

**AGRICULTURAL MARKETING : ECONOMICS
OF FRUIT MARKETING IN THE
POONA DISTRICT (1977-1986)**

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BY
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CERTIFICATE

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Ishita Mukherji Edwards was carried out by the candidate
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obtained from other sources has been duly acknowledged
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FOREWORD

The importance of the marketing aspects of agricultural development in India was described in detail for the first time in the Report of the Royal Commission on Agriculture in India, 1928. The revelations in that report encouraged further studies in this regard in the years that followed. One of the earliest significant works to follow in the wake of the 1928 Report was the Gadgil and Gadgil Report on Fruit Marketing in the district of Poona in the then Bombay Presidency (1931-33). The Gadgil Report described a structure of marketing that was ridden with imperfections and burdened with inequities. It also indicated that the fruit farmers in Poona were not receiving the best possible returns from the market. The report described how middlemen, upon whose marketing and financing services the fruit farmers of Poona were almost entirely dependent, were extracting disproportionately large payments for the services rendered. The orchard growers had no way to either check or restrain the intermediaries' demands. The system of marketing and production as existed in 1931-32 was so bereft of incentives for the cultivators that without governmental efforts fruit marketing would remain inefficient. Therefore, the prospects of the fruit economy would be dismal. The Gadgil Report urged the necessity of market

regulation to bring order into the marketing aspects of the fruit economy of the Poona district.

Although efforts towards regulation were begun in the Bombay State soon after the Gadgil Report (in 1939 the Bombay Market Regulation Act was enacted), the actual implementation of the act has been a gradual process. Overcoming stiff resistance from commission agents has been a difficult process because the indirect power of this faction in the legislature. Finally, in 1976 fruit marketing in Poona fulfilled the recommendation of the Gadgil report when in the October of that year the fruit section became the first in India to be regulated.

Regulated markets as an instrument of agricultural marketing policy were as yet improven. The commission agents protested the regulation of the fruit section on the grounds that fruit as a perishable product was a 'special' case. Fruit marketing they claimed, required speed of disposal which was impeded by the bureaucratic demands of regulatory reform. Market regulation would accordingly depress prices, reduce the farmers returns and reduce the efficiency of the marketing process.

This research began less than a year after the fiery post-regulatory phase commenced. The intent was to test the contradicting theories afloat at that time. Over the years market regulation has had adequate opportunity to gel into a mould upon which expectations regarding the

regulation's effectiveness can be framed. Therefore, this study of the fruit marketing structure in Poona proceeds on three main thrusts. The first is in the identification of the structural changes and their significance in marketing. The second thrust is in identifying which and how many of the changes may be attributable to regulatory reform. The third and final thrust is in analysing the continued deficiencies in the post-regulatory fruit marketing structure. The combined emphasis is the exact contribution regulation has made to a more efficient and egalitarian fruit marketing in Poona district.

The research effort called for a farm-level survey, supplemented with a thorough survey at the Poona wholesale market yard for several years. Packing, grading and similar marketing efforts may be expected to change as a result of market regulation. These changes can be observed at the Gultekadi Wholesale Produce Market Yard where most of the Poona fruit reaches and is generally regraded before sale. Price movements over the years as well were studied at the wholesale market yard. The same is true also for most marketing methods and operations. The changes, wherever they have occurred, were observed at the market to which the produce was destined. A prolonged survey of the Poona wholesale market in action was therefore an essential part of the sources of information for this study.

The central thesis of this study is that marketing efficiency and equity may be significantly enhanced only with policies that result in infrastructural improvements. These infrastructural modifications are difficult, expensive and often risky. Nevertheless, these changes are essential if genuine and significant change is to be effected in the marketing structure within the next few years. Many of the obstacles faced by the fruit farmers of Poona are, to put it simply, outside the purview of the Poona Agricultural Produce Marketing Committee (PAPMC). The PAPMC, however, has the potential to play a very important and supportive role as guide, organiser and coordinator. These are the basic ideas around which this study is developed.

This dissertation is an effort to isolate what may be considered some of the chief impediments to a fair and efficient fruit and efficient fruit marketing system in Poona. To this end it has examined the role of market regulation in combating these impediments. As a product of the analysis certain explanations have surfaced. The dissertation bases its recommendations upon the preceding analysis and explanations. For a proper perspective of the structural obstacles to better marketing it is important to not only note the obstacles in the way but to recognise the fact that not all of them are impenetrable.

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CHAPTER I
INTRODUCTION

1.1.1 INTRODUCTION

Agricultural marketing, for many years, continued to be considered secondary to agricultural production. This commonly held but misguided notion resulted in arousing little interest among economic researchers and government offices in any serious analysis of the intricacies of rural marketing. Therefore, while researchers studied the problems associated with the enhancement of various crop outputs, not surprisingly, little research was undertaken for the more efficient marketing of these crops. The Royal Commission Report begins the section on marketing with the following words which assert that increased production without better marketing cannot enhance the cultivators returns:

The agricultural departments in India have done much to improve the quality and to increase the quantity of the cultivators' outturn, but it cannot be said that they have been able to give him substantial help in securing the best possible financial return for his improved quality and his increased outturn.¹

¹ The Report of the Royal Commission on Agriculture in India, 1928, p. 382.

The Royal Commission on Agriculture Report further made the following startling comments based upon its study of the agricultural situation in India:

We have sought to make plain the extent to which the prosperity of the cultivator and his progress in agricultural efficiency depend upon sound marketing. It has been pointed out that comparatively little has been done by the Government of India to assist the cultivator in its marketing operations. The collection and study of exact information on the question must necessarily precede the formulation of an effective policy for the improvement in marketing. Guesses and hearsay cannot provide the grounds for action. ...²

The findings of this report acted as an eye-opener for various departments of agriculture and agricultural economists. Many departments of agriculture and some individual researchers responded by conducting marketing surveys for the first time. This research is another effort in the same direction.

1.2.1 THE SCOPE AND OBJECTIVE OF THIS RESEARCH

In this research the cultivation and marketing of a commercial crop is being studied. Fruit is an important commercial crop for which the marketing structure is complex and the problems related to the marketing of which are

2 Ibid., p. 408.

intricate. A study of marketing of fruit in Poona District has been conducted as far back as in 1931-33. It was therefore decided to repeat the study for the Poona market so that changes over a span of over fifty years could be recorded. Moreover, the Poona Wholesale Produce Market is the first wholesale market for fruit to be regulated in the country. The marketing of fruit was therefore selected to be the subject for this research. As an individual research the scope of this study necessarily has had to be limited to a single market. For the study of the marketing structure between the orchards and the market, the investigations were limited to the fruit growers of the Poona district who use mainly the Poona market.

The objective of this research is the examination and analysis of the fruit marketing structure in the Poona district after the regulation of the central market in the region, with the end of assessing the impact of market regulation upon fruit marketing. This objective has been attempted both by means of an investigation into the marketing methods and procedures in the district, as well as by isolating the extent to which marketing methods affect revenue and profit. The hypothesis of this research is that the regulation of the fruit section of the Poona Wholesale Agricultural Produce Market has improved the structure of fruit marketing and has increased the cultivators' net returns.

1.3.1 THE NEED FOR SUCH RESEARCH

What makes "fruit" a special case amongst the many other equally neglected agricultural crops is that it is one of those few crops which the farmer cultivates almost entirely for the market. Fruit demand usually lies in urban areas, quite often at considerable distance from the villages. Furthermore, most fruits are highly perishable - easily damaged and have little lasting capacity. For all these reasons efficient marketing is extremely important for fruit, and is often undertaken at high costs. The peculiarities of fruit call for systematic and thorough studies of the economics of fruit marketing and the various problems associated with it: the structure, the channels, the costs, the shares of the cultivators in the consumer's rupee, wastages, etc. There have been some studies by the Directorate of Inspection and Marketing of some major fruit crops such as mango, citrus, banana, etc., at the all-India level with the emphasis, in most of these cases, upon the behaviour of wholesale and retail prices in some of the major Indian markets. Lately, State Marketing Departments, where they exist, have been encouraging marketing studies at the State level such as "Marketing of Grapes in Mysore State".³ But these are even

³ (a) Marketing Series of Mysore, No.6, Department of Marketing, Bangalore, 1962.

(b) Marketing of Bananas, Marketing Survey Series of Maharashtra, 1968.

(c) Proceedings of All India Seminar on Marketing and Processing of Grapes, Directorate of Marketing and Inspection, 1973.

fewer in number. These studies are also largely qualitative in nature. Besides, studies which have larger coverage and are more extensive in nature are often conducted at the expense of valuable details.⁴ There is considerable regional variation in India which is lost due to aggregation. What is required under the circumstances are intensive single market and small area studies conducted concurrently to focus on those aspects which the aggregative national and multiple-market studies have not covered.

This is why, this research studies the economics of fruit marketing in Poona, concentrating intensively upon the working of only one market : the Poona Market or the Mahatma Phule Market/Shree Chhatrapati Shivaji Market Yard.⁵

The first study of fruit marketing in Poona was conducted by Professor D. R. Gadgil and V. R. Gadgil in 1931-33 and brought out as a report titled "A Survey of Fruit Marketing in Poona", a Gokhale Institute of Politics and Economics publication. Between then and now more than half

⁴ (a) Agricultural Marketing Series No. 149, Marketing of Fruits and Vegetables in the Cities of Calcutta, Delhi, Madras, Ahmedabad, Poona and Nagpur, 1965.

(b) Marketing of Guava, Papaya and Litchi in India, 1966.

(c) Report on the Marketing of Pineapples in Goa, Agricultural Marketing in Goa, 1967.

⁵ For the first year after regulation, the wholesale fruit section continued to operate at the old wholesale space at the Mahatma Phule Market.

a century has passed, and no further work has been done either by any Government body or by any individual researcher⁶ in this specific region. During this period it is but natural that many changes in marketing methods in response to spread and advance of technology may be expected to have occurred. Some of the known changes are transportation by truck and the application of the 1963 Maharashtra Agricultural Produce Marketing (Regulation) Act (MAPMA) to the fruit section of the Poona mandai (market) from 1st October 1976. The latter was achieved by means of the 1976 amendment to the MAPMA, by which the wholesale fruit marketing section was brought under the partial jurisdiction of the Poona Agricultural Produce Marketing Committee. A shift of the wholesale market in 1977 to a new location in Gultekadi, brought the entire wholesale market under the complete jurisdiction of the Marketing Committee. Further, market channels may be expected to have changed, thus affecting both marketing costs and the price spread. In short the entire economics of fruit marketing may have changed in response to technological advances made during this period. The time is therefore ripe for a re-survey and a re-analysis.

It should, however, be clarified that for the purpose of an assessment of the impact of market regulation as well, the selection of the sample of fruit cultivators

⁶ H. D. Punde's study of grapes in the district studies the cost of cultivation of grapes in great detail, but touches marketing only perfunctorily.

from the Poona district alone was not simply for the convenience of geographical proximity of the surrounding villages. The size of the sample had to be restricted to manageable proportions for this study. Preliminary enquiries at the Poona wholesale market indicated that the Poona cultivators generally sent their produce to the two larger markets nearest to them; the Poona and Bombay markets. These enquiries also indicated that the Poona cultivators are significant contributors into the Poona fruit and vegetable wholesale market. Earlier, since the Poona market was small, the Poona cultivators (or the middlemen that marketed their produce) primarily patronised the Bombay market. In recent years this trend has changed and Poona cultivators are increasingly sending their produce to the Poona wholesale produce market. This was only to be expected as with the increasing industrialisation of the Poona area the population and the incomes around the city had risen. Moreover, the cost of marketing from the Poona farms to the Poona market is lower than it is to Bombay, and relatively convenient transportation is now available. Consequently, many cultivators and middlemen from this region who traditionally patronised only the Bombay market are now sending increasing portions of their produce to the Poona market.

1.4.1 EARLY RESEARCH IN FRUIT MARKETING; A SUMMARY OF THE EXISTING LITERATURE (UPTO 1966)

In Poona, Professor Dhananjayrao Gadgil, the then

Director of the Gokhale Institute of Politics and Economics, in conjunction with V. R. Gadgil, responded to the obvious need for regional (micro-level) information on fruit marketing by organizing a survey of fruit marketing in the Poona district in 1931-32.

The Gadgil Report on the Fruit Marketing in Poona studied marketing methods, prices, arrivals into the Poona mandai, and price spreads. It is significant that the fruit marketing structure invited such interest, so early in the evolvment of agricultural marketing research, from one of India's most noted economists of the time. This only reiterates the importance of the marketing structure for crops such as fruit. The Gadgil and Gadgil report is the guiding light for this research. The findings of the Gadgil Report will be referred to in detail repeatedly through the different chapters of this study.

Since the Gadgil Report there have been several Government sponsored reports on the marketing of mostly crops other than fruit. Of the earlier studies, the ones relevant here would be the 1937 report on the cold storage and transport of perishable produce to Delhi (a pamphlet)⁷ and a fruit survey report by Paranjpe and Siddaramaiya (1933).⁸

⁷ Report on the Cold Storage and Transport of Perishable Produce in Delhi, Marketing Series No.2, 1937.

⁸ Fruit Survey Report, Bulletin No.8 of the Agricultural Department, Hyderabad, 1933, Authors : H. P. Paranjpe and M. R. Siddaramaiya.

Between 1940 and 1966 several reports have been written on the marketing of certain fruit around a particular state or within the nation as a whole.⁹ All these reports were produced before the regulation of fruit wholesale markets was begun in India.

1.4.2 RECENT COMPARABLE STUDIES ON FRUIT CULTIVATION AND MARKETING IN MAHARASHTRA (1967-1988)

In the more recent times, the problems of fruit cultivation and marketing in Maharashtra has been found to have become a subject of some interest for individual studies, usually those conducted under the aegis of agricultural universities. Some of the more relevant studies on the subject of fruit economics, dealing with either cultivation or marketing, are chronologically listed below.

9 Some of these reports are:

(a) Report on the Marketing of Citrus in India, Marketing Series No.43, AMI, 1943.

(b) Marketing of Some Important Stone, Pome and Small Fruits and Pineapples in India, AMI Bulletin, Marketing Series No.62, 1950.

(c) Marketing of Mangoes in India, Agricultural Marketing Series No.77, 1958.

(d) Marketing of Grapes in Mysore, Marketing Series of Mysore, No.6, 1962.

(e) Marketing of Fruits and Vegetables in the Cities of Calcutta, Delhi, Madras, Ahmedabad, Poona and Nagpur, 1965.

(f) Marketing of Guava, Papaya and Litchi in India, Marketing Series No.152, 1966.

Other reports consulted for this study may be found in the bibliography.

1. Borey, D. P. Production and Marketing of Banana in Raver taluka in Jalgaon district, 1967. This is a research of production costs of banana cultivation and marketing practices in that region.
2. Narkhade, D. S. History and Economics of Banana Cultivation in a Khandesh Village, 1968 unpublished dissertation. This dissertation studies history of banana cultivation in that region, and the cost of cultivation of banana.
3. Patil, S. M. A Comparative Study of Resources Productiveness on Sample of Sugarcane and Banana Farms in Nasik and Jalgaon district, 1972. Patil compares his study against the previously completed studies of Narkhede and Borey on the same subject in a different region. The methodology adopted by Patil both in the matter of data collection and analysis, is almost identical to the methods adopted by Borey and Narkhede earlier, and Punde and Patil (S.J.) later. The results are interesting in each of these cases and the differences of those results from the current study are discussed in the relevant sections.
4. Punde, H. D. An Economic Investigation into the Costs and Returns from Grape Cultivation in Baramati and Haveli talukas of Poona district, 1973, unpublished dissertation. Punde's study

on the grape cultivation, investigates the costs of production of different varieties of grapes in the Poona district, the costs of marketing and the net profits per hectare and per quintal. This is perhaps the most valuable piece of recent comparative literature. Punde's work and the current research differ in their methods and emphasis. Punde's marketing costs are useful to this study for comparison with a pre-regulation period. In the matter of cost analysis however Punde goes into far greater details than would serve the purpose of this research.

Although Punde studies marketing costs, cultivation rather than marketing is his main focus. Punde's study does not touch upon the seasonality of prices, market margins and price spreads and fruit loss in storage. Moreover, in Punde's study there is no examination of the possible factors which determine the costs of marketing.

5. Patil, S. J. Economics of Pomegranate Cultivation in the Rahuri region of Ahmednagar district, M.Sc. thesis, 1975. Patil's research concentrates solely upon the cultivation aspect of the pomegranate crop. He uses the Cobb-Douglas production function, linear in logarithms fitted to his data, in the form of $Y = aX_1^b \cdot X_2^b \cdot X_3^b$ where

Y is the output of pomegranate in quintals, X_1 is the land under pomegranate in gunthas, X_2 is the human labour (hired and family) in man-days, X_3 is the expenditure on manures and fertilizers in rupees, and the b_1 , b_2 and b_3 are the regression coefficients.

1.4.3 CONTRIBUTIONS OF THE CURRENT STUDY

The methodology and findings of other researches conducted in recent history with regard to fruit cultivation and marketing in Maharashtra have been described above. Some of these studies have presented both costs of cultivation and marketing, but a majority have concentrated upon the detailed study of costs of cultivation alone. The contribution of this research in this field of study will be:

- (i) an analysis of the contribution of a regulated market towards more efficient marketing and higher net returns for the fruit cultivators;
- and, (ii) an analysis of the problems of fruit marketing in Poona.

1.5.1 THE METHODOLOGY ADOPTED IN THIS STUDY

The emphasis of this study was set upon intensity rather than upon extensiveness. Therefore, the aim was to select a small sample and extract as much, and as accurate, information from that sample as was possible. By restricting the sample size it was possible to conduct lengthy

interviews and spend a greater amount of time on personally observing procedures. Such a concentrated effort, it was felt, would enable the acquisition of better quality data. One of the most acute problems associated with analysis of agricultural problems in India has been the quality of the data used. The principal effort here has therefore been to concentrate on the acquisition of reliable data. Most of data used in this research was collected directly from the farmers and middle-men by means of interviews carried on by the researcher personally. The survey was conducted between 1978 and 1979 for the cultivators, and between 1978 and 1980 for the commission agents and the other middlemen.

