34,646	65,390

TABLE III. THE AREA AND PRODUCTION OF LEGUMINOUS CROPS FOR GRAIN, 1930

CROP	AREA PLANTED (Hectares)	AREA HARVESTED (Hectares)	YIELD (Quintals)	PRODUCTION (Quintals)
Beans	34,350	33,122	4.59	1,520,661
Peas	5,516	5,314	10.52	55,909
Lentils	3,011	2,919	8.03	23,446
Broad beans	4,334	4,209	12.04	50,665
Vetch	20,271	19,982	8.82	176,322
Others	2,402	2,205	....	....
Total	69,884	67,751	....	1,827,003

TABLE IV. AREA, YIELD AND PRODUCTION OF ROOT CROPS,¹ 1930

CROP	AREA PLANTED (Hectares)	AREA HARVESTED (Hectares)	YIELD (Quintals)	PRODUCTION (Quintals)
Potatoes	244,643	242,346	60.68	14,705,108
Mangels	26,117	25,915	135.31	3,506,617
Carrots	4,153	4,140	66.84	276,714
Turnips	2,928	2,910	87.10	253,447
Others	228	221	...	....
Total	278,069	275,532	....	18,741,886

¹ Other than sugar beets.

TABLE IV-A. POTATO PRODUCTION IN QUINTALS

YEAR	POTATOES PLANTED ALONE	POTATOES INTERPLANTED	TOTAL PRODUCTION
1921 to 1925 ¹	9,941,000	158,000 ²	10,099,000
1926	9,400,000	140,000	9,540,000
1927	10,087,000	123,000	10,210,000
1928	8,522,000	106,000	8,628,000
1929	16,227,000	96,000	16,323,000
1930	14,551,000	154,000	14,705,000

¹ Average. ² Average 1922 to 1925.

TABLE V. INDUSTRIAL CROPS, 1930

CROP	AREA PLANTED (Hectares)	AREA HARVESTED (Hectares)	YIELD (Quintals)	PRODUCTION (Quintals)
Sugar beets	53,185	51,652	144.21	7,448,853
Cotton	1,365	1,306	3.44	4,496
Flax for thread ¹	13,306	13,163	8.89	103,366
“ “ seed . . . . .	....	....	....	13,627
Hemp for thread ¹	38,122	37,492	9.38	330,810
“ “ seed . . . . .	....	....	....	20,717
Rape	12,233	11,625	6.09	70,776
Poppy for seed ²	14,783	12,700	1.58	19,329
“ “ opium . . . . .	....	....	....	706
Tobacco	16,007	15,369	9.27	142,422
Hops	3,225	2,889	6.08	17,568
Chicory	1,226	1,218	111.98	136,398
Others	4,964	4,859	....	....
Total	158,416	152,273	....	8,309,068

¹ Acreage for fiber and grain. ² Acreage for seed and opium.

TABLE VI. HAY AND FODDER CROPS, 1930

CROP	AREA SOWN (Hectares)	AREA HARVESTED (Hectares)	YIELD (Quintals)	PRODUCTION (Quintals)
Clover	105,729	105,276	35.92	3,781,271
Alfalfa	74,075	72,831	34.78	2,533,697
Others, including meadows	1,820,941	1,819,784	18.21	33,138,274
Total	2,000,745	1,997,891	19.95	39,453,242

TABLE VII. TREE FRUITS, 1930

KIND OF FRUIT	NUMBER OF TREES (Number)	YIELD PER TREE (Quintals)	PRODUCTION (Quintals)
Plums	44,718,112	10.32	4,616,001
Apples	7,134,471	18.90	1,348,130
Pears	3,770,743	10.21	385,033
Walnuts	2,094,982	16.23	340,120
Figs	833,643	15.90	132,533
Chestnuts	694,404	19.22	133,496
Olives	4,269,711	0.35	15,005
All others	5,453,944	....	....
Total	68,970,010	....	6,970,318

TABLE VIII. LIVESTOCK ON FARMS

(In Thousands, i.e. 000 Omitted)

YEAR	KIND OF ANIMALS					
	HORSES	ALL CATTLE	HOGS	SHEEP	GOATS	ALL POULTRY
1922 ¹	1,044	4,058	2,887	8,462	1,801	13,810
1923	1,063	3,870	2,497	7,639	1,730	14,196
1924	1,054	3,784	2,518	7,619	1,718	14,932
1925	1,106	3,768	2,802	7,907	1,811	16,198
1926	1,117	3,706	2,806	7,933	1,721	16,260
1927	1,120	3,729	2,770	7,736	1,739	16,279
1928	1,109	3,654	2,663	7,722	1,750	16,081
1929	1,140	3,728	2,675	7,736	1,804	17,516
1930	1,161	3,812	2,924	7,953	1,731	18,822

¹ Dec. 1, data.