1.5.2 SAMPLE SELECTION

The objective in the non-census type survey method is to select a sample most likely to be representative of the population. In the words of Kohler:

A survey, or observational study, is the collection of data from elementary units without exercising any particular control over factors that may make these units different from one another and that may, therefore, affect the characteristic of interest being observed.¹⁰

1.5.21 SELECTION OF CULTIVATORS

The cultivators' sample was selected in three separate steps. In the first step the population to be studied, the fruit cultivators in the Poona district, was subdivided into geographically distinct clusters. The acreage under different fruits in the Poona district was analysed and six fruits in the district which occupied the maximum acreage were selected. This done, the acreage under these six fruits in the different talukas (sub-divisions of districts) of the Poona district was examined and the talukas with the maximum acreage for each fruit were selected. This information is provided in Table 3.1. The following talukas were selected for the six different fruits

- | | | |
|---------------------------------|---|--|
| 1. <u>Orange</u> ¹¹ | : | Shirur taluka |
| 2. <u>Mosambi</u> ¹¹ | : | Purandhar taluka |
| 3. <u>Guava</u> | : | Haveli and Purandhar talukas |
| 4. <u>Fig</u> | : | Bhor and Purandhar talukas |
| 5. <u>Banana</u> | : | Junnar taluka |
| 6. <u>Grape</u> | : | Indapur, ¹² Haveli and Baramati talukas |

¹¹ There are two kinds of oranges being studied here. The first is the Mandarin Orange (or Santra in Marathi). This variety will be referred to as "Orange" throughout this text. The other is an important variety of sweet orange (called Mosambi in Marathi). The word 'Mosambi' is a corruption of the word "Mosambique" since this variety of sweet orange originated in Mozambique. This variety will be referred to as "Mosambi" throughout this text. (Source : "A dictionary of Indian Agriculture" by M. G. Kamath, 1972.)

¹² In Indapur serious problems of transportation and accessibility were experienced. Therefore concentration of the research/shifted to the Haveli and Baramati talukas. /was

In the second stage of the sample selection process, the acreage statistics by crop for each village in the taluka was collected from the taluka headquarters. From each of the selected talukas a selection was made of the village in which the cultivation of these fruits was the largest, and which were also relatively easily accessible. The villages that fell into this cluster were:

1. Shirur taluka : (a) Talegaon Dhamdhere
(Orange) (b) Ranjangaon Ganapati
(c) Shikrapur
2. Purandhar taluka : (a) Sakurde
(Mosambi) (b) Belsar
(Fig and Guava) : (a) Dive¹³
(b) Saswad
3. Bhor taluka : (a) Velu
(Fig only)
4. Junnar taluka : (a) Rajuri
(Banana) (b) Otur
(c) Ale
(d) Belhe
5. Haveli taluka : (a) Uruli Kanchan
(Grape) (Guava) (b) Baner
6. Baramati taluka : (a) Baramati
(Grape) (b) Malegaon
(c) Gunawadi

The third step was the selection of fruit cultivators from the selected villages. The estimated number of fruit cultivators (for the 6 fruits) was approximately five

¹³ The adjacent villages of Kalewadi, Jhendewadi, Dhumewadi, Pawarwadi and Dive were together listed as "Dive" in the taluka records.

thousand in the Poona district in 1978-79 of which a three per cent sample was sought for this study. Complete lists of all fruit cultivators for each selected village from the talathi's office were acquired. The relative proportions of 'large', 'medium', and 'small' cultivators in that list of fruit cultivators, for each village taken independently was then determined. The proportion of different sized farmers from each of the selected villages in the sample was in proportion to their number in the acquired lists of cultivators from each selected village. Thus, each list was split into three strata based upon the size of the holdings and the proportion of each strata that should be represented in the sample from that village was determined. Finally, the sample of cultivators from each strata was selected. The sample comprised of 200 fruit cultivators. These were contacted and interviewed; however, only 144 of them provided complete information and had had output in the previous years even if their orchard had failed at the time of the survey. The representation of cultivators from each village and the sizes of landholdings to which they belong is illustrated in Table 1.1.

1.5.22 SELECTION OF MARKET FUNCTIONARIES

There were forty four commission agents licensed to conduct business at the fruit section of the Poona Agricultural Produce Market at the time of the survey. It was

Table 1.1 : Number of Fruit Cultivators from Each Acreage Category From Each Village from the Poona District Included in the Study

Sr. No.	Operational Holding (in acres)	Village															Total	
		Talegaon Dhamdhare	Saswad	Dive	Velu	Shikrapur	Ranjangaon Ganapati	Otur	Rajuri	Ale	Belhe	Hadapsar	Yawat	Uruli Kanchan	Baramati	Baner		Sakurde Belsar
1.	> 0 < 1.00	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2
2.	> 1 < 5.00	-	1	4	3	1	-	4	3	1	1	-	1	6	-	3	3	31
3.	> 5 < 10.00	2	-	13	3	4	1	4	2	1	1	-	1	1	5	1	3	42
4.	> 10 < 15.00	1	2	3	2	1	1	1	2	1	1	1	-	1	11	-	1	29
5.	> 15 < 20.00	2	-	-	-	2	1	1	1	-	1	-	-	-	1	-	2	11
6.	> 20 < 25.00	1	1	-	1	1	2	-	-	2	-	-	-	1	-	1	-	10
7.	> 25 < 30.00	1	-	-	-	1	1	-	-	-	1	-	-	1	2	-	1	8
8.	> 30 < 50.00	1	-	-	-	-	4	-	2	-	-	1	-	-	-	-	-	8
9.	> 50 < 100.00	2	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	3
Total		10	5	20	10	10	10	10	10	5	5	2	2	10	20	5	10	144

planned to include in the survey at least 20 per cent of these middlemen. However, because of suspected variability in their covert procedures nearly half or 20 of them were interviewed. Of the approximately one hundred khotidars¹⁴ and forty bagwans¹⁵ operating in the Poona district, 15 khotidars and 10 bagwans were interviewed. Although only a little over four hundred fruit retailers were registered to operate in the Poona city, many hawkers were known to operate without licences. Therefore, the actual number of fruit retailers of all operational sizes during the survey period may be estimated at about seven hundred. Seven per cent of all retailers of fruit operating in Poona city were also included in the survey sample. There were between forty to fifty vyaparis¹⁶ operating in the Poona district in 1978-80. About 20 per cent of those retailers interviewed also acted as vyaparis and purchased their grape and figs directly from the villages, almost on a regular basis.

The total research sample therefore consisted of:

14 The khotidars are pre-harvest contractors who purchase citrus orchards at fairly early stages of fruit development.

15 The bagwans are pre-harvest contractors who purchase banana orchards when fruit development is completed.

16 The vyaparis are traders who purchase grapes and figs.

Cultivators	144 ✓
Commission agents	20
Khotidars	15
Bagwans	10
Retailers and Vyaparis	50

	239

1.5.3 DESCRIPTION OF QUESTIONNAIRES

The nature of information that was sought from the cultivators pertained to the general practices of fruit cultivation, care, packing, transportation and sale of fruit. Besides this, specific enquiries were made about costs of cultivation, watching, plucking, packing, transportation and sale. A total of 128 sales slips were acquired from cultivators and middlemen for a better analysis of marketing costs and other deductions. These proved to be a very valuable source of verification and analysis of important statistics with regard/^{to}the costs at the market and excess charges.

All cost information was acquired by operation and split into labour and material costs. Wherever family labour was used, or inputs were obtained from a friend or relative or through a barter, the market value of these at the then current rates was obtained. All cost figures pertain to 1978-79 rates. The farmers were also asked to provide their credit positions and returns.

Besides acquiring quantitative data and information regarding methods of production and marketing, sociological and general information such as experience in the business, other occupation, caste, education, market intelligence, other crops grown and the respondents' opinion and experience about the regulated Poona market were also obtained from the cultivators. This information was tabulated into either quantitative or qualitative terms to analyse the respective impact of each upon gross and net returns, if any.

The middlemen were specifically asked about their methods and the methods adopted by their competitors. Many hours were spent in trying to get a clearer idea of their priorities and how they settled a price for an orchard.

The retailers were questioned about the fruit damaged in keeping and their margins. Their opinion about market regulation, packing, prices and fruit quality was also sought.

All questions were asked in Marathi. Each interview took anywhere from two hours to eighteen hours, sometimes split over several sessions.

Information and statistics such as the ones collected are intended to describe the process of marketing, revealing both the channels as well as the market powers and power-plays of each functionary. With the intensive questioning and the personal observations it was hoped to reveal not only any hidden charges, etc., that still remained, but also to

illustrate the actual forces that control and direct the economics of fruit marketing in Poona. Statistics regarding costs of cultivation, packing, transportation and sale are expected to give us the total cost of marketing as well as to help us arrive at the net revenue figures.

1.5.4 EFFORTS TO VERIFY THE RELIABILITY OF DATA

Great effort was made to ensure the quality of data used in this research. Often the time for the interview was deliberately picked to coincide with the interviewees' normal operating hours so that the actual procedures could be observed. This has been the most valuable part of the interview method: to personally observe the care of the orchards, as also the processes of harvesting, storage, packing, transportation, and sale of the fruits. The presence of the interviewer at the scene of operation for prolonged periods of time put the functionaries at ease and also made it possible to interpret the responses more correctly.

Apart from the conduct of interviews, this researcher spent many hours with different functionaries unobtrusively watching their procedures and listening to their conversations over cups of oversweet tea.

English translations of the questionnaires that were used for this study are given in the appendix. The questionnaires presented here are the final versions of each. Prior to the final version two earlier versions were tested in pilot

surveys to gauge the interviewee responses. The respondees of the pilot survey were not included in the sample that was finally selected for the survey.

In spite of the pilot surveys and the consequent revisions of the questionnaires, the method of filling prepared forms alone was often found to be an inadequate tool of data acquisition. In such circumstances the interviewer was flexible and used a method of casual conversation to acquire information instead. For example, quite so many variations in methods of marketing had not been anticipated even after the pilot survey. Therefore the questionnaire did not provide questions that were needed to catch all the individual variations in the methods of sale. In occasions such as these casual conversation and ad hoc questions developed during the interview were the methods used to obtain the additional information. At the end of each interview the replies were quickly checked against the questionnaires to ensure that no question has been missed.

In cases where the respondents refused to give full information or where the information collected was suspected to be of doubtful authenticity, such questionnaires were deleted from the sample. Great pain was also taken to understand what the respondent meant when he made a statement. Sometimes several trips were made back to the same respondent to cross-check facts if answers were found not to match in different sections of the questionnaire. The method of

cross-checking and verification also improved the quality of the revenue information. For example, since perceptions of "net revenue" vary at times it was not clear as regards which costs had been deducted from the gross revenue to obtain a particular "net revenue" figure. The method of cross-checking helped to clarify this ambiguity. In this instance after some cross-checking it was realised that several of those respondents that directly sold to the market were referring to the cash they received after marketing costs had been deducted. On the other hand, those selling to the khotidars obviously did not make such deductions. Still others referred to 'income' as net income after the deduction of both marketing as well as cultivation costs. The middlemen such as the bagwans also have more than a single common method for making the payment. Therefore, each reply had to be tediously interpreted individually. Because of the double-checking of the data and the time and care taken in collecting the information, it may be said that the information and data provided here are reliable. The reason for this emphasis is that the contribution of this research includes methods of data accumulation.

1.6.1 CONCLUDING REMARKS ON THE RATIONALE OF THIS STUDY

To sum up, the commercial nature of fruit cultivation makes the marketing of fruit an essential segment of the fruit economy. Many acres of fruit/are cultivated in orchards

the Poona district and much of this is being sold through the regulated fruit section of the Poona wholesale market. It is the objective of this research to study not only the changes in the fruit marketing structure that have evolved as a natural process of economic growth and transition of the region, but also to seek out the specific changes that may be attributable to the regulation of the Poona wholesale fruit market. The following chapters will, therefore, both describe and analyse the fruit marketing structure between the fruit growing areas of the Poona district and the sale of the fruits at the Poona city market.

CHAPTER II

HISTORY AND PURPOSE OF MARKET REGULATION IN INDIA

2.1.1 PROGRESS OF MARKET REGULATION IN INDIA

The idea of the regulation of agricultural produce markets in India was first conceived at the end of the 19th century when the first market at Karanja was regulated in 1886 under the Hyderabad Residency's Order. A special law known as the "Cotton and Grain Markets' Law" was enacted in 1897 in the Berar region. The Berar Cotton and Grains Market Law of 1897 specified the penalties for the use of incorrect weights and measures. This initial effort was followed by a period of partial lull which lasted till 1930.

Indian agriculture, at this time was hurting from repeated famines and the pressure of discontent had gradually begun to build among the cultivators.¹ As the political voice of the cultivators was still muted, the British Government of the times following the policy of non-intervention, watched and waited, but refused to get involved. Finally the suppressed resentment of cultivators reached a pitch that threatened to be a danger to the peace.²

Hoping to forestall the eruption the British

1 & 2 The Report of the Royal Commission on Agriculture in India, p. 6.

Government set up two different committees, ten years apart to enquire into the problems of cultivators. These were the Indian Central Cotton Committee (1918) and the Royal Commission on Agriculture (1928).

Thus the Royal Commission on Agriculture was first set up in 1927 to look into the problems of the agriculturists, and once again in 1928 to look into the problem in greater detail. It was the 1928 Royal Commission Report which studied the problem of marketing and markets in some detail for the first time. The 1928 Royal Commission Report made some useful recommendations based on the significant revelations of the hearings, while the earlier reports had concerned themselves with only the more general problems of agriculture. The 1928 Report made an all India survey based upon interviews with farmers who visited the market personally, and reported the defects of the system that came to light through the survey. As the purpose behind the setting of the Commission was pacificatory, the report was not followed by any immediate corrective action from the government. Although other weights and measures Acts such as the Bombay Weights and Measures Act (1932) continued to be passed these were (in the absence of any enforcing body such as a Market Committee or any force of purpose) without any mentionable implementation.

Both the Committees (1918 and 1928) strongly recommended the regulation of agricultural markets in their

reports. These reports are considered to have been major break-throughs towards the creation of awareness about the actual conditions in agricultural marketing and of the necessity for enacting market legislation.

In 1937 the first Congress cabinet came into power. Along with a host of other problems hitherto neglected, the new government took up the problem of the cultivators and the Vaikuntha Bhai Mehta Commission was set up to investigate the anomalies of the marketing system. The conclusions made by the Mehta Commission were not very different from the facts revealed by the earlier reports. The 1937 report revealed that the farmers sending produce to the markets were being cheated and exploited in a large measure. In response to the recommendations of the Mehta Commission Report the Bombay Agricultural Produce Marketing Act 1939,³ was introduced in the Bombay Province. It was the first legislation of its kind in India and was, of course, applicable only to the then Bombay Province. Bombay, being the port facing the West, had become the principal centre for trade and the major assembly and export market for agricultural produce and thus naturally was the first to receive the needed attention. With that enactment the matter came temporarily to an end and the situation continued almost as before.

3 Market legislation was being evolved in such a way that several different Acts were simultaneously applicable to the Bombay Province. These overlapping Acts were (a) The Central Provinces and Berar Cotton Markets Act of 1932, (b) The Central Provinces and Berar Cotton Markets Act of 1935, (c) The Hyderabad Agricultural Markets Act of 1939 and, (d) The Bombay Agricultural Produce Markets Act of 1939.

By 1947 only a few States had passed market legislation. These were Bombay (1927),⁴ Central Provinces (1932 and 1935),⁵ Madras (1938), Punjab (1941) and Patiala (1947). The passage of the Mysore Agricultural Produce Markets Act (1939) was not followed by the Rules to that Act till after Independence (1948).

After Indian Independence in 1947, however, attention was once again focused on this problem. Independence released many energies for change. In this new environ the recommendations of the reports received response and resulted in an increased momentum for the enactment of market legislation in various Provinces and States.

In the Centre, the Planning Commission emphasised the vital role of regulated markets in promoting orderly marketing of farm produce. The Planning Commission encouraged the State governments to enact relevant market legislation. As a result of this pressure from the Central planning body basic market legislation had been enacted by 1967 in all the States other than Assam, Jammu and Kashmir, West Bengal, Kerala, Goa and Pondicherry. By 1985 4,240 principal and sub-markets across the country had been regulated (Table 2.4).

In Maharashtra, in 1951, the question of forming an Agricultural Produce Marketing Committee was considered by the

4 This was the Bombay Cotton Market Act of 1927.

5 See Footnote 3.

Committee of Advisers of Western Maharashtra. With that began a series of experimentations with the regulation of markets for agricultural produce in this region. The first market committee, in Maharashtra, was the Sangli Market Committee. It was established in 1950, and began actual operation in 1952. After this lead was given, the number of marketing committees on paper as well as in operation continued to increase (Tables 2.4 and 2.5).

2.1.2 HISTORY OF REGULATION OF THE POONA AGRICULTURAL PRODUCE MARKET

The history of regulation of the Poona market can be said to begin from the 9th of April, 1959. This was when the Bombay Agricultural Produce Markets Act of 1939, modified up-to-date, was applied to the jaggery section of the Poona wholesale agricultural produce market. Legally this was done in 1957 and implementation was begun two years later. A Marketing Committee was formed in Poona consisting of 15 members. The details are included in a later section of this chapter.

The year jaggery (or gur) wholesale marketing was regulated in Poona (1959) there was also a proposed resolution to regulate the fruit and vegetable wholesale market (Mahatma Phule Mandai). This effort was thwarted by the violent opposition that it encountered from wholesale traders and commission agents. The opposition to this regulation took the matter upto the High Court. The argument put

forward by them against regulation of the fruit and vegetable wholesale market was that unlike jaggery, these were perishable goods and required speedy disposal. Thus, they claimed, their trade required special consideration and exemption from the Act. It was argued that existing system of disposal through the secret auction method was the quickest and should be permitted to continue. They pleaded that considering the risks involved and the efficiency of disposal required, the costs and charges too were justified. So strong was the opposition and so pitiable the picture presented by these middlemen, that the 1962 High Court verdict went in their favour. This was possible because unlike the agriculturists, the middlemen were well financed and educated. Some of them were lawyers themselves. The defeat of the Market Committee, which was fighting the case of the agriculturists, in the High Court, was partly attributed to insufficient authority in the hands of the Poona organ of the Bombay Marketing Committee. The Poona Committee immediately made a request to the main body for more power to operate as an independent body. The purpose behind such a request was to possess the full powers and finance to bring all agricultural products in its jurisdiction under regulation. The 1963 Maharashtra Agricultural Produce Marketing (Regulation) Act was passed in 1964 to replace the Bombay Agricultural Produce Markets Act of 1939. It came into execution in 1967 under section 44 of the new Market Act. With the reorganisation of the Bombay

Province and the formation of the Maharashtra State in 1960, four separate Acts, "The Bombay Agricultural Produce Markets Act (1939)", "The Central Provinces and Berar Agricultural Product Act (1935)", "The Central Provinces and Berar Cotton Markets Act (1932)", and "The Hyderabad Agricultural Markets Act (1939)", simultaneously applicable in the Bombay Province were amalgamated to form the 1963-64 Market Act. From the 25th of May 1967, this Act became legally applicable to all parts of the Maharashtra State, in spite of all the opposition from the middlemen. The Poona Agricultural Produce Marketing Committee was established in 1967. Through the 1963 Act, the Poona Agricultural Produce Marketing Committee was granted independent authority and full powers to enforce the execution of the legislation now made applicable. The jurisdiction of the Poona Market Committee extended over the Poona city and Haveli taluka. There are several other Market Committees within the Poona district which have come into being in the course of years, and each operates today as independent body.

These impediments overcome, in 1968 turmeric, coriander seeds, dry red chillies and tamarind were also brought under the purview of regulation. In the second half of 1967 another futile attempt was made to regulate fruit, vegetables, condiments and cattle marketing. A similar attempt succeeded at least partially, in the nearby Hadapsar vegetable market in January 1968.

At this time the Hadapsar market was not a subsidiary of the Poona market. Actual and complete execution, however, was not begun even at Hadapsar owing to the non-co-operation of the dalals (the commission agents and wholesale traders). In 1971, under section 44 (Amalgamation or division of Market Committees) of the Maharashtra Act No. XX of 1964 or The Maharashtra Agricultural Produce Marketing (Regulation) Act, 1963, the Poona and Hadapsar markets were amalgamated, and both Poona city taluka and the Haveli taluka came under the jurisdiction of the Poona Agricultural Produce Marketing Committee (PAPMC). Cereals and pulses were regulated in 1972 and also firewood and fodder in 1973. On the 10th of February, 1976, potatoes, onion, garlic, tamarind coming to the mandai as well as ginger marketing were regulated. The fruit and vegetable section, the only one to remain outside the purview of the operation of the Markets Act, saw the implementation of regulation from the 13th of September 1976. The regulation of this section had faced the maximum opposition from the middlemen. Seventeen more days were required for full implementation. The application of the Markets Act on the fruit and vegetable section began from the 1st of October, 1976. Prior to this the dalals had put up one last effort at resistance. Their plea had been: Regulation would never work because

- 1) with the implementation of the Act the commission agents would stop giving advance without security since they could not charge an interest on the sum. Therefore, at critical moments of financial difficulties, the agriculturists would have to do without funds;

- ii) the market space at the mandai was insufficient for conducting the sales on the basis of the rules laid down by the regulation;
- iii) the financial position of the retailers who purchased the produce and the perishable nature of the crop, necessitated sale on credit. Under these circumstances immediate payment to the producers after the sale of the produce (as required by the rules of regulation) would not be possible.

Fortunately, consensus was finally reached. The emergency powers with the government at the time (1975-76) prevented the dalals from pressing the matter very far. Moreover, the persistence of the government and the growing political pressure of the larger and more powerful agriculturists, made it evident that implementation was now a matter of time. Further resistance would be useless. In the long run perspective the intermediaries felt that the best strategy under the circumstances was to compromise and hit the best bargain possible. The opposing factors thus agreed on a somewhat 'compromising regulation' and this was implemented.

The Poona wholesale market was thus the first market in Maharashtra to have implemented regulation on fruit and vegetable marketing.

2.2.1 THE CIRCUMSTANCES THAT LED TO MARKET REGULATION IN INDIA

The Indian Central Cotton Committee reported in 1919, that the cultivator was heavily handicapped in securing an

adequate price for his produce, and that the most satisfactory way in which his difficulties could be removed was the establishment of regulated market for cotton. The Government of Bombay, therefore, enacted the Bombay Cotton Market Act, 1927, to control the marketing of cotton in some of the markets to be established under the Act.

In the following year, the Royal Commission on Agriculture in India examined the problem of agricultural marketing in greater detail. The Commission came to the conclusion that "the importance of properly organised markets lies not in the obligation they fulfil, but in their reactions upon production". The Royal Commission was particularly impressed by the objects of the Bombay Cotton Markets Act (1927) as enumerated in the "statement of objects and reasons" viz. to secure to the cultivator "better prices, fair weighments, and freedom from illegal deductions". The Commission was of the view that "if the establishment of regulated market can secure this in respect of cotton, it can do so equally well in respect of other products".

The Bombay pattern of legislation was recommended for extension with minor adjustments to the whole field of agricultural marketing in the country. The idea behind the recommendations was that:

... until the agriculturists realise that as a seller of produce, he must study the art of sale either as an individual or through combination with other producers, it is inevitable that he should come off second best in his context with the highly specialised knowledge, and the vastly superior resources of those who purchase his produce.⁶

This view was shared by the Indian Central Banking Enquiry Committee, and the Bombay Provincial Banking Enquiry Committee made detailed recommendations on the question of regulation of markets, mainly on the lines of the Bombay Cotton Markets Act (Act XVII of 1927).

In pursuance of the recommendations of these Committees, the Government of Bombay introduced in the Bombay Legislative Council, and later in the Bombay Legislative Assembly, in 1939, a Bill "to provide for proper regulation of buying and selling of agricultural produce". The legislation was later enacted as the Bombay Agricultural Produce Markets Act, 1939. Since then, the Act and the Rules framed thereunder have been amended from time to time in the light of their operation. The working of regulated markets was reviewed by Professor M. L. Dantwala. Having completed the task, Professor Dantwala ascertained the difficulties experienced in the administration of the Act. Certain improvements in the Act and the administrative machinery were recommended by him as a consequence of his

6 Op.cit., p. 382.

findings. This resulted in only minor modifications in the existing mechanism.⁷

The unsatisfactory condition of agricultural marketing in India and elsewhere in the world led to the call for the regulation of markets and marketing activities. It was found through various studies that the cultivators who laboured to produce the crop, received quite a small portion⁸ of the final price paid for it by the consumer. In the case of fruit reaching the consumer in the processed or canned form, the farmer's percentage share was even smaller. The crop usually went through a number of intermediaries who formed the channels of marketing. These intermediaries extracted from the final price service charges, the amounts for which far exceeded their costs plus normal profit margin.⁹

7 The Report of the Expert Committee on Review of the Bombay Agricultural Produce Market Act, 1939. Government of Bombay, 1956.

8 G. S. Cheema, "Marketing of Fruits and Vegetables in Bombay", 1932. In the Foreword by the then Director of Agriculture, T. F. Main on p.(1) only 11 per cent of consumer's rupee is reported to go into the pocket of the grower.

9 (i) In the Foreword of the study by G. S. Cheema (1932) mentioned above, the then Director of Agriculture, T. F. Main, states that 71 per cent of the retail price of fruit was taken by middlemen. This information was collected from the then Bombay Presidency Fruit Grower's Association.

(ii) In "Marketing of Bananas in India", 1945, p.62, between Pannaikadu and the Madras market the wholesaler's plus the contractor's margins add up to 26.2 per cent of the retailer's price.

These intermediaries were known variously as 'adat', 'adatyā', 'dalal', or 'commission agents'. It was the commission agents' duty to collect the produce from a number of farmers located in different regions and at different distances from the market. It was also the commission agents' duty to set the price for the farmer and to decide to which of the many claimants the produce would finally be sold. It was a crucial function in the absence of the open auction system. The obvious power of their position soon brought elements of corruption and exploitation into the marketing system.

Moreover, these intermediaries or middlemen, though horizontally competitive, were known to be often vertically collusive in exploiting the farmers' vulnerability. The farmers were especially vulnerable because of their financial insecurities. The difficulties arose because of: (i) insufficient capital at the time of harvesting and marketing and (ii) their ignorance of marketing conditions because of insufficient direct contact with the markets. The latter was a direct outcome of their inability to spare man-power from the farms and consequently to maintain personal contact with distant market and consumers. The cultivators needed someone to take their produce from their farms to often distant purchasers. For commodities such as fruit almost all the demand lay in the distant urban areas. The intermediaries took full advantage of their indispensability and of the helpless

dependence of the cultivators to make a substantial profit for themselves.

The exploitation took the form of overcharges, under-statements of price, under-counting or under-weighment and extraction of the produce as 'samples' or 'compensation' for supposed inferior quality.¹⁰ The costs of marketing, the numerous deductions and the commission of the agents, were found to be exceedingly high and not commensurate with the services provided by them. Some of these deductions were dharmadaya,¹¹ kasar,¹² vatav,¹³ jamadari,¹⁴ panjerp¹⁵ and commission. Charges such as "dharmadaya" or charity and "panjerp¹⁵" or contribution for the care of older cattle as in the Bombay Province, were totally irrelevant to the marketing system. The reason why such charges were possible was that farmers were too helpless to resist any form of

10 An example of this would be the kasar which would be a deduction for mud etc. supposedly sticking to the fruit.

11 Charity or donation for some religious cause.

12 Deductions made for the mud, etc., which the uncleaned produce carried with them, and this could vary from 0.5 per cent to 1.5 per cent of the wholesale price.

13 Deduction made if the farmer, in need of immediate finance asked for immediate or even early payment.

14 The sample of the product, which the commission agents retained from their own use; and which could be 1 per cent of the total produce or more.

15 Deduction for donation made for the upkeep of the asylum for older cattle.

extortion, and therefore could be used for the satisfaction of others philanthropic interests.

Quite often, each of these items individually formed only a small percentage of the price, but the cumulative effect of all of them was large enough to cause a substantial pinch in the farmer's purse. The post-deduction balance for the farmer was only a small¹⁶ percentage of the wholesale price.

In addition, there was an interest on advances of 16 per cent or more. The exact deductions varied from market to market. Besides these open deductions, there were covert deductions even larger in size. This was possible because the farmers had no alternative to the services of the middlemen, and thus were at the mercy of the commission agents. For those farmers from nearby areas who personally brought their consignments to the markets matters were not improved as the sale was conducted entirely by the commission agent. The farmer had no role to play in the proceedings and was not consulted in any matter. Matters were made still worse because of the closed auction system and the secret bidding conducted with hand signals (known as the hattya paddat) under cover of a cloth. Even when present at the site of the auction the cultivator was in the dark about the nature of prices bid and the price at which the produce was actually sold. Perhaps the biggest deduction from the wholesale price

16 See Footnote 5.

was made covertly by understating the price. The amount gained by the commission agent through the understatement of the price was a higher percentage of the wholesale price than the commission agreed upon. These malpractices usually left the cultivator with modest¹⁷ net earnings. Moreover, deplorable standards of sanitation existed at the place of sale. Necessary social and economic amenities (e.g. controlled temperature, storage facilities, banks, water, etc.) were also conspicuously absent.

It was the revelation of the existence of such adverse conditions in agricultural marketing in every province in India that urged the introduction of corrective measures. The correction of marketing irregularities was deemed possible only through the intervention and control by the government. This could be done either directly or indirectly through a legally constituted autonomous body such as a Marketing Committee, answerable to the government on all major matters. Charges, costs, methods and duties needed to be standardised and some fundamental amenities provided. As the functionaries were private profit-oriented businessmen, such standardisation and control on their charges required legal and judicial sanction. The standardisation and control of charges and methods of marketing within a given area, by law, is what is known as the Regulation of markets. The administration of

17 See Footnote 5.

the wholesale marketyard where the producers' produce is disposed off is entrusted to an authorised body known in India as the Agricultural Produce Marketing Committee (and as a Marketing Board in most Western countries). The area and markets under the jurisdiction of the Committee and its precise powers are prescribed by what is known as the Agricultural Produce Marketing Act Regulations. These regulations are amended upto a particular year, and the legal sanction comes in the form of an Agricultural Produce Markets Act. The members of the Marketing Committee are partly elected from a general body of farmers and partly nominated by the government. The exact composition, powers and duties vary, while the basic purpose and functions of the Committee remain the same: to create conditions of marketing more favourable to the farmers, protect them against exploitation of the middlemen, and pave the way for a system for a more just system.

The expected benefits from a well regulated market extolled in several sections of the Royal Commission's Report on Agriculture. In one section the Report says:

... it is established that the cultivator obtains a much better price for his produce when he disposes of it in a market than when he sells in his village, the importance to him of properly organised markets needs no emphasis. The importance of such markets lies not only in the functions they fulfil but in their reactions upon production. Well regulated markets create in the mind of the cultivator a feeling of confidence and of receiving fair play and this is the mood in which he is most ready to

accept new ideas and to strive to improve his agricultural practice. Unless the cultivator can be certain of securing adequate value for the quality and purity of his produce, the effort required for an improvement in these will not be forthcoming. ^{18/}

And then, again, "The value of the educative effect of well regulated markets on the producer can hardly be exaggerated but it has yet to be recognised in India."¹⁹ From this and the preceding quote it is evident the 1928 Royal Commission Report recognised the potential of market regulation in creating a better framework for the marketing of agricultural products in India.

2.2.2 THE CONDITIONS LEADING TO THE REGULATION OF THE POONA MARKET

The conditions that led to the regulation of the Poona market were similar to that of the rest of India. The objective of the market regulation was to safeguard the interests of the agriculturists whose bargaining power was much weaker than that of the middlemen. Market regulation seeks to "secure to the cultivator better prices, fairer weighment and freedom from illegal deductions".²⁰

One of the recommendations of the Gadgil and Gadgil report to the Poona Agricultural Produce Market was:

18 Report of Royal Commission on Agriculture, Section 327, p. 388.

19 Ibid., p. 388.

20 Ibid., p. 391.

The Market Committee should regulate the dealings of commission salesmen specially with a view to abolish secret auctions and prevent them from combining their business with wholesale or retail dealings in fruit. The Market Committee should also determine the scale of trade allowances to be received by salesmen and others and prevent all improper exactions.^{21/}

The Poona Agricultural Produce Markets Act of 1963 and its subsequent modifications were intended to bring order into the market, standardise procedures and costs and introduce hygienic standards.

The purpose of these changes was to encourage growers to personally visit the wholesale market yard more frequently. Better conditions at the market, it was hoped, would encourage cultivators or their agents to be present on the site of wholesale. Even without the grower or his agent's presence at the site of sale the presence of the market committee's supervision, it was expected, would ensure less cheating and higher net returns to them.

In a nut-shell, the Poona Agricultural Produce Market Committee (PAMPC) has adopted corrective measures with respect to the following anomalies:²²

1) The commission agents kept the farmers in the dark about actual market conditions and exploited the farmers

21 Gadgil Report, op.cit., p. 177.

22 This information was supplied by Shri Shinde, Secretary, PAMPC and by Shri B. B. Boob, Additional Secretary of the PAMPC.

by understating the price since the sales transactions were taking place in the absence of the agriculturists.

ii) They exploited the lack of education and ignorance of the farmers by using incorrect weights, by under-counting and other actions.

iii) The commission agents did not reveal the actual accounts to the farmers. They often made piecemeal payments at their own leisure and convenience, sometimes not even paying the full amount.

iv) They extracted unfair and undue deductions from the farmers under one pretext or the other, even outside the declared costs. One example of the excess deductions would be the commonly made deduction of 3 kilograms per 60 kilograms in jaggery (earlier in seers). Another would be the one kilogram deduction for every 40 kilograms of onions and potatoes. Still another would be in the leafy vegetables section where 100 units actually meant 132 units.

v) The commission agents were charging interest on the credit advances they made to cultivators to the extent of 1.5 to 2.0 per cent per month. When the committee disallowed these interest charges on advances the commission agents set up separate branches with moneylending licences. These interest deductions were made prior to payments to cultivators and usually did not show up in the sales slips. The commission agents would also provide extra services

such as supplying essential pesticides and fertilizers to the agriculturists. They supply these inputs on credit and charge the farmers above the market price. The farmers with smaller supplies had to pay the set interest, while those with larger and more assured supplies were given concessions in this regard.

2.3.1 THE NATURE OF CHANGES INTRODUCED BY THE
REGULATION OF THE POONA WHOLESALE
PRODUCE MARKET

To ascertain the above-mentioned ends the Poona Agricultural Produce Marketing Committee was created. The requirements of the Bombay Agricultural Produce Markets Act of 1939, as modified up to 1st June 1961, are listed first, followed by the 1963 modifications. A Market Committee, by the 1939 regulations, constituted fifteen members. The representation of the Committee members followed the pattern illustrated in Table 2.1.

The term of office after the first two years of the constitution of the Committee for all members, elected and nominated, is three years. The Committee has a Chairman, one Deputy Chairman, and one Secretary, all elected. The actual administration is shared between the Secretary and an Assistant Secretary. In 1959 the Poona Agricultural Produce Marketing Committee began functioning as a subsidiary of the parent body in Bombay.

The 1963 Act, further increased the representation of the agriculturists into the Market Committee and also

Table 2.1 : The Pattern of Representation of Regulated
Market Committee Members (1939 Act)

	Agriculturists 7
	Traders 4
And	If the market yard and the market area are both wholly situated within the limits of one local authority, then:
	i) Local authority, and 1
	ii) Nominated by State Government 3
	----- 15 =====
Or	If the market area and the market yard are under two different local authorities then a re- presentative from each(elected) 2
	Nominated by the State Government 2
	Agriculturists 7
	Traders 4
	----- 15 =====

Source : The Bombay Act No. XXII of 1939, or, The Bombay
Agricultural Produce Markets Act, 1939, as
modified upto 1.6.1961, published by the Govern-
ment of Maharashtra, Law and Judiciary Depart-
ment, 1961, pp. 2147-2148.

specifically emphasised the participation of representatives from Co-operative Societies. The size of the Committee was enlarged to 18 members such that the respective representations of different groups were as shown in Table 2.2.

The term of office was also altered to coincide with corresponding terms of the offices they represent. In effect, most terms were extended to longer durations than the two years prescribed earlier.

The composition of the Market Committee is clearly designed to give adequate representation to agriculturists as a whole and thus to give them a great deal of say in all market related decisions. The financing of the Committee was to come from a market fund into which all contributions would be added, so the functioning of the committee would not be thwarted by external influences. The Market Committee had complete power to prescribe, standardise and control all market activities through the committee's employees.

The corrective measures proposed by the Market Committee in order to impose regulation have been two-pronged.

- i) coercive, through legalities and supervision, and
- ii) persuasive, through suggestion and advice.

The Committee has made the implementation of the law possible to a larger extent than before. The Committee made it compulsory for all produce coming from the farms to be sold under the supervision of a Market Committee surveyor under

Table 2.2: The Pattern of Representation of PAPMC Members
(1964 Act)

(a) Agriculturists residing in the market area (seven of these had to be elected by members of managing committees of agricultural credit societies and multipurpose co-operative societies under the Maharashtra Co-operative Societies Act, 1960, and the remaining three would be elected by village panchayats from the market area)	10
(b) Elected by licensed traders and commission agents	3
(c) Chairman of co-operative society doing business of processing or marketing of agricultural produce from the market area	1
(d) Chairman of Panchayat Samiti	1
(e) President or Sarpanch of local authority other than Panchayat Samiti	1
(f) Extension Officer, Co-operation, appointed by the Zilla Parishad, and with no voting rights	1
(g) The Assistant Cotton Extension Officer, or where there is no such officer, the District Agricultural Officer of the Department of Agriculture (no voting rights)	1
Total	----- 18 =====

Source : Maharashtra Act No. XX of 1964 or The Maharashtra Agricultural Produce Marketing (Regulation) Act, 1963, as modified upto 1972. Government of Maharashtra, Law and Judiciary Department, 1977, pp. 7213-7214.

the open auction system (as opposed to the closed auction of the pre-regulation period).