TABLE IX. QUANTITY AND VALUE OF IMPORT AND EXPORT, 1921-1930
(In Thousands, i.e., 000 Omitted)

YEAR	EXPORTS		IMPORTS		DIFFERENCE IN VALUE EXPORTS MINUS VALUE IMPORTS (Dinars)
	Metric Tons	Value in Dinars	Metric Tons	Value in Dinars	
1921	1,583	2,460,737	733	4,122,097	- 1,661,360
1922	2,213	3,691,166	1,232	6,441,876	- 2,750,710
1923	3,025	8,048,843	1,123	8,309,635	- 260,792
1924	3,915	9,538,774	1,127	8,221,743	+ 1,317,031
1925	4,398	8,904,539	1,513	8,752,878	+ 151,661
1926	4,881	7,818,180	1,241	7,631,779	+ 186,401
1927	4,251	6,400,153	1,331	7,286,290	- 886,137
1928	4,526	6,644,609	1,505	7,835,326	- 1,190,627
1929	5,329	7,921,707	1,671	7,594,750	+ 326,957
1930	4,733	6,780,054	1,513	6,960,113	- 180,059
Total	48,854	68,208,852	13,049	73,156,487	- 6,929,685 + 1,982,050 - 4,947,635

TABLE X. EXPORT OF MOST IMPORTANT AGRICULTURAL AND FORESTRY PRODUCTS,
1930

	QUANTITY (Metric Tons)	VALUE (Dinars)
<i>Grain and grain products:</i>		
Wheat	252,407	474,110,000
Other small grains	5,069	7,274,000
Corn	503,475	547,696,000
Wheat flour	7,509	22,142,000
Bran	15,895	16,279,000
Total	784,355	1,067,501,000
<i>Other field crops and fruits:</i>		
Beans	21,042	96,315,000
Potatoes	1,831	1,765,000
Fresh and canned fruit	99,710	291,771,000
Dried prunes	7,634	45,543,000
Prune marmalade	2,139	11,519,000
Wine	12,400	48,398,000
Total	144,756	495,311,000
<i>Other plants and their derived products:</i>		
Medicinal plants	2,428	15,418,000
Hemp	8,371,842	85,225,000
Opium	36	27,078,000
Alcohol	2,189	13,738,000
Total	8,376,493	141,459,000

TABLE X — Continued

	NUMBER OF HEADS	VALUE (Dinars)
<i>Livestock:</i>		
Horses	29,590	61,855,000
Colts	204	225,000
Cattle	120,871	308,409,000
Calves	15,808	11,486,000
Hogs	243,338	284,571,000
Sheep and goats	717,110	117,785,000
Poultry	8,293 ¹	112,928,000
Total	1,126,921²	897,349,000
	QUANTITY (Metric Tons)	VALUE (Dinars)
<i>Meat and meat products:</i>		
Fresh meat	16,202	229,075,000
Miscellaneous meat products	501	11,684,000
Lard	118	2,008,000
Special butter (maslo)	297	8,073,000
Miscellaneous cheeses	135	1,737,000
Special cheese (Kashkaval)	1,939	33,780,000
Eggs	30,428	511,769,000
Skins	3,520	104,000
Total	53,140	798,230,000
<i>Wood, wood products:</i>		
For burning	412,640	79,085,000
For building material	1,166,231	1,156,908,000
Products	38,486	75,660,000
Railroad ties (oak)	2,117,034	115,274,000
" " (beech)	594,921	26,759,000
Total	4,329,312	1,453,686,000
<i>Tannin extracts:</i>		
Tannin extract: chestnut bark	4,964	24,968,000
" " oak bark	9,054	40,389,000
Total	14,018	65,357,000
<i>General total, all exports:</i>		
Metric tons	13,710,367	4,918,893,000
Heads of livestock	1,126,921	

¹ Metric tons. ² Exclusive of poultry.

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