The following changes have been introduced since the regulation of the Poona wholesale market yard:²³

1) Location; and Facilities

A new wholesale market yard occupying 26 acres of space has been built at Gultekadi. One hundred and fifty acres of land have been bought by the PAPMC for the use of activities related to marketing. These include the "Hamal Bhavan" for the hamals (marketing labour) and rest houses for the farmers to stay over for the night when they accompany their produce. The exact plan of the new market yard is given in the accompanying chart. The wholesale activities of the entire market shifted to Gultekadi on the 16th of April, 1969. The purpose behind the move to this location and the construction of the new and spacious market yard has been to permit the proper functioning of the wholesale market on the rules laid out by the regulation. Hygienic conditions could be expected only where there was no overcrowding and water and other amenities were available. Other facilities such as storage, bank, police headquarters, rest houses, warehouses, parking and unloading space and sufficient space necessary for organised marketing, were easier to provide in

²³ This information was collected from the Poona Agricultural Produce Marketing Committee, Gultekadi, Poona

this new location. The move of the wholesale yard away from the retail unit of the market reduced the overcrowding in each section. It also enabled the wholesale to continue over a longer period each day, thereby reducing the amount that has to be stored and sold the next day.

Cold storage facilities are also now provided near the wholesale market yard. Agricultural Refinance Corporation has provided credit worth Rs. 23 lakhs for a sophisticated cold storage unit for agricultural commodities near the new wholesale market yard at Gultekadi, about 5 kilometers from the heart of the city. This facility is to have a separate section for fruit storage at regulated temperatures of less than freezing point, to suit differing fruit storage requirements. The new storage facilities are to be made available to agriculturists at concessional rates (current market rates are to apply to wholesale and retail traders).

In addition to all the above facilities the convenience of institutionalised banking is also now available very near the Wholesale Produce Market Yard. Space where visiting farmers can rest and spend the night is now available. The Committee's offices, located at the market yard enable the fast and efficient settlement of disputes between traders/agents and cultivators.

2) Standardization of Costs, Charges, Weights and Measures and Closer Supervision of Market Functionaries

One of the biggest problems of the agriculturists prior to regulation had been that the weights and other measures used by the agents were usually above the standard. For instance, a dozen of any fruit could mean anywhere from thirteen to fifteen. The weights used were also often incorrect. For example, the unit of measure "pati"²⁴ was ambiguous, the farmer was often paid for lower grade patis instead of better ones.

The Market Committee prescribed all market charges to set standards. Charges greater than or other than the ones prescribed, are deemed unlawful. By doing so the PAPMC hopes to free cultivators from the ad hoc and extravagant charges and contributions they had experienced under the pre-regulated market system.

Under the present rules all functionaries of the market yard have to obtain licences to function in the area, declare their turnovers (this applies to the commission agents, especially) and pay their income tax. Only certain necessary deductions are permitted to be made, and the exact magnitude of these have been specified by the Committee. All deductions

²⁴ A pati is a unit of wholesale for oranges and guava. There are two principal categories of pati, pati no.1 (made up of 3 dozen fruit) and pati no.2 (made up of 4 dozen fruit of slightly smaller fruit). One pati generally weighs between 6-8 kgs, but there is no clear uniformity.

outside the ones prescribed are now illegal. The commission agents are not permitted to charge an interest on any advances made by them to the farmers or to charge money for services done by them for the cultivators other than these prescribed by the rules.

All produce is required to be weighed by the weighmen employed by the Committee using standard weights and weighing machines supplied by the Committee. The Market Committee appointed supervisors are responsible for closely supervising all activities and ensuring that the rules and procedures decided by the Committee are being obeyed.

Further, it is made compulsory for the commission agents to give accounts of sales proceeds to agriculturists on prescribed forms supplied by the Committee within 24 hours of the sale. One copy of this account slip is retained by the Committee with the view of keeping a check upon the commission agents, and of maintaining records. According to the Secretary of the Committee the response of the commission agents has been good. Auctions of fruits begin at 6 a.m. and all sale slips are handed in by noon.

3) Market Intelligence

In their efforts to assist the agriculturists the PAPMC maintains records of daily arrivals and wholesale prices (maximum, minimum and modal) during each day's auctions and the total amounts sold each day. A monthly statistical

bulletin is published with this statistics and some of the market information is also announced over the radio. This is done with the hope of keeping the agriculturists informed of the actual market conditions and not totally dependent on the commission agents' information. Moreover, market news and prices get regular coverage in the local dailies. Copies of market informational bulletins (in the local language) are regularly sent to villages and co-operatives. The changes introduced by the regulation of the Poona market are listed in Table 2.3.

Table 2.3 : Changes Introduced by the Poona Agricultural Produce Market Committee (Till December 1987)

Prior to Market Regulation	Changes introduced by the Market Regulation
1. Closed auction or "Hattya Paddhat" for wholesale	Open auction for wholesale
2. Commission 10%	Commission 7%
3. Hamali on labour 1%	Hamali about 0.1%
4. Charity fund (Dharmadaya) deducted by the commission agents roughly amounted to 2-3%	No Dharmadaya
5. Insurance 0.25 to 0.50%	No insurance
6. "Watai" or charge for immediate sales proceeds to agriculturists 1%	No watai
7. Measuring and counting charges 1-2%	Measuring and counting charges about 0.2%

contd...

Table 2.3 : (Continued)

Prior to Market Regulation	Changes introduced by the Market Regulation
8. Refilling and packing charges whether or not these services were required 1-2%	Refilling charges only when required 0.2%
9. Postal charges were random and exorbitant	Postal charges to be restricted to Rs.0.45p per daily shipment and sale
10. Detailed account slips were never mailed to the farmers. Sometimes the accounts were settled orally	Detailed account slips must be mailed to the farmers by noon and one copy of the slips must be submitted to the marketing committee.
11. No supervision of activities	One clerk to 15 commissioning agents to supervise activities and check account slips (Hishob patts)
12. In case of disputes the small farmers had no recourse to justice	Sympathetic committee officials help farmers settle disputes with the commissioning agents
13. The farmers were entirely dependent upon the commission agents and traders for all market information	The committee publishes wholesale price and arrival figures in local newspapers. Such information is also announced on the radio
14. Credit dependence of the cultivators upon the commission agents and other middlemen	Credit facilities available at the market yard through nationalised banking institutions
15. No real grading of fruit	Grading of fruit

2.4.1 CONCLUDING REMARKS ON THE REGULATION
OF THE POONA MARKET

The above changes instituted by the regulation of the Poona Agricultural Produce Marketing Committee were expected to have several positive effects favouring the agriculturists. The standardisation in measures and charges is expected to remove unwarranted charges and deductions that were earlier included in the commission agents' sales slips. It was expected, this would increase the farmer's margin. The provision of other facilities like water and a place for the farmers to rest within the market yard, was expected to encourage more of them to visit the market more often than before and become more aware of actual market conditions. The cold storage units could be used for such fruit which spoiled faster under warmer climate and thereby the spoilage rate could be reduced. It was anticipated that the combination of these services would improve the agriculturists' gross as well as net returns.

Table 2.4 : Number of Regulated Markets in Various States

S. No.	State	Area (in sq.kms.)	No. of Regulated Markets			Average Area covered by one market		Market Fee		
			Principal Markets	Sub-Markets	Total	Principal Markets	All Markets inclusive	Rate % advalorem	Annual Income (Rs.in Crores)	Average Income Per Market (Rs.in Lakhs)
1	2	3	4	5	6	7	8	9	10	11
1.	Andhra Pradesh	376,814	202	295	497	1370.36	556.96	.5		
2.	Assam	99,610	6	Nil	6					
3.	Bihar	173,876	320	182	502	543.36	346.36	1	4.68	1.46
4.	Gujarat	195,984	124	150	278	1580.5	715.27	(.1-.4)	0.97	0.78
5.	Haryana	44,222	86	68	154	514.20	287.15	2	9.51	11.05
6.	Himachal Pradesh	55,675	12	30	42	4639.41	1325.54	1	0.10	0.83
7.	Karnataka	191,773	108	153	261	1775.67	734.76	2	3.92	3.62
8.	Madhya Pradesh	442,841	247	55	302	1792.87	1466.36	.5	4.48*	1.81
9.	Maharashtra	307,762	223	238	461	1380.09	667.59	.5	2.27	1.01
10.	Orissa	155,782	76	147	223	2049.76	698.57	.25	0.11	0.14
11.	Punjab	50,362	109	208	317	462.03	158.87	2	16.06	14.73
12.	Rajasthan	342,214	109	96	205	3139.57	1644.84	1		
13.	Tamil Nadu	130,069	169	N.A.	169	769.64		(.25-.40)		
14.	Tripura	1,556	1	-	1	1556	-			
15.	Uttar Pradesh	294,413	249	366	615	1182.38	478.72	1	10.61	4.26
16.	West Bengal	87,853	135	76	211	650.76	416.36	1		
Total			2,176	2,064	4,240					

* Income figures relate to the year when rate of market fee was 1% advalorem.

Source: Office of the Poona Agricultural Produce Markets Committee, Gultekadi, Pune, 1985.

Table 2.5 : A List of Markets in Maharashtra Which Had Regulated Fruit Marketing by September 1980

Village	Mosambi	Orange	Grapes	Bananas	Guava	Chickoo	Mango	Fig
<u>AURANGABAD DIVISION</u>								
1. Ambad	NO	NO	NO	YES	NO	NO	YES	NO
2. Paiton	NO	NO	NO	NO	NO	NO	YES	NO
3. Jalna	YES	YES	YES	YES	YES	YES	YES	NO
4. Bhokardan	YES			YES			YES	NO
5. Lasur	YES	YES	YES	YES	YES	YES	YES	YES
6. Vyzapur	NO	NO	NO	NO	NO	NO	YES	NO
7. Ahmedpur	NO	NO	NO	NO	NO	NO	YES	NO
8. Kalamb	NO	NO	YES	YES	YES	NO	YES	NO
9. Nilanga	YES	YES	YES	YES	YES	YES	YES	YES
10. Murum	NO	NO	NO	NO	NO	NO	YES	NO
11. Umri	NO	NO	NO	NO	NO	NO	YES	NO
12. Kinvat	NO	NO	NO	NO	NO	NO	YES	NO
13. Nayagaon	NO	NO	NO	NO	NO	NO	YES	NO
14. Nanded	NO	NO	NO	NO	NO	NO	YES	NO
15. Bhokar	NO	NO	NO	NO	NO	NO	YES	NO
16. Hadgaon	NO	NO	NO	NO	NO	NO	YES	NO
17. Akhadavalapur	NO	NO	NO	NO	NO	NO	YES	NO
18. Jinur	NO	NO	NO	NO	NO	NO	YES	NO
19. Purna	NO	NO	NO	NO	NO	NO	YES	NO
20. Manwat	NO	NO	NO	NO	NO	NO	YES	NO
21. Selu	NO	NO	NO	NO	NO	NO	YES	NO
22. Parlivaijnath	NO	NO	NO	NO	NO	NO	YES	NO
23. Beed	NO	NO	NO	NO	NO	NO	YES	NO
24. Manjalgaon	NO	NO	NO	NO	NO	NO	YES	NO

(continued)

Table 2.5 : (continued)

Village	Mosambi	Orange	Grapes	Bananas	Guava	Chickoo	Mango	Fig
<u>POONA DIVISION</u>								
1. Ahmednagar	YES	YES	YES	YES	YES	YES	YES	YES
2. Kopergaon	YES	YES	YES	YES	NO	YES	YES	NO
3. RAHURI	YES	NO	YES	NO	NO	NO	NO	NO
4. JUNNAR	NO	NO	NO	YES	NO	NO	YES	NO
5. Pune	YES	YES	YES	YES	YES	YES	YES	YES
6. Baramati	YES	NO	NO	NO	NO	NO	NO	NO
7. Sholapur	NO	NO	YES	YES	YES	NO	YES	NO
<u>BOMBAY DIVISION</u>								
1. Chalisgaon	YES	YES	NO	YES	NO	NO	YES	NO
2. Dharangaon	NO	NO	NO	NO	NO	NO	YES	NO
3. Navapur	NO	NO	NO	NO	NO	NO	YES	NO
4. Shirpur	YES	YES	NO	NO	NO	NO	YES	NO
5. Dhule	YES	YES	YES	YES	YES	YES	YES	NO
6. Kalwan	NO	NO	NO	NO	NO	NO	YES	NO
7. Nasik	YES	YES	YES	YES	YES	YES	YES	YES
8. Nandgaon	NO	NO	NO	NO	NO	NO	YES	NO
9. BOMBAY	YES	YES	NO	NO	NO	NO	NO	NO

(continued)

Table 2.5 : (continued)

Village	Mosambi	Orange	Grapes	Bananas	Guava	Chickoo	Mango	Fig
<u>NAGPUR DIVISION</u>								
1. Amravati	YES	YES	YES	YES	YES	YES	YES	YES
2. Anjangaon	YES	YES	YES	YES	YES	YES	YES	YES
3. Morshi	YES	YES	YES	YES	YES	NO	YES	NO
4. Varud	YES	YES	NO	YES	NO	NO	YES	NO
5. Varora	YES	NO	NO	NO	NO	NO	YES	NO
6. Katol	NO	YES	NO	NO	NO	NO	NO	NO
7. Kamaleshwar	NO	YES	NO	NO	NO	NO	NO	NO
8. Nagpur	YES	YES	YES	YES	YES	YES	YES	YES
9. Narkhed	YES	YES	NO	NO	NO	NO	NO	NO
10. Bhivapur	YES	YES	YES	YES	YES	YES	YES	YES
11. Ramtek	NO	YES	NO	NO	YES	NO	NO	NO
12. Savner	NO	YES	NO	NO	NO	NO	NO	NO
13. Chikhli	YES	YES	YES	NO	NO	NO	YES	NO
14. Nandura	NO	NO	NO	YES	NO	NO	NO	NO
15. Malkapur	YES	YES	NO	YES	NO	NO	YES	NO
16. Amgaon	YES	YES	YES	YES	YES	YES	YES	YES
17. Tiroda	YES	YES	YES	YES	YES	YES	YES	YES
18. Tumsar	YES	YES	NO	NO	YES	NO	YES	NO
19. Darwaha	YES	YES	YES	YES	YES	YES	YES	YES
20. Arvi	YES	YES	YES	YES	YES	NO	YES	NO
21. Wardha	YES	YES	NO	YES	YES	NO	YES	NO
22. Sindi	YES	YES	YES	YES	YES	NO	NO	NO

Source : Unpublished Report of the Poona Agricultural Produce Market Committee, Gultekadi, Pune.

CHAPTER III

CULTIVATION OF FRUIT IN THE POONA DISTRICT

3.1.1 AGRO-CLIMATIC CONDITIONS OF THE POONA DISTRICT AND ITS FRUIT GROWING TALUKAS

The Poona District¹ lying between 17°54' and 19°24'N latitude and 73°19' and 75°10'E longitude has an area of 15642 sq.kms.² It is bounded on the north by Ahmednagar district, on the east by Ahmednagar and Sholapur districts, on the south by Sholapur and Satara districts and by the Kolaba and Thana districts towards the west. The district lies in the Bhima and Nira basin. The main range of the Sahyadri runs along its western boundary. The Bhima rises in the Sahyadri and flows south eastward through the central parts of the district. It forms the eastern boundary of the district for about 100 miles. The Nira river forms the southern boundary of the district for a considerable distance. Karha, Kukadi, Pawana, Mula-Mutha, Meena, Vel, Ghod, Pushpawati and Indrayani are some of the other important rivers of the district.³ All of these rivers flow with a magnificent

1 For administrative purposes the district is divided into 14 sub-divisions known as talukas or tahsils. These are Junnar, Ambegaon, Khed, Shirur, Mawal, Poona City, Haveli, Dhond, Mulshi, Velhe, Purandhar, Baramati, Indapur and Bhor.

2 Socio-Economic Review and District Statistical Abstract of Pune District, 1981-82, p.1.

3 District Census Handbook, Poona (1961), p.1.

volume of water during the rainy seasons and shrink into narrow threads during the hot season. The soils of the district are lighter in the west than in the east, and broadly belong to three classes: black, red and brown.⁴ In some places one finds blends of these soil types. The average rainfall in the district varies from 4,500 mm in Lonavla region of Mawal taluka in the west to 750 mm in Poona area to less than 500 mm in Baramati-Indapur area in the east.⁵ The district gets rain mostly from the south-west monsoons and is restricted only to four months. There is also substantial variation in the rainfall from one year to the next and the coefficient of variation in the rainfall has been as high as over 28 per cent in certain areas⁶ indicating the chief reason behind water scarcity in the district. A technical survey unit of the Government of Maharashtra divided the Pune district in four agro-climatic zones, one of which is the scarcity zone.⁷ The scarcity zone receives rainfall ranging from less than 500 mm to about 700 mm per annum, and includes the eastern and central parts of Shirur, Daund, Indapur, Baramati and Purandhar talukas. These areas frequently experience inadequate

4 Op.cit., p. 2.

5 District Census Handbook:Poona (1961), p.1.

6 Ibid., p.2.

7 Socio-Economic Review and District Statistical Abstract of Pune District (1981-82), p. 3.

rainfall and scarcity of ground water.⁸ The rainy season in the district starts from the early part of June and continues till October. The period between November and February is somewhat cool, and the hot season is from March to May.

In spite of the recurrent water shortage, however, several fruit crops grow well in the Poona district. The variety of soil quality and climate of the district are suitable for the cultivation of orange, mosambi, guava, fig, banana, grape, pomegranates, lemons and other fruits. These fruits are cultivated only in certain selected tracts of the district where the soil and climatic conditions are suitable and either the rainfall is adequate or irrigation is available. The above-mentioned fruits are not cultivated in the Velhe-Mulshi-Mawal talukas i.e. the western part of the district which is comprised of rugged portions of the Sahyadri ranges. Another rugged tract runs through the western portions of Junnar, Ambegaon, Khed and Bhore talukas. These areas are not suited to the cultivation of the fruits being studied in this text. Most of the fruit in the district is cultivated in the zone lying on the eastern side of the Sahyadri ranges and comprising the central part of Junnar, Khed, eastern half of Ambegaon, Bhore and the western portion of Haveli taluka. The soil in this tract is alkaline, and

⁸ District Statistical Abstract of Pune District (1981-82), p. 3.

brown to dark brown and of varying depths.⁹ Among the fruits selected for this study, bananas grow well in Junnar and figs in eastern parts of Bhor.

Fruit cultivation is also found in what is termed the 'scarcity zone'. This zone covers the eastern corner of Junnar, south eastern portion of Khed, eastern half of Haveli and the entire portion of Shirur, Purandhar, Dhond, Baramati and Indapur talukas. Oranges, mosambis, guavas and figs are grown in this tract, as well as grapes in areas where canal water or ground water is available.

3.2.1 THE CHANGING PATTERN OF FRUIT CULTIVATION IN THE POONA DISTRICT BETWEEN 1885 AND 1930-31

Drawing from the relatively little information regarding fruit cultivation and trade in the Poona district in the Poona Gazetteer of 1885¹⁰ one finds that fruit cultivation and marketing was quite widespread. The 1885 Gazetteer of the Bombay Presidency describes fruit cultivation in the Poona district in the following words:

"In gardenlands especially for some miles around Poona, oranges, limes, pomaloes, guavas, plantains, figs, pomegranates, grapes, mangoes, and vegetables of all kinds, both local and foreign are grown in large quantities." 11/

9 Ibid.

10 Gazetteer of the Bombay Presidency (1885), Vol.XVIII, Pt.II, p.169.

11 Ibid., p. 79.

The 1885 Bombay Gazetteer also makes reference to the export of fresh fruit from the Haveli and Purandhar sub-divisions.¹² The proportion of cultivable land under various fruits and vegetables was reported to be approximately 0.5 per cent.¹³

Also, one finds mention of the export of vegetables and fresh fruits from the Haveli and Purandhar sub-divisions.¹⁴ Bananas were found to be cultivated in and traded from Ale, Otur and Junnar in the Junnar sub-division, and from Valha¹⁵ in Purandhar sub-division. There is also a mention of grapes being exported from the villages of Vadgaon, Kandali, Rajuri (Junnar taluka) and from Pabal and Kendur in the Shirur taluka. Fig production was mentioned to be localised in the villages of Diva, Parincha, Sonavri, Gurholi and Mahur in the Purandhar area and from Gogalwadi and Alandi-Chorachi in the Haveli sub-division. Oranges and guavas were mentioned to be grown at Kothrud, Yerandavna, Mundhva, Parbati, Mali and Munjeri in the Poona city area and marketed at Poona.

In the fifty years between the 1885 Gazetteer and the 1933 Gadgil report certain regions have retained their pre-dominance in the production of certain fruit. Examples of such are that of bananas in Junnar, figs in the Purandhar and

12,13 Ibid., pp. 76, 79, 87, 169.
& 14

15 "Valha" is the same as "Walhe" in the Gadgil Report.

guavas in the canal areas in the Haveli taluka. Gogalwadi in Haveli is also mentioned to be one of the larger fruit growing areas in both the reports. The changing pattern of fruit cultivation is to be found especially in the cases of oranges and grapes. The Gazetteer mentions only the villages in the vicinity of Poona city as supplying oranges, whereas by the time of the Gadgil survey the major orange cultivating areas were Shirur, Purandhar and Haveli. Moreover, the grape cultivation in the Junnar and Shirur talukas mentioned in the 1885 Gazetteer is conspicuous by its lack of mention in the Gadgil report. The changing patterns are owing to various reasons, some of which have been discussed in the Gadgil report.¹⁶ According to the Gadgil Report "one of the many reasons why fruit cultivation has spread in the district is that fruit trees require less water for irrigation than crops like sugarcane."¹⁷ The Poona district suffered from water shortage as well as poor quality soil¹⁸ so that for many cultivators in the district the fruit crop was the most suitable commercial crop. The spread of fruit cultivation in the Poona district in the intervening period between the 1885 Gazetteer and the 1930-31 Gadgil survey was given further impetus by the

16 Gadgil Report, op.cit., p. 19.

17 Ibid.

18 Ibid., pp. 7 and 19.

opening of the railway connection¹⁹ with Bombay in 1858 and the spread of railway lines thereafter.

It is mentioned in the Gadgil Report that the M.S.M. Railway, by increasing accessibility to markets, was at least partly responsible for the new orange cultivating tracts in Shirur and Purandhar and the extension of the areas under fig cultivation. In some cases the drop in the price of 'gul' (crude sugar) was said to have encouraged an increase in fruit cultivation, and especially the cultivation of orange and mosambi.

Furthermore the increased water availability as a result of the construction of Lake Fife and the Mutha canals from 1875 also aided the spread of fruit cultivation in the Poona district during this period.

Other sources of irrigation during this period were the Mutha canal which takes off from the Khadakvasla reservoir in the Haveli taluka and dates from 1875. The next work commissioned was the Bhatgar reservoir in the Satara district. It fed the Nira left bank canal. It was opened in 1885. Both these provided for irrigation in the drought-prone talukas of Poona district.²⁰ Then followed construction of the new Bhatgar dam, Vir dam, Nira right bank canal and the remodelling

19 Ibid., pp. 16-17.

20 Sulabha Brahme, Drought in Maharashtra, 1972, A Case for Irrigation Planning, 1983, p. 29.

of the old Nira left bank canal. The new Bhatgar canal was completed in 1927.²¹

3.2.2 PATTERN OF FRUIT CULTIVATION IN POONA DISTRICT (1930-32) AS REPORTED BY THE GADGIL SURVEY

At the time of the Gadgil survey Poona district was reported to be one of the "most considerable producers of fruit in Western India".²² Moreover, in some parts of the Poona district the fruit crop was found to be one of "most important money crops available to the cultivator..."²³ The major fruits grown in the district during the time of the 1930-31 survey were (in the descending order of average) oranges,²⁴ bananas, pomegranates, guavas, figs, lemons, payayas, mangoes, grapes, custard apples and chikoos.²⁵

The most important fruit growing areas were the Haveli and Poona city talukas. After them followed Purandhar, Junnar, Shirur and Baramati²⁶ talukas. The predominant fruit crop in the Junnar taluka was banana, and in Shirur orange

21 Ibid., p. 32.

22 Gadgil Report, op.cit., p. 7.

23 Ibid., p. 7.

24 "Oranges" include orange or Santra and sweet orange or mosambi. The orange-mosambi ratio was roughly 3:2. Ibid., p. 7.

25 Chikoos are sapotas.

26 Before 1949 the Baramati taluka was called Bhimthadi taluka (Poona District Census Handbook, 1961, p. 3).

was the major fruit crop. In Haveli, Purandhar and Baramati several different fruits were grown. Figs were largely confined to Purandhar and guavas grew mostly in the Haveli taluka.

Orange, pomegranate and lemon cultivation was widely spread throughout the important fruit growing talukas. The hilly country to the west of the district with very heavy rainfall had little area under fruit cultivation. The same was more or less true for most parts of the dry tract towards the east of the district except that Shirur taluka had many orange groves. Also, new fruit cultivation had been begun under the Nira canal system in Baramati and Indapur.

The villages of fruit concentration are described in the Gadgil report.²⁷ Oranges were found to be concentrated in two adjacent villages in the Shirur taluka, Talegaon-Dhamdhere and Shikrapur. These two villages were described to contain almost a third of the total acreage of oranges in the district. Orange cultivation was otherwise dispersed between various villages in the Purandhar, Shirur, Khed, Baramati and Dhond²⁸ talukas with no other concentration. Mosambi cultivation was chiefly concentrated in the Khalad-Walunj villages in the Purandhar taluka. The remaining

27 Ibid., pp. 11-13.

28 Dhond was then a 'Peta' sub-division and not a Taluka.

portion of the mosambi cultivation was scattered in various villages in the talukas of Haveli, Purandhar and Junnar. The most important banana growing villages in the district were the three contiguous villages in the Junnar taluka - Ale, Belhe and Rajuri. The second, lesser, concentration was in the villages on the periphery of Poona city such as Baner, Pashan, Vadgaon and Hingne. The acreage in the second banana growing tract was found to be highly fluctuating from one year to the next, and the cultivation was more for the leaves.²⁹ The rest of the banana growing villages were spread between other sections of the Junnar taluka and between Haveli, Purandhar and Baramati. Walhe, a village in the Purandhar taluka, was a fairly important banana cultivating village. The cultivation of guavas in the Poona district during the Gadgil survey was almost entirely confined to villages to the south-west of Poona city on Mutha right and left bank canals.³⁰ Fig cultivation was found to be concentrated in the villages in the north-west section of Purandhar taluka and a few villages in the section of Haveli taluka adjacent to the Purandhar taluka.³¹ There is no mention of grape cultivation in the Poona district in the Gadgil Report.

29 Ibid., p. 12.

30 Ibid., p. 12.

31 Ibid., p. 13.

3.2.3 PATTERN OF FRUIT CULTIVATION IN THE POONA DISTRICT
DURING THE CURRENT SURVEY PERIOD 1978-79

Total fruit cultivation in the Poona district has increased since the Gadgil survey. This is illustrated in Table 3.1. Other changes of note are the significant increase in grape acreage, fairly large increases in the cultivation of guava and other fruits and a minor increase in the case of orange. The acreage under figs, oranges (orange and mosambi combined) and bananas has declined over the fifty year span. While in the case of figs the declining trend is clearer, for mosambi the decrease has occurred between 1974-75 and 1978-79. In the case of bananas, between 1974-75 and 1978-79 there has been an increase in the area cultivated.³² It must be borne in mind that the spread of fruit cultivation in the district is dependent upon the availability of water. Poona district has had several droughts in the recent years. The impact of a drought may not be confined only to the following year's cultivation and yield, but may also last for several years thereafter. The impact of the drought of 1972-73 had not been fully overcome, in many parts of the Poona district and farmers at the time of the survey in 1978-79 still referred to it as the 'recent' drought. It may also be remembered

³² The acreage figures for 1979-80 (the latest year for which data is available at the Statistical Section of the Department of Agriculture, Maharashtra State, Poona-1) were found to be unreliable. Therefore, this data is not being used in this study.

Table 3.1: Acreage Under Fruit in the Poona District (1930-31, 1974-75 and 1978-79)
(Figures in Acres)

Talukas	Oranges								
	Orange			Mosambi			Combined		
	1930-31	1974-75	1978-79	1930-31	1974-75	1978-79	1930-31	1974-75	1978-79
1. Junnar	N.A.	15	15	N.A.	50	35	152	65	50
2. Ambegaon	-	20	20	-	110	110	-	130	130
3. Khed	174	@	-	19	486@	402	193	486	402
4. Shirur	545	742	623	26	355	394	571	1097	1017
5. Mawal	8	30	30	2	25	25	10	55	55
6. Mulshi	-	-	-	-	5	4	-	5	4
7. Haveli	82	7	7	344	84	35	426	91	42
8. Velhe	-	-	-	-	-	-	-	-	-
9. Bhore	**	52	52	**	10	10	**	62	62
10. Purandhar	196	@	176	261	377@	201	457	377	377
11. Baramati (Bhimthadi)	127	10	10	55	144	126	182	154	136
12. Dhond	110	55	59	20	89	95	130	144	154
13. Indapur	41	-	-	-	82	98	41	82	98
14. Poona City	1	-	-	28	7	5	29	7	5
Total	930	931	992	1823	1824	1540	2753	2755	2532

** Included with Haveli taluka.
@ Orange and mosambi combined.

(continued)

Table 3.15: (continued)

Talukas	Guavas			Figs			Bananas		
	1930- 31	1974- 75	1978- 79	1930- 31	1974- 75	1978- 79	1930- 31	1974- 75	1978- 79
1. Junnar	726	30	30	-	*	*	772	910	1082
2. Ambegaon	2	3	3	-	-	-	44	55	59
3. Khed	6	2	2	-	-	-	32	-	-
4. Shirur	-	45	47	-	2	1	16	25	20
5. Mawal	5	7	8	-	-	-	3	2	2
6. Mulshi	-	1	2	-	-	-	-	-	-
7. Haveli	546	880	913	74	13	12	347	142	144
8. Velhe	-	-	-	-	-	-	-	-	-
9. Bhor	**	69	57	**	228	233	**	-	*
10. Purandhar	11	180	186	511	202	191	104	22	52
11. Baramati (Bhimthadi)	21	50	72	2	*	*	147	12	22
12. Dhond	9	58	68	6	-	-	5	7	9
13. Indapur	33	34	40	1	-	-	72	55	60
14. Poona City	145	-	-	3	-	-	14	-	-
Total	1804	1290	1428	597	445	437	1556	1231	1450

(continued)

Table 3.1 : (continued)

Talukas	Grapes			All Other Fruit			Total Fruit		
	1930-31	1974-75	1978-79	1930-31	1974-75	1978-79	1930-31	1974-75	1978-79
1. Junnar	9	57	34	51	231	355	1010	1293	1608
2. Ambegaon	-	-	-	66	43	43	112	231	231
3. Khed	6	10	10	30	174	246	267	672	660
4. Shirur	-	7	7	50	215	236	637	1390	1328
5. Mawal	-	-	-	14	10	10	32	74	70
6. Mulshi	-	-	-	-	49	49	-	55	55
7. Haveli	-	102	102	503	823	787	1896	2051	2001
8. Velhe	-	-	-	-	-	-	-	-	-
9. Bhor **	**	-	*	**	21	35	*	380	387
10. Purandhar	2	25	27	178	123	295	1263	929	1128
11. Baramati (Bhimthadi)	18	263	290	220	218	206	590	697	727
12. Dhond	-	87	88	241	294	270	391	589	588
13. Indapur	2	223	225	33	85	67	182	479	490
14. Poona City	-	112	11	66	46	33	257	65	49
Total	37	789	794	1452	2332	2632	6637	8805	9322

* Included with "All Other Fruit".

** Bhor was a part of Haveli in the 1930s.

- Insignificant acreage

Source: The 1930-31 figures have been taken from the Gadgil Report. The 1974-75 and 1978-79 figures are from the Statistical Section, Department of Agriculture, Maharashtra State, Poona 1, and the taluka headquarters.

that much of the oranges, mosambis, guavas and figs grow in what is termed the 'scarcity zone'³³ of recurrent water shortage caused by inadequate ground water and undependable and scant rainfall.³⁴ Between 1972-73 and 1988 the district has been hit by several more droughts.

3.2.31 THE CULTIVATION OF ORANGES (ORANGES & MOSAMBIS)
IN THE POONA DISTRICT (1978-79)

The largest acreage of oranges in the district was in the Shirur taluka, while mosambis prospered in the Khed, Shirur and Purandhar talukas (Table 3.1). These talukas are in the scarcity zone³⁵ and since oranges and mosambis require much less water than grapes or bananas, these are the most popular fruit crops grown in these areas. Moreover, citrus trees are usually grown on free working medium black or light loam soil. The eastern zone of the district comprising of Baramati, Dhond, Indapur talukas and eastern parts of Haveli, Junnar, Shirur and Purandhar talukas the conditions permit the cultivation of citrus crops.

33 See Footnote 7.

34 See Footnote 8.

35 Percentage of net irrigation area to net area sown:

	<u>1977-78</u>	<u>1978-79</u>	<u>1980-81</u>
Shirur	12.94	13.32	12.54
Purandhar	14.43	15.06	16.07

Source: 1981-82 District Statistical Abstract of Pune District, p.30.

The cultivators of oranges and mosambis traditionally used the mhot irrigation system and were in the process of shifting to pumpsets. At the time of the interviews a small section had shifted to the use of electric pumpsets to irrigate their orchards.↵

Even though in 1977-79 "the rains had been timely"³⁶ in the Poona district farmers complained of severe water shortages in these areas during the summer months.

It may be recalled that the Gadgil report generally refers to the representative fruit grower of the Poona district as "a small cultivator who plants very small orchards".³⁷ However, the average size of operational holding in the drier tracts is larger than the district average.³⁸ For oranges grown in Shirur the average size of operational holding was 22.89 acres (Table 3.2) of which 18.57 per cent was irrigated and 24.71 per cent of the irrigated land was being used for fruit cultivation. For mosambis grown in Sakurde-Belsar the average size of land holding was found to be 11.91 acres for the selected sample. Of this 24.10 per cent was irrigated and 29.62 per cent of the irrigated land was used for fruit cultivation. The average size of orchards in the orange

36 Socio-Economic Review and The District Statistical Abstract of Pune District 1977-79.

37 Gadgil Report, op.cit., p. 18.

38 The average size of cultivation holdings was 11.82 acres, and ownership holding was 11.70 acres in 1960-61 in the Poona District.
Source : 1961 Poona District Census Handbook, p. 44.

Table 3.2 : Proportion of Cultivated Land Per Cultivator Irrigated and Ascribed to Cash and Fruit Crops in the Selected Sample (1978-79)

Fruit	Size of operational holdings (Acres)	Average irrigated acreage per cultivator (Acres)	Average acreage under cash crops (Acres)	Average acreage under fruit crops (Acres)	Average per cultivator percentage of cultivated land			Percentage of irrigated land under fruit	Fruit crops as a percentage of cash crops
					Irrigated	Under cash crops	Under fruit		
	1	2	3	4	5	6	7	8	9
I. Orange									
1. Talegaon Dhamdhere	28.39	4.65	2.11	0.73	16.38	7.43	2.57	15.70	34.60
2. Shikrapur	14.16	4.78	2.85	0.93	33.76	20.13	6.57	19.46	32.63
3. Ranjangaon Ganapati	22.22	3.40	2.78	1.43	12.49	10.21	5.25	42.06	51.44
Weighted average	22.89	4.25	2.61	1.05	18.57	11.40	4.59	24.71	40.23
II. Mosambi									
1. Sakurde Belsar	11.91	2.87	2.42	0.85	24.10	28.72	7.14	29.62	35.12
III. Guava									
1. Talegaon Dhamdhere	39.00	3.85	1.75	0.63	9.87	4.49	1.62	16.36	36.00
2. Saswad	12.04	6.53	3.87	2.98	54.24	32.14	24.75	45.64	77.00
3. Dive	7.73	1.76	2.60	0.78	22.77	33.64	10.09	44.32	30.00
4. Baner	6.48	3.47	2.79	1.64	53.55	43.06	25.31	47.26	58.78
Weighted average	10.61	3.11	2.81	1.34	29.31	26.48	12.63	43.09	47.69

Contd...

Table 3.2 : (Continued)

Fruit	1	2	3	4	5	6	7	8	9
<u>IV. Fig</u>									
1. Dive	7.63	3.23	2.15	0.76	42.33	28.18	9.96	23.53	35.35
2. Velu	8.11	2.39	2.39	0.89	29.47	29.47	10.74	37.24	37.24
Weighted average	7.95	2.58	2.31	0.85	32.45	29.06	10.69	34.50	36.80
<u>V. Banana</u>									
1. Otur	8.00	4.54	3.55	1.28	56.75	44.36	16.00	28.19	36.06
2. Rajuri	13.74	6.59	2.20	1.14	47.96	16.01	8.30	17.30	51.82
3. Ale	13.83	11.25	2.76	2.41	81.34	19.96	17.43	21.42	87.32
4. Belhe	13.77	5.94	2.19	1.64	43.14	15.90	11.91	27.61	74.89
Weighted average	11.85	6.57	2.74	1.48	55.44	41.70	12.49	22.53	54.01
<u>VI. Grape</u>									
1. Hadapsar	23.37	20.05	16.87	1.50	85.79	72.19	6.42	7.48	8.89
2. Uruli Kanchan	10.65	8.37	8.02	1.01	78.59	75.31	9.48	12.07	12.59
3. Yawat	7.50	6.00	4.00	1.38	80.00	53.33	18.40	23.00	34.50
4. Baramati Malegaon	15.27	10.79	6.99	2.89	70.66	45.78	18.93	26.78	41.34
Weighted average	13.93	10.34	7.70	2.15	74.23	55.28	15.43	20.79	20.79

growing areas, however, are still as small (Tables 3.2, 3.3 and 3.4) as was reported in Gadgil Report.³⁹ For oranges the average sized orchard in the selected sample was 1.05 acres which occupied about 4.59 per cent of a cultivator's gross cropped land. For mosambi the average area under fruit crops was even smaller, at 0.85 acres. This was 7.14 per cent of the total average cultivated land.

The cultivation of oranges follows a somewhat traditional pattern - Traditional cultivators and orchard growers with substantial experience in orchard growing dominated the sample of orange and mosambi cultivators (Tables 3.5, 3.6 & 3.7). The only member of the commercial caste was a Gujarati Jain family that moved into Talegaon Dhamdhere in 1947. This family maintained a grocery (kirana) business on the side, but regarded cultivation as the primary occupation. In mosambi cultivation there was one cultivator from the Nhavi (barber) caste who considered cultivation his primary occupation. Five of the orange cultivators had secondary occupations such as running a tea-stall, construction, and similar side businesses.

The orange and mosambi cultivators are largely traditional farmers with medium level of net returns and a low level of education (Table 3.8). Among those interviewed, the immigrants were generally more capitalised and less traditional.

39 Gadgil Report, op.cit., p. 23.

Table 3.3 : Number of Fruit Cultivators from Each Orchard Category by Villages in the Selected Sample Area Under Fruit (1978-79)

Village		Less than 0.5 acres of fruit	0.50 to 2.00 acres of fruit	2.00 to 5.00 acres of fruit	5.00 acres of fruit	
						No. of cultivators
I. Orange (Shirur Taluka)						
and Mosambi						
A. Orange	1. Talegaon Dhamdhare	4	6	0	0	10
	2. Shikrapur	2	8	0	0	10
	3. Ranjangaon Ganapati	1	8	1	0	10
	Sub-total	7	22	1	0	
B. Mosambi (Purandhar Taluka)						
	1. Sakurde/Belsar	3	7	0	0	10
	TOTAL	10	29	1	0	
II. Guava (Purandhar Taluka)						
	1. Dive (Kalewadi, Dhume-wadi, Dive, Jhende-wadi, Pawarwadi)	4	8	0	0	12
	(Haveli Taluka)					
	2. Baner	0	4	1	0	5
	3. Saswad	2	1	1	1	5
	TOTAL	6	13	2	1	
III. Grape (Baramati Taluka)						
	1. Baramati village	3	7	5	5	20
	(Haveli Taluka)					
	2. Uruli Kanchan	4	4	1	1	10
	3. Yeot	0	1	1	0	2
	4. Hadapsar	0	1	1	0	2
	TOTAL	7	13	8	6	

(continued)

Table 3.3 : (continued)

Village	Less than 0.5 acres of fruit	0.50 to 2.00 acres of fruit	2.00 to 5.00 acres of fruit	5.00 acres of fruit	
IV. Fig (Bhor Taluka)					
1. Velu	5	5	0	0	10
2. Dive (Purandhar)	3	4	1	0	8
TOTAL	8	9	1	0	
V. Banana (Junnar Taluka)					
1. Rajuri	1	8	0	1	10
2. Belhe-Ale	0	7	3	0	10
3. Otur	1	7	2	0	10
TOTAL	2	22	5	1	
GRAND TOTAL	33	86	17	8	144

Table 3.4 : Number of Cultivators from Each Orchard Category from Each Village in the Selected Sample (1978-79)

Sr. No.	Acres Under fruit		Talegaon Dhamdhare	Saswad	Dive	Velu	Shikrapur	Ranjangaon Ganapati	Otur	Rajuri	Ale	Belhe	Hadapsar	Yawat	Uruli Kanchan	Baramati	Baner	Sakurde Belsar	Total
1.	0	0.25	1	1	3	3	-	-	-	-	-	-	-	-	-	-	-	1	9
2.	0.25	0.50	3	1	4	2	2	1	1	1	-	-	-	-	4	4	-	1	24
3.	0.50	1.00	4	-	11	3	5	6	6	7	3	1	1	1	6	3	1	7	65
4.	1.00	2.00	2	1	1	2	3	2	3	1	1	2	1	-	-	5	3	1	28
5.	2.00	5.00	-	1	1	-	-	1	-	1	1	2	-	1	-	4	1	-	13
6.	5.00	10.00	-	1	-	-	-	-	-	-	-	-	-	-	-	4	-	-	5
7.	10.00	and more	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total			10	5	20	10	10	10	10	10	5	5	2	2	10	20	5	10	144

Table 3.5 : Caste Distribution Among Fruit Cultivators in the Selected Sample (1978-79)

Fruit	Maratha	Mali	Brahmin	Commer- cial *	Other @
Orange	16 (57.14)	10 (35.71)	0	1 (3.57)	1 (3.57)
Mosambi	0	9 (90.00)	0	0	1 (10.00)
Guava	19 (70.37)	7 (25.93)	0	0	1 (3.70)
Fig	14 (93.33)	1 (6.67)	0	0	0
Banana	28 (93.33)	0	1 (3.33)	1 (3.33)	0
Grape	13 (38.24)	10 (29.41)	4 (11.76)	4 (11.76)	3 (8.82)
	90 (62.50)	37 (25.69)	5 (3.47)	6 (4.17)	6 (4.17)

* Marwaris and Gujaratis.

@ Kaikadi, Nhavi, Shimpi, Vanjari and Chambhars.

Figures in brackets indicate percentages.

Table 3.6 : Villagewise Distribution of Fruit Cultivators by Caste in the Selected Sample

Name of fruit	Village and taluka	Castes of the cultivators									Total	
		Brahmin	Maratha & other cultivating castes	Mali (agri-culture)	Marwari/Gujarati Jain (business)	Phool mali (horti-culture)	Kaikadi (basket weavers)	Nhavi (barbers)	Shimpi (tailors)	Chambhar (harijan)		Vanjari (Nomad)
<u>Orange</u>	Talegaon Dhamdhare	-	5	2	1	-	-	-	-	-	-	8
	Shikrapur	-	4	6	-	-	-	-	-	-	-	10
	Ranjangaon Ganapati	-	7	2	-	-	-	1	-	-	-	10
	Sub-total	-	16 (59.26)	10 (37.04)	-	-	-	1 (3.7)	-	-	-	28
<u>Mosambi</u>	Sakurde Belsar	-	-	9	-	-	-	-	-	1	-	10
	Sub-total of Orange & Mosambi	-	16 (43.24)	19 (51.35)	-	-	-	1 (2.7)	-	1 (2.7)	-	38
<u>Guava</u>	Baner	-	-	5	-	-	-	-	-	-	-	5
	Saswad	-	3	1	-	-	1	-	-	-	-	5
	Talegaon Dhamdhare	-	2	-	-	-	-	-	-	-	-	2
	Dive	-	8	1	-	-	-	-	-	-	-	9
<u>Fig</u>	Velu	-	9	-	-	-	-	-	-	-	-	9
<u>Guava</u>	Dive	-	3	1	-	-	-	-	-	-	-	4
<u>Fig</u>	Dive	-	7	-	-	-	-	-	-	-	-	7
	Velu	-	1	-	-	-	-	-	-	-	-	1
	Sub-total of Guava and Fig	-	33 (8.57)	8 (19.05)	-	-	1 (2.33)	-	-	-	-	42
<u>Grape</u>	Uruli Kanchan	-	8	1	-	-	-	-	1	-	-	10
	Hadapsar	-	2	-	-	-	-	-	-	-	-	2
	Yeot	-	-	1	-	-	-	1	-	-	-	2
	Baramati*	4	3	6	4	2	-	-	-	-	1	20
	Sub-total	4 (11.76)	13 (38.26)	8 (23.53)	4 (11.76)	2 (5.88)	-	1 (2.94)	1 (2.94)	-	1 (2.94)	34
<u>Banana</u>	Otur	-	10	-	-	-	-	-	-	-	-	10
	Rajuri	-	10	-	-	-	-	-	-	-	-	10
	Ale	1	4	-	-	-	-	-	-	-	-	5
	Belhe	-	5	-	-	-	-	-	-	-	-	5
	Sub-total	1	29	-	-	-	-	-	-	-	-	30
	Total for all villages	4 (2.78)	91 (63.89)	35 (24.30)	5 (3.47)	2 (1.39)	1 (0.69)	2 (1.39)	1 (0.69)	1 (0.69)	1 (0.69)	144 (100.00)

* Includes Malegaon, Jalochi, Gunewadi and Baramati.

Figures in brackets indicate percentages.

Table 3.7 : Statistics Regarding Experience, Immigration and Secondary Occupation of the Selected Fruit Cultivators in the Selected Sample (1978-79)

Fruit	Migrant	Secondary Occupation	Experience	Total No. of Cultivators
Orange	2 (7.14)	5 (17.86)	26 (92.86)	28 (100.00)
Mosambi	0	0	9 (90.00)	10 (100.00)
Guava	2 (7.41)	2 (7.41)	26 (96.30)	27 (100.00)
Fig	0	5 (33.33)	15 (100.00)	15 (100.00)
Banana	1 (3.33)	7 (23.33)	27 (90.00)	30 (100.00)
Grape	13 (38.24)	14 (41.18)	22 (64.71)	34 (100.00)

Figures in brackets indicate percentages.

Table 3.8 : Education and Literacy Among the Poona Fruit Growers in the Selected Sample (1978-79)

Fruit	Less than fifth grade	Fifth grade - Less than 8th grade	Eighth grade - Less than High school	High school - Less than Bachelors	Bachelors and beyond	Columns 3+4+5+6 At least Fifth grade	Total
1	2	3	4	5	6	7	8
Orange	13 (46.43)	7 (25.00)	7 (25.00)	1 (3.57)	0	15 (53.57)	28 (100.00)
Mosambi	3 (30.00)	3 (30.00)	2 (20.00)	1 (10.00)	0	7 (70.00)	10 (100.00)
Guava	12 (44.44)	8 (29.63)	6 (22.22)	1 (3.70)	0	15 (55.56)	27 (100.00)
Fig	10 (66.67)	3 (20.00)	2 (13.33)	0	0	5 (33.33)	15 (100.00)
Banana	5 (16.67)	7 (23.33)	10 (33.33)	5 (16.67)	3 (10.00)	25 (83.33)	30 (100.00)
Grape	6 (17.65)	4 (11.76)	9 (26.47)	10 (29.41)	5 (14.71)	28 (82.35)	34 (100.00)
Total	49 (34.03)	32 (22.22)	36 (25.00)	18 (12.50)	8 (5.56)	95 (65.97)	144 (100.00)

Figures in brackets indicate percentages.

3.2.311 OUTPUT FOR ORANGE AND MOSAMBI

Fruit output of desirable quality and quantity may be obtained through the provision of proper care and conditions.

According to Shoemaker:

Citrus trees may live 50 years or more. ... Nitrogen has a dominant role in maintaining good vigor and high yield of many groves ... fertilizer recommendations average 0.4 pound nitrogen per year per box. For example, an 8-box tree requires 3.2 pounds of nitrogen per year. ... 40/

Then again,

Citrus trees need a regular supply of water for their many leaves and fruits. One orange may contain 1/2 cup of juice, so a tree with 1000 mature fruits carries some 30 gallons of liquid in the crop. Moreover, 20-40 leaves, each transpiring much water, are required to manufacture food for ripening of a single orange. 41/

Further with respect to drier regions similar to the Shirur taluka, Shoemaker adds:

Rainfall in the citrus areas of California and Arizona is much higher than in the Florida belt. ... Irrigation is an obligate operation and might be required throughout the year. 42/

Similarly, Naik also stresses the importance of irrigation in citrus cultivation when he writes:

40 James S. Shoemaker and Benjamin J.E. Tesley, Tree Fruit Production, John Wiley and Sons, Inc., New York, U.S.A., 1969, p. 392.

41 Ibid., p. 394.

42 Ibid., p. 395.

Except under rain-fed citrus producing areas ... citrus trees require artificial irrigation at frequent intervals. Irrigation is the largest item of expenditure in many parts, amounting to one-third to one-fourth of the total maintenance cost of the orchard in any one year during the bearing age. ^{43/}

For oranges this survey found the average number of trees per acre to lie in the vicinity of 260 to an acre (Tables 3.9 & 3.10). The density of mosambi cultivation was at about 270 to an acre. The corresponding figures from the Gadgil survey⁴⁴ ranges between 250 and 500 for oranges. For both mosambis and oranges the average was around 400 trees to an acre. Between the Gadgil survey and 1978-79 new research in horticulture has suggested the merits of greater distancing between orange trees but the results of such research has not had much impact on the growing pattern in the Poona district.

The yield per tree for orange in the Gadgil report⁴⁵ was stated to be, on an average, between 150-200 fruits per tree, although the full range in stated production per tree for both oranges and mosambis is much wider. The average yield could be approximately calculated at a range between 25 kgs. to 33 kgs. to a tree (Table 3.11).

⁴³ K. C. Naik, "South Indian Fruits and Their Culture", 1949, pp. 232-233.

⁴⁴ Gadgil Report, op.cit., p. 25.

⁴⁵ Ibid., p. 25.

Table 3.9 : Average Output Per Tree for Modal Age Groups of the Orchards, 1978

Fruit (modal age group only)	Output per acre (kgs.)	Average No. of trees per acre for the fruit	Average output per tree (kgs.)
I. Orange			
1) 5-9 years	8,288	263.54	31.45 (18)
ii) 10-15 years	11,195		42.48 (10)
Weighted average 35.39			
II. Mosambi (5-9 years)	8,683	271.10	30.03
III. Guava (4-15 years)	6,456	168.14	38.40
IV. Fig (4-15 years)	1,601	209.87	7.63@
V. Banana	18,471	1612.00*	15.60*
VI. Grape (4-8 years)	5,830	585.32	9.96

* Out of the 1,612 plants, on an average only 1,184 (73.45 per cent) produce fruit at the end of the season. Thus, the output per plant is based upon the average weights of the nangars (bunches).

@ Fig orchards in general, both in Dive and in Velu, but especially in the latter village, were doing poorly. They had first suffered under the effects of the drought of 1972-73, and before they had had the time to recover, the orchards had been hit by disease. At the time of the survey many fig cultivators were thinking of replacing their fig orchards with other crops, especially vegetables. By 1978-79 there was an overall slight decline in the acreage under fig cultivation in the district, from 445 acres (in 1974-75) to 337 acres, and both these acreage figures are lower than the 597 acres in 1930-31 (Gadgil Report).

Table 3.10 : Average Number of Trees and Output Per Tree for Orchards of All Ages, 1977-78

Fruit	Village	Average No. of trees per acre	Average output per acre (kg.)	Average output per tree/plant (kg.)
I. <u>ORANGE</u>	Talegaon Dhamdhere	296.625	9395.37	31.67
	Shikrapur	241.7	10218.4	42.28
	Ranjangaon Ganapati	258.9	9193.9	35.5
	Weighted Average	263.54	9617.36	36.83
II. <u>MOSAMBI</u>	Sakurde Belsar	271.1	8994.6	33.18
III. <u>GUAVA</u>	Talegaon Dhamdhere	116.5	4379	37.59
	Saswad	174.8	5252	30.05
	Dive	166.86	6394.53	38.32
	Baner	186	4465.8	24.01
	Weighted Average	168.44	5676.48	33.76
IV. <u>FIG</u>	Dive	211	1473.6	6.98
	Velu	209.3	1664.9	7.95
	Weighted Average	209.87	1601.13	7.63
V. <u>BANANA</u>	Otur	1529	21791.2	17.9*
	Rajuri	1676.9	19250.4	16.2*
	Belhe	1645	14611	12.8*
	Ale	1615.2	14132.2	12.6*
	Weighted Average	1612	18471.07	15.6*
VI. <u>GRAPE</u>	Hadapsar	525	5690	10.84
	Uruli Kanchan	619.1	4782.8	7.73
	Yawat	550	6750	12.27
	Baramati	578	5640	9.76
	Weighted Average	585.32	5456.12	9.32

* Not all the banana plants bear fruit. Therefore the output per plant figures are calculated on the basis of the plants that did bear fruit. On an average, a banana tree of the Junnar area bears fruit to 10 kg. to 20 kg.

Table 3.11 : Output per Tree in the Gadgil Survey (kgs.)
1930-32

Fruit	Kilograms of fruit per tree
1. Orange	25 kgs to 33.33 kgs. (full range 8.33 kgs to 83.33 kgs)
2. Mosambi	25 kgs to 50 kgs.
3. Guava	4.17 kgs to 50 kgs.
4. Fig	4.55 kgs to 13.63 kgs (Purandhar)
5. Banana	8.33 kgs to 12.5 kgs. (Junnar) 16.67 kgs (Purandhar)

In Tables 3.9 and 3.10 are listed the comparable output per tree figures found in the current study. For oranges (for a tree in the 5 to 9 year age-group of orchard) the yield per tree is about 31.45 kg., and for the 10-15 year age-group it is 42.48 kgs. The weighted average for both the groups is 35.39 kgs. per tree. For mosambi's of the 5-9 year age of orchard the yield per tree is about 30 kgs. per tree. One finds, therefore, no increase in the yield per tree. The oranges and mosambis growing in the eastern tract of the Poona district have been experiencing water shortage (Tables 3.12 and 3.13) may be consulted for the relevant irrigation statistics).

At the above per tree yields the per acre output for oranges of the modal age of orchard (5-9 years) is 8,288 kgs. per acre (Tables 3.14 and 3.15). This output is within the range of potential yield per acre supplied by the Horticulture Department of the Poona Agricultural College and reproduced in Table 3.16. The per tree yield for the same aged orchard, is however, below potential. In the case of mosambis the per acre output for the modal group (age of orchard 5-9 years) is 8,683 kgs. per acre (Table 3.14). This can be said to lie on the lower end of the range for range of yield for mosambi for the district obtained from the Agriculture College (Table 3.16). It may be concluded, therefore, that the yield per acre as well as per tree for both orange and mosambi even in the years of normal rainfall (1977-79) lie below the

Table 3.12: Percentage of Irrigated Land Being Used for Fruit Cultivation in the Selected Sample (1978-79)

Fruit/ Village	Total irrigat- ed area	Irrigat- ed area under fruit	Percentage of irrigated area under fruit	(Acres)	
				Irrigated area under parti- cular fruit	Percentage of irrigated area under parti- cular fruit
(1)	(2)	(3)	(4)	(5)	(6)
I. ORANGE					
1. Talegaon Dhamdhere	4.645	0.822	37.13	0.697	29.54
2. Shikrapur	4.775	0.975	24.68	0.925	23.43
3. Ranjangaon Ganapati	3.40	1.425	59.83	1.425	59.83
II. MOSAMBI					
1. Sakurde	2.994	0.823	35.18	0.823	35.18
III. GUAVA					
1. Talegaon Dhamdhere	3.85	0.625	16.76	0.625	16.76
2. Saswad	6.495	2.98	56.152	1.18	43.80
3. Dive	2.086	0.778	48.92	0.535	33.27
4. Baner	3.47	2.035	57.32	1.635	43.38

Contd...

Table 3.2: (Continued)

(1)	(2)	(3)	(4)	(5)	(6)
<u>IV. FIG</u>					
1. Dive	3.225	0.755	36.47	0.655	31.47
2. Velu	2.26	0.89	64.75	0.79	61.50
<u>V. BANANA</u>					
1. Otur	4.68	1.20	41.37	1.20	41.37
2. Rajuri	6.590	1.536	28.30	1.136	26.30
3. Belhe	5.62	2.41	27.55	2.41	27.55
4. Ale	5.94	1.624	22.52	1.624	22.52
<u>VI. GRAPE</u>					
1. Hadapsar	20.04	1.50	8.30	1.50	8.30
2. Uruli Kanchan	5.03	1.06	26.30	0.705	23.05
3. Yeot	6.00	1.375	22.50	1.00	17.15
4. Baramati	10.96	2.88	29.16	2.63	26.95

Table 3.13: Average Per Cultivator Allocation of Irrigated Land (Seasonal and Perennial) for Fruit Cultivation

Fruit	Percentage allocation of irrigated land	
	Average percentage for all fruit	Average percentage for the particular fruit
1. Orange and Mosambi	39.21	37.00
2. Guava	44.79	34.30
3. Fig	50.61	46.49
4. Banana	29.94	29.44
5. Grape	21.57	18.86
Average for all fruit	37.22	33.22

Table 3.14 : Average Output Per Acre (in Kgs.) for Each Fruit (By the Ages of the Orchards)*

Age of orchard (years)	No. of cultivators	Kgs./Acre (Output)
I. <u>ORANGE</u>		
5 - 9	18	8,288
10 - 15	10	11,915
16 - 20	0	-
II. <u>MOSAMBI</u>		
5 - 9	7	8,683
10 - 15	3	10,389
16 - 20	0	-
III. <u>GUAVA</u>		
2 - 3	5	3,790
4 - 15	19	6,466
16 - 25	3	4,181
IV. <u>FIG</u>		
2 - 3	0	-
4 - 15	15	1,601
16 - 20	0	-
V. <u>BANANA</u>		
(One output only) Jalgaon Variety	30	18,471
VI. <u>GRAPES</u>		
(Thompson Seedless)		
2 - 3	5	3,566
4 - 8	24	5,830
9 - 10	3	4,850
More than 10	2	3,350

* These output figures reflect production per acre in viz. 1977-78 a normal year. In the years when rainfall is inadequate, or when there are untimely and heavy rainfalls the output per acre drops sharply to as little as a third or fourth of these figures.

Table 3.15 : Size of Landholdings and Production and Costs Per Acre (By Modal Age Group of Orchards)

Fruit (By modal age group)	Freq- uency	Size of land- holding	Per acre average output (kgs.)	Per acre average annual cost of produc- tion	Per acre input cost/per unit output (I/O)	Per acre output/ input cost (O/I)
I. <u>ORANGE</u> (5-9 years)	8	Small	8802	5543	0.40	2.48
	5	Medium	8074	3508	0.43	2.32
	5	Large	7677	3261	0.42	2.35
	18	Weighted average	8288	3455	0.42	2.40
II. <u>MOSAMBI</u> (5-9 years)	2	Small	9890	3886	0.39	2.54
	2	Medium	9750	3750	0.37	2.60
	3	Large	7167	3610	0.50	2.00
	7	Weighted average	8683	3729	0.43	2.33
III. <u>GUAVA</u> (4-15 years)	6	Small	7228	1975	0.27	3.66
	10	Medium	6165	2010	0.33	3.07
	3	Large	5882	2095	0.37	2.67
	19	Weighted average	6456	2012	0.31	3.21
IV. <u>FIG</u> (4-15 years)	4	Small	1520	2086	1.37	0.73
	7	Medium	1581	2082	1.31	0.76
	4	Large	1716	2173	1.26	0.79
	15	Weighted average	1601	2108	1.31	0.76
V. <u>BANANA</u> (All)	7	Small	17450	4310	0.25	4.05
	10	Medium	20235	5022	0.25	4.03
	13	Large	17663	4787	0.27	3.69
	30	Weighted average	18471	4754	0.26	3.88
VI. <u>GRAPES</u> (4-8 years)	3	Small	5700	14715	2.58	0.39
	9	Medium	6144	14695	2.39	0.42
	12	Large	5655	12627	2.23	0.45
	24	Weighted average	5830	13663	2.34	0.43

Table 3.16 : Potential Output of Individual Fruit Crops in the Poona District, 1982-85*

Fruit	Age of orchard (years)	Output/Acre (kgs.)	Vines/Acre	Output per vine (kgs.)	Distance between trees	No. of fruits per tree
I. ORANGE	5 - 10	6,670-10,000	200	33.3-50	15' x 15'	200-300
	10 - 15	25,000-50,000	200	125-250		7,500-1500
	15 - 20	6,670-10,000	200	33.3 - 50		200-300
II. MOSAMBI	5 - 10	1,667- 4,167	100	16.67 - 41.67	20' x 20'	100-250
	10 - 15	8,334-16,668	100	83.34-166.68		500-1000
	15 - 20	4,167- 8,334	100	41.67 - 83.34		250-500
III. GUAVA (Bent) Kalwi	3rd year	2,000- 4,000	100	20 - 40	20' x 20'	-
	4 - 15	4,000- 8,000	100	40 - 80		400-500
	16 - 20	2,000- 4,000	100	20 - 40		-
IV. FIG	3rd year	0- 1,000	200	Less than 5 kgs.		-
	4 - 15	1,000- 2,000	200	5-10 kgs.		-
	16 - 20	0- 1,000	200	Less than 5 kgs.		-
V. BANANA	One fruit season only	12,000-20,000	2,000	6-10 kgs. per plant	4.6' x 4.6'	-
VI. GRAPES (Thompson Seedless)	2 - 4	4,000- 6,000	704	5.68- 8.5	7' x 7'	-
	4 - 8	8,000-12,000	704	11.36-17		-
	8 - 10	6,000- 8,000	704	8.5-11.36		-

* Source : Estimations supplied by Prof. Bhore & Prof. Bhujbal of the Department of Horticulture, College of Agriculture, Pune, Maharashtra.

Table 3.17 : Output Per Acre Calculated for the Gadgil
Study of 1930-32

Fruit	Output per tree x No. of trees in one acre	Output per acre
1. Orange	29.17 x 375	10937 kgs
2. Mosambi	37.5 x 400	150000 kgs
3. Guava	27.08 x 275	7477 kgs
4. Figs	9.09 kgs x 225	2045 kgs
5. Banana	10.5 kgs x 750 trees	7875 kgs (@ 85% 6694 kgs/ acre)

potential for the district. One reason for this would be the overall nature of water scarcity in the "scarcity zone" of the district.

3.2.32 THE CULTIVATION OF GUAVAS IN THE POONA DISTRICT (1978-79)

Acreage under guava in the district was the highest in the Haveli taluka during the year of the survey, and this acreage has been steadily increasing (Table 3.1). Next, in acreage after the Haveli taluka, is the Purandhar taluka where to the guava cultivated area has also been increasing. The Haveli taluka, of course, for long been the principal guava cultivating taluka in the district, but the Purandhar taluka was not a major guava growing area during the Gadgil survey.

The major reason for the increase in acreage is the development of the more productive improved variety viz. "Lucknow 49" at the Ganeshkhind Fruit Experiment Station, Khadki. Under proper conditions trees of this variety have the potential of yielding some 9000 kgs. of fruits per acre. While the Gadgil study found most grower cultivators growing the gauthi or local variety, this study found that the cultivators interviewed had switched to the cultivation of Lucknow 49 varieties.

The method of irrigation used for guava cultivation is well irrigation. The system of well irrigation in these areas was bullock powered. Guava requires moderate water and

good drainage. Water shortage was reported as a common problem.

The average size of operational holding for guava cultivators was 10.61 acres of which on an average 29.31 per cent was irrigated and 12.63 per cent of the irrigated land was under fruit cultivation (Table 3.2). The average sized guava orchard was 1.34 acres, though the orchards of Saswad and Talegaon Dhamdhere were smaller. Among the interviewed cultivators in the guava growing areas as much as 43.09 per cent of the irrigated land was used for fruit cultivation.

The cultivators of guava are largely traditional cultivators of the Maratha and Mali caste (Tables 3.6, 3.6 + 3.7) with generations of experience in orchard growing (Table Even those who have migrated from other areas are from traditional orchard cultivating backgrounds. They have confined themselves to the steady, low-risk-low-capital type of orchard growing such as guava cultivation. For most, farming is a full-time occupation. A large percentage of these cultivators (44.4 per cent : Table 3.8) have less than fifth grade education.

One interesting case was the cultivator from the kaikadi (basket weaving) caste from Saswad. A first generation guava orchard grower, he was one of the more prosperous and less traditional cultivators. Through frugal living and astute business planning this basket weaker's father set aside

a small capital for his son. The son entered the traditional field of basket weaving and added further to the capital fund. When enough capital had been accumulated he set up a small grocery shop. As the town of Saswad expanded in population the grocery shop expanded in size, making for enough capital for the purchase of a piece of land with good soil. With a loan from the Land Development Bank the cultivator had sunk a fairly deep well and had taken to the cultivation of fruits and vegetables. This was an isolated case of a cultivator coming from a backward community overcoming capital constraint with initiative and sound planning.

3.2.321 OUTPUT FOR GUAVA ORCHARDS

For guava cultivation Naik contributes the information that guava trees require an arid and hot climate, a mixture of alluvial and sandy soil and proper drainage. Usually, it will grow satisfactorily, and produce satisfactory fruit in any well drained soil of open texture. Even infertile rocky slopes have been satisfactory, provided that good organic matter and a sufficient moisture supply are made available.⁴⁶

In the Gadgil report the common distance between trees in guava orchards was stated as 12' x 12'. This distancing would allow about 300 trees to an acre.⁴⁷ The Poona guava at

⁴⁶ K. C. Naik, South Indian Fruits and their Culture, 1949, pp. 446-447.

⁴⁷ Gadgil Report, op.cit., p. 25.

that time was an inferior grafted variety. The current survey found all the interviewed cultivators growing the improved Lucknow 49 variety. The farmers in the sample planted around 170 trees to an acre, a number larger than the recommended number of 100 trees to an acre (Tables 3.9 + 3.16). The per tree yield of the local guava variety of the Gadgil Report varied between 4 kgs. to 50 kgs. - a very wide variation (Table 3.11). The per tree yield for the current study is at about 38.4 kgs. (Table 3.9). The wide range makes reliable comparison between the yields difficult. The potential for the Lucknow 49 guava has been given to be between 40 and 80 kgs. per tree for an orchard between 4-15 years old. By these standards the yield per tree of the sample is below the potential for the district under existing conditions.

The per acre yield for the improved variety guava is about 6,470 kgs. while the median for the potential range is at about 6,000 kgs. per acre. Thus by increasing the density of cultivation above the desired ideal, even though the farmers of Poona receive a lower yield per tree, the per acre yield is above the average potential.

3.2.33 THE CULTIVATION OF FIGS IN THE POONA DISTRICT (1978-79)

T. W. Sanders discusses the specific needs of the fig tree thus:

"The Fig is somewhat particular in regard to soil. It will not fruit freely in heavy or rich soil ... the Fig succeeds best on a chalky or calcareous soil. Moreover, it must have its root area restricted. Where there is about 18 in. of loam overlying chalk Figs will do well. ^{48/}

The largest acreage of fig was in the Bhor taluka and after that the Purandhar taluka. In fact these two areas produce almost all of the fig output of the district (Table 3.1). The fig crop does best in areas with light rains and loamy soils with free drainage. The dry climate of Purandhar and Bhor suit fig cultivation well. However, frequent scarcity of water in these dry zones of the district along with a combination of disease has discouraged many traditional fig growers and reduced the acreage under figs. The figs cultivated in the Poona district are still largely the table variety.

Severe water shortage was reported in the fig growing areas. The method of irrigation adopted by the farmers in the sample was entirely through the moht system which ran low or dry in the hot summer months even in the years of normal rainfall (such as the period of survey 1978-79). Fig orchards were not producing good crops and several traditional fig cultivators were considering experimenting with the sturdier though normally less paying guava orchards.

⁴⁸ T. W. Sanders, Fruit and Its Cultivation, 4th Edition, W.H. & L. Collingridge, London, 1926, p. 84.

Of the total cultivated area 32.45 per cent was irrigated. Of the total irrigated area fruit orchards received 34.50 per cent of the land (Table 3.2).

The cultivation of figs is a traditional pattern of orchard cultivation that has been handed down for generations. Tables 3.5 and 3.6 illustrate that all the fig cultivators in the sample were either Marathas or Malis, experienced and non-immigrants (Table 3.7). Non-traditional castes do not get attracted into fig cultivation where the per acre output has dropped due to water shortage and disease and the total fruit output gets smaller as orchards decline in size. These are traditional farmers whose income is quite low and who have low levels of education (Table 3.8).

A third of the cultivators in the sample accepted a secondary occupation to make both ends meet. Among these was one case which was especially unfortunate. Included in the sample is a cultivator from Velu who lost all but 0.25 acres of his land of over five acres for a five hundred rupees loan he borrowed from a moneylender some twelve years before the interview. This cultivator at the time of the interview continued the fig orchard that already grew on the quarter acre of land he still owned. Although he claimed to be primarily a cultivator, in fact however, his secondary occupation was -cultivation and his primary means of livelihood came from working as casual labour in other cultivators' farms.

3.2.331 OUTPUT OF FIG ORCHARDS

Poona figs: This is the most prolific variety on the plains and produces medium-sized, light purple fruits with uneven shoulders. The fruits are thin skinned, sweet and well flavoured, possessing a rosy flesh. 49/

According to Naik the yields from unpruned trees are higher. Furthermore, fig needs dry atmospheric conditions, especially for fruit development, provided that there is an ample supply of water. ⁵⁰

Of the many reasons for fruit yields of various taste, texture, fragrance and volume, the essential and uncontrollable factor of climatic conditions plays a crucial role in determining fruit production. Not only the fruit production, but also seasonality of fruit output may be affected by weather conditions. Quoting from Naik again:

The proportion of yields in the tree seasons vary greatly, from year to year, depending particularly on the weather conditions at the time of or just preceding the blooming season for each crop. There is also considerable variation from orchard to orchard, possibly due to grove practices, while huge differences between individual trees, possibly due to inherent character, are not also uncommon. 51/

49 K. C. Naik, South Indian Fruits and Their Culture, 1949, p. 385.

50 Ibid., p. 388.

51 Ibid., pp. 253-254.

At distances between plants of 13' to 15' the Gadgil report⁵² estimated between 200 and 250 trees to an acre. The current sample yields an average of 209 trees to an acre⁵³ (Table 3.9) while the figures from the Horticulture Department of the Poona Agriculture College is at 200 trees to an acre for the Poona district (Table 3.16). The output of trees was estimated by the Gadgil report⁵⁴ at between 18 to 22.7 kgs. per tree. The per tree yield during the current survey was significantly lower, at 7.63 kgs. per tree. The Horticultural Department supplied this research with the current potential output for an fig orchard in its prime age in the Poona district at between 5-10 kgs. per tree under existing conditions. This indicates that there has been a substantial decline in the yields of fig trees in the district since the Gadgil survey. The per acre yield for the current survey was 1,601 kgs. (Table 3.9) whereas the range for output potential is 1000 to 2000 kgs. to an acre (Table 3.16), under the present conditions. Recurrent water shortage and disease appear to have significantly damaged the fig production of the Poona district.

52 Gadgil Report, p. 24.

53 T. W. Sanders, op.cit., p.84. Sanders also mentions a distancing of 15' x 15' as essential for good fruit development.

54 Gadgil Report, p. 25.

3.2.34 THE CULTIVATION OF BANANAS IN THE POONA DISTRICT (1978-79)

The Junnar taluka had the largest concentration of bananas and the acreage under this crop was increasing in that taluka (Table 3.1). Next in acreage, but trailing well after Junnar is the Haveli taluka. In the Junna taluka banana cultivation is found mostly in the central or the transitional tract which has brown soils and moderate rainfall. The cultivation of banana requires larger doses of assured water than figs, guavas or the oranges. The western and central tracts of Junnar are therefore more suited to banana cultivation than the drier eastern tract. In the Gadgil survey⁵⁵ one finds mention of two varieties Kali and Soni grown in this taluka. In the current survey it was found that most cultivators in the region had shifted to the cultivation of the Jalgaon (basrai) variety only. The variety of banana currently grown at Junnar is the higher yielding Jalgaon or the basrai variety. The basrai variety was introduced in the region around the late forties but wider plantation of this variety was around the sixties.⁵⁶ This variety produced good yields in the absence of any serious water shortage in Junnar in 1977-79.

55 Gadgil Report, op.cit., p. 24.

56 The Gadgil Study mentions only the 'Kali' and 'Soni' varieties. The 1954 Bombay State Gazetteer makes a mention of the basrai variety being grown in the Poona District (p.216).

The banana cultivators interviewed did not express any immediate problems of water shortage. Irrigation was through wells and wells were operated by pumps as well as by bullocks. The cultivators did however indicate that in the year of the drought (1972-73) their crops had been badly damaged. However, since banana plants are replaced every two years the damage was not a lasting one.

The average size of operation holding in the banana growing areas of Junnar taluka was 11.85 acres (Table 3.2) of this 55.44 per cent was irrigated and 12.49 per cent was under fruit. The percentage of irrigated land under fruit was 22.53 per cent in the selected sample.

The banana cultivators are largely Marathas (Tables 3.5 & 3.6) with several generations of experience in orchard growing (Table 3.7). Only one cultivator was an immigrant (Table 3.7). More than a fifth of them had secondary occupations (Table 3.7). They are more prosperous than the orange, guava and fig cultivators and have been able to acquire higher levels of education (Table 3.8). The secondary occupations were an assistance to support the higher level of capital required in this business.

3.2.341 OUTPUT OF BANANA ORCHARDS

The varieties of banana grown in the Poona district at the time of the Gadgil survey were the Kali and Soni. Currently the banana growers have shifted to the Jalgaon variety called the basrai. The yield figures for the two periods are, therefore, not comparable.

The Jalgaon variety was planted in the Junnar taluka by the selected farmers was at a density of about 1612 plants to an acre. The average yield per tree for these was 15.6 kgs. and the per acre output was found to be about 18,470 kgs. The corresponding figures for potential planting practice and output in the district acquired from the Department of Horticulture of the Poona Agriculture College are 2000 plants per acre, 6-10 kgs. per plant and between 12,000 kgs. to 20,000 kgs. per acre. The output of the Junnar cultivators in the sample appears to be on target.

3.2.35 THE CULTIVATION OF GRAPES IN THE POONA DISTRICT (1978-79)

Concentrations of grape cultivation in the Poona district were in the Baramati, Indapur and Haveli talukas (Table 3.1). Cultivators were increasingly shifting to the Thompson Seedless variety, replacing the varieties of Anab-e-shahi and Selection 7 grown in the district earlier. The cultivation of Thompson Seedless variety of grapes requires regular and assured irrigation and the quantity of yield is directly dependent upon the water and fertilizer usage. Although Baramati and Indapur talukas lie in the dry tract of the district, the southern parts of these talukas have access to irrigation from the Nira canal system and are thus able to cultivate grape vineyards.

The irrigation pattern of grape vineyards varies with location. While some grape cultivators continue to use

well irrigation, many of the grape orchards are situated close to canals (such as having access to the waters of the Mula-Mutha or the Nira canals. The wells often supplement the water from canals. Irrigation with diesel or electric power is used to draw water from the wells. Grape cultivation requires ample water supply and the farmers totally dependent upon well irrigation (in Uruli Kanchan and Baramati) indicated that grape production had suffered during the 1972-73 famine. Furthermore, some grape vineyards were damaged by thunder storms in 1977-78.

The average cultivated acreage of a grape cultivator (Table 3.2) was 13.93 acres for the selected sample of which 74.23 per cent of the area was irrigated. From the irrigated land of individual grape growers in the sample, fruit crops received 20.79 per cent of the area on the average. The allocation of irrigated land to fruit cultivation, however, was much higher in the Baramati area at 41.34 per cent for the selected sample (Table 3.2). The contending crop for irrigated land in these tracts was sugarcane.

The grape cultivators differ from the cultivators of other fruit in several ways. The lucrative nature of this orchard cultivation and the need for heavy capital investment for vineyards has attracted a substantial number of new entrants into the business. Among the cultivators interviewed a third of them had entered the business from

non-cultivating castes and backgrounds (Tables 3.5 + 3.6). Thirty eight per cent in the sample were well capitalised migrants investing in a lucrative business and 64 per cent were traditional agriculturists with experience (Table 3.7). Among the new entrants (Tables 3.5 + 3.6) are Brahmins, Marwaris (commercial classes), one Nhavi (barber), one Shimpi (tailor) and a Vanjari (nomad). The level of education among grape growers is much higher than the other fruit growers (other than the banana growers). About 71 per cent of those interviewed had more than eighth grade education and some 82 per cent had completed the fifth grade. The promise of high annual net returns in grape cultivation attracts capitalized investors, most likely with at least some basic education, who have established occupations outside agriculture. This would explain why non-traditional cultivators, such as the Brahmins and Marwaris have become interested in grape growing in recent years. Included in the sample was a prosperous doctor from Pune who initially channelled some of his urban earnings into rural income, and later became so interested in grape cultivation as to devote a substantial amount of his time into it. The cases of the Shimpi and the Nhavi are similar to that of the Kaikade narrated in the case of guava cultivation. These orchard growers used the earnings from secondary occupations, earnings of other family members who worked in the city, and loans from banks, to help them enter grape

cultivation. The Vanjari in the sample had a full time job in the city when he invested in the grapevine yard. Among the Marathas in the sample are also the family of Anna Saheb and Abba Saheb Magar, active members in the Draksha Bagaitdar Sangh (Grape-growers' Association) and the PAPMC.

3.2.351 OUTPUT OF GRAPE VINEYARDS

During the Gadgil survey grape cultivation had become quite minor in the district and it did not receive any special mention in the 1933 Report. Grapes did find a mention in both the 1885 Poona District Gazetteer and the 1954 Bombay State Gazetteer. There are, however, no previous yield figures that would go at least 20-30 years into the past to compare the current yield against. The yield figures from Punde's study (1971-72) are 113.95 quintals per hectare (or 4595 kgs. per acre) for Thompson Seedless. The per acre yield for the same variety during the current survey, expectedly, had increased to 5830 kgs. per acre for the modal group of orchard. In the 1980's new improved varieties such as Sonaka, Tase Ganesh and Manik have been developed. The output potential of the Tase Ganesh Variety, according to the Maharashtra Rajya Draksha Bagayatdar Sangh (Maharashtra State Fruit Growers' Association) is 8000-10000 kgs./acre in the 1980's. The Bagayatdar Sangh estimated the density of Thompson Seedless at 800-1000 plants an acre. The current study found a density of around 600 plants per acre (Tables

3.9) and the corresponding density figure from the Horticulture Department of the Poona Agriculture College is 700 plants per acre (Table 3.16). The range of yield the Poona Agriculture College offers is between 8000 kgs. and 12000 kgs. for the modal orchard age of 4-8 years.

3.3.1 FINDINGS AND COST METHODOLOGIES OF COMPARATIVE STUDIES

Studies have been conducted by researchers on the cost of cultivation of grapes and bananas.⁵⁷

The costs of establishment of orchards calculated by these studies, at 1978 prices are as tabulated in Table 3.17.

Table 3.18 : Findings of Other Studies

Resear- cher	Fruit	Year of study	Establishment cost at 1978 prices (Rs.)	Present study (1978-79) (Rs.)
Punde	Grape(IS)	1971-72	22,230	30,338
Narkhade	Banana (Khandesh)	1965-66	3,795- 5,132	5,045
Borey	Banana (Jalgaon)	1966-67	5,463	
Patil		1972	7,066	

⁵⁷ H. D. Punde, An Economic Investigation into the Costs and Returns from Grape Cultivation in Baramati and Haveli Talukas of Poona District, 1973.

(contd.)

There have not been any comparable studies on the costs of cultivation of orange, mosambi, fig or guava in this region in recent years.

The method of cost calculation adopted by the studies produced for Master's degrees in Agriculture (Borey, Punde and Patil) are all the same. All these studies adopt the Cost A, Cost B and Cost C methods generally adopted by the Rahuri Agricultural University and standardised by the Seminar of Agricultural Price Policies organised by the FAO/ESCAPE with the cooperation of the Government of India in 1958. By this method the cost of cultivation is calculated by operation. Cost A is the aggregated paid out cost for hired human labour, bullock labour, seed, manures and fertilizers, irrigation charges, land revenue and other taxes, depreciation of implements and cost of repairs to them which represent the actual out of pocket expenditure on cultivation. Cost B is the sum total of the rental value of owned land and the hypothetical interest that the capital invested in farm business would have earned if invested

(continued)

D. S. Narkhade, History and Economics of Banana cultivation in a Khandesh Village, 1968.

S. M. Patil, A Comparative Study of the Resource Productiveness on Sample of Sugarcane and Banana Farms in Nasik and Jalgaon Districts, 1972.

D. P. Borey, Production and Marketing of Banana in Raver Taluka in Jalgaon District, 1967.

alternatively, that is the imputed costs plus Cost A.

Cost C is Cost B plus the imputed value of family labour of the cultivator.

The Cost A/Cost B/Cost C method is generally considered an accurate method of calculation of cost of production. In the form of Cost method C in which all opportunity costs are taken into consideration, true economic costs of cultivation are reflected.

3.3.2 METHOD ADOPTED FOR CALCULATING THE COST OF CULTIVATION IN THIS STUDY

The Cost A/Cost B/Cost C method has been used to calculate the costs of cultivation. Cost A is useful for accounting purposes and reflects the cultivators' accounting costs. Cost B is a step closer to economic costs in its inclusion of rental value of land and the opportunity cost of capital. Cost C completes the process by including the opportunity cost of family labour as well. Since the primary interest for this research is in the economic cost of cultivation rather than in accounting cost, Cost C is directly calculated.

3.3.21 ECONOMIC COST

The research questionnaire has a separate section for the cost data. This section is composed of two parts. The first part is for recording cost of establishment for the orchard. The second part records the annual recurring

costs of cultivation thereafter. In other sections information about the gestation period and total productive life of the orchard was acquired.

The gestation period is the period between planting and fruiting. For this research the gestation period has been taken to be upto the point when the fruit output is large enough to be marketed. The total life is the entire life period of the orchard from planting to the end of the fruit bearing stage. The productive life is the period during which an orchard is fruit bearing. In this research the productive life excludes that part of the total life during which the orchard is in the process of acquiring output and includes only the period of actual fruit bearing.

The establishment costs are those costs incurred to set up an orchard. They include plants and sapling, the planting process, soil preparation, digging of pits, setting up supports where needed (as in the case of grapes), the initial dosage of fertilizers and care, etc. In most cases it includes the costs incurred in the first few years of setting up the orchard. Most of these costs are undertaken at the very beginning (first year) but some of the intensive care lingers through the entire gestation period. Thus it has been assumed that the establishment costs spread over the gestation period. It is, therefore, the average of the very high initial costs and of the relatively high costs

for the rest of the gestation period, weighted by the duration of each period. The establishment cost can vary greatly even within a group of neighbouring cultivators producing the same fruit. For instance, one grape grower may incur a total cost of setting up supports to the tune of Rs. 10,000 or more per acre. This cost would be made up of the costs of strong metal supports, a heavy dose of chemical fertilizers and other expenditures related to the setting up of the orchard. Another cultivator may cut his initial costs by using bamboo supports instead. Since the bamboo supports may need replacing once or more during the life span of the orchard, the post-establishment costs for these orchards could be higher, affecting the annual recurring cost.

The annual recurring cost is the post-gestation cost incurred annually through the productive life span of the orchard. This period generally requires less intensive care, although some farmers continue to care intensively for their orchard during this period also. The costs incurred during this period include the regular annual watering, fertilizing, weeding, harrowing, etc.

In the cost sections the question related to each stage and process of orchard establishment and cultivation. The processes included were preparatory tillage, ploughing, clod crushing, planting, harrowing, the digging and filling of pits, weeding, fertilizing with manure, organic and

inorganic fertilizers, watering, setting up of supports, dusting and spraying with pesticides and any other additional process that the cultivators added. The labour-hours involved in each process were asked for as accurate as the farmers were able to break up the labour hours between operations. They were permitted to spread a man-day between more than one operation. Farmers were also asked about the nature of labour used, whether male, female, animal, hired casual, hired permanent ^{or} contract. The quantities of materials used and whether or not these were purchased was also noted with as much accuracy as feasible.

3.3.211 LABOUR COST

The cost of labour involved in each operation was computed at current (1978) market prices. Information regarding the hours (or portion of day) that was required to complete each operation was collected and used in the calculation of labour cost. Differences in efficiencies between family, temporary hired and permanent hired labour were ignored and all labour cost was calculated at the rate of casual hired labour. The assumption of this research is that all labour of the same nature is of uniform productivity within its kind, and therefore commands the same market price. Labour price has therefore been calculated at the prevailing market price for hired labour (1978 prices) which was Rs. 5 a day for male, Rs. 3 a day for female and Rs.20 a

day for bullock labour in all the villages in the sample. All payments are made by the 'days worked' and not 'hours worked'. The smallest payment for even one hour's work is for one-fourth a day. A 'day' has no uniform length and may constitute anywhere between 6 and 10 hours of work generally and in busy seasons even as many as 12 hours' work was required for the same wage. Thus, man-days may be a more accurate measure of labour cost than man-hours. The wage per man-day of hired casual labour was used to assess the imputed value of family labour.

3.3.212 MATERIAL COST

The material costs include all material expenditures involved in cultivation. This would include the materials required to set up an orchard as well as all materials used annually thereafter. To establish an orchard the materials required are the saplings, manures and fertilizer, water and bamboo supports. Thereafter water, manure, organic and inorganic fertilizers and pesticides are annually employed for cultivation. Material costs are the aggregate costs at 1978 prices of all materials involved in production. The materials that were domestically produced have been imputed at 1978 market value. For materials such as water which are not purchased by the gallon, the hours (portion of day usually) of usage was recorded and rates were later imputed including the electricity charge where applicable.

3.3.213 RENT, INTEREST AND DEPRECIATION

Rent on land, interest on fixed and working capital and the cost of repairs of fixed capital calculated at a relevant rate of depreciation have also been included in the aggregate costs. Rent on land was calculated at 7 per cent of land value, interest on working capital at 11 per cent and the interest on fixed capital at 7 per cent to ensure comparability with other studies on the subject. The depreciation of implements was calculated on the basis of the expected life-spans of the implements.

3.3.22 CALCULATION OF AVERAGE ANNUAL COST OF CULTIVATION

The ultimate interest of this research in the matter of cost of cultivation is to compute an average annual cost of cultivation. The average annual cost of cultivation has been calculated with the following formula:

$$A = \frac{(e \cdot g) + a(t-g)}{t}$$

Where, 'e' is the initial establishment cost of the orchard (annual)

'a' is the annual recurring cost

'g' is the gestation period

't' is the total life of the orchard

'A' is the average annual cost of cultivation

'*' indicates 'product of'

The gestation periods and the productive (fruit bearing) lives for the orchards of the six fruits we are studying are thus:

Table 3.19 : Gestation Periods and Total Life of Orchards for the Selected Fruit

Fruit	Gestation period	Total life
1. Orange	4 years	25 years
2. Mosambi	4 years	25 years
3. Guava	3 years@	20 years
4. Fig	3 years@	20 years
5. Banana	1½ years*	2 years
6. Grape	1½ years	10 years**

@ Guava and fig both have some marketable output in the third year, though the quantity is generally small.

* It takes usually fourteen months to get a fully developed banana bunch from the time of planting. Gadgil Report, p.24. In the sample for this survey the cultivators gave, as the period after which the banana fruit is fully ready for the market as 13 to 18 months.

** Grape vineyards (Thompson Seedless) have been known to last as long as 20 years. However, most of the farmers in the sample felt that a productive life of 10 years was a reasonable assumption.

Tables 3.15, 3.20 + 3.21 illustrate the factors that determine gross and net returns per acre in fruit cultivation. It has been demonstrated in these tables that the gross and net revenues per acre vary with the output per acre. The output per acre is a function of the ages of the orchards and upon the expenditure on inputs such as water, fertilizer, pesticides etc.

The average annual cost of cultivation is derived from the cost of establishment of the orchard and the annual recurring cost according to the formula explained earlier in this chapter. These costs form columns 3 and 4 of the Table 3.19. The average per acre cost of establishment of an orange orchard Rs. 4,608, of a mosambi orchard is Rs.4,194, of a guava orchard for the survey sample is Rs. 2,426 and of a fig orchard Rs. 2,284. The establishment cost per acre for setting up a banana orchard is, on an average Rs.5,045. A grape vineyard is, however, much more expensive to set up. An average of Rs. 30,338 for the Thompson Seedless variety in grapes is arrived at for all sizes. In some cases the cost of establishment even came close to Rs. 40,000 per acre. The annual recurring cost through the active productive life of the orchard is lower in the case of grape cultivation where many support structures (trellis, etc.) have been set up initially. These figures for annual recurring cost from the same table are per acre are Rs. 3,167 for orange, Rs. 3,613

Table 3.20 : Per Acre Cost of Cultivation for Each Fruit (at 1978 Prices) Average Expenditure Per Acre in Rupees (Modal Group Only)*

Fruit	Size	Frequ- ency	Initial cost of estab- lishment (per annum)	Annual recurr- ing cost	Average annual cost of cultiva- tion
1	2	3	4	5	6
I. ORANGE (5-9 years)	Small	8	4,691	3,256	3,543
	Medium	5	4,654	3,221	3,508
	Large	5	4,429	2,969	3,261
	Weighted average	18	4,608	3,167	3,455
II. MOSAMBI (5-9 years)	Small	2	4,378	3,763	3,886
	Medium	2	4,218	3,633	3,750
	Large	3	4,055	3,499	3,610
	Weighted average	7	4,194	3,613	3,729
III. GUAVA (4-15 years)	Small	6	2,380	1,904	1,975
	Medium	10	2,424	1,938	2,010
	Large	3	2,524	2,018	2,095
	Weighted average	19	2,426	1,940	2,012
IV. FIG (4-15 years)	Small	4	2,261	2,055	2,086
	Medium	7	2,257	2,052	2,083
	Large	4	2,355	2,140	2,173
	Weighted average	15	2,284	2,076	2,108
V. BANANA (All)	Small	7	4,574	3,870	4,310
	Medium	10	5,329	4,510	5,022
	Large	13	5,080	4,298	4,787
	Weighted average	30	5,045	4,269	4,754
VI. GRAPES (4-8)	Small	3	32,514	11,574	14,715
	Medium	9	32,472	11,559	14,696
	Large	12	28,194	9,880	12,627
	Weighted average	24	30,338	10,720	13,663

* That is excluding very young and very old orchards.

for mosambi, Rs. 1,940 for guava, Rs. 2,076 for fig, Rs.4,269 for banana and Rs. 10,720 for grape. In all these cases, the very young and old orchards have been excluded from the calculations. All calculations are at 1978 prices.

3.4.1 YIELD AND INPUT REQUIREMENTS FOR THE FRUITS

Orange and Mosambi

In the cultivation of orange and mosambi the practice was to use a relatively larger proportion of family than hired labour (Table 3.21). Very little of chemical fertilizers were used and the cultivators fertilized their orchards almost entirely with organic fertilizers. Most of the expenditure on water is labour cost and a very small portion is material cost since most of the cultivators interviewed did not use pump-sets at the time of the survey. Expenditure on fertilizer, water, and to some extent labour, increase with yield. The yield is found to vary with the age of the orchards and within the modal groups examined in this table, the yield increases with the age of the orchard.

Guava and Fig

Guava and fig follow a common pattern of low per acre cost of cultivator and net return (Table 3.21). In both crops the chief source of fertilization is organic fertilizers although some minor amount of chemical fertilizers are also used. These orchards are principally cultivated

Table 3.21 : Yield and Basic Inputs in Fruit Cultivation

Yield (kgs.)	Frequ- encies	Average age of orchard (years)	Average size of holding (acre)	Imputed cost of family labour (per acre) (Rs.)	Cost of hired labour (per acre) (Rs.)	Total la- bour cost (per acre) (Rs.)	Material costs				Average annu- al cost of cultivation (Rs.)	Output per acre (Kg.)	Gross return (Rs.)	Net return (Rs.)
							Chem- ical ferti- lizer (Rs.)	Organic manure (Rs.)	Water (Rs.)	Total (Rs.)				
I. ORANGE (Orchard age 5-9 years)														
6,001- 7,000	4	6	24	1,083	510	1,593	11	677	4	692	3,481	6,600	10,164	1,713
7,001- 8,000	3	7	18	1,163	604	1,767	20	690	5	715	3,495	7,366	11,344	2,302
8,001- 9,000	5	8	19	1,209	550	1,759	32	776	5	813	3,502	8,574	13,204	3,246
9,001-10,000	6	8	12	1,528	567	2,095	146	789	6	941	3,534	9,640	14,846	4,053
II. MOSAMBI (Orchard age 5-9 years)														
6,000- 7,999	3	8	11	1,370	589	1,959	0	762	0	762	3,412	7,093	10,498	1,908
8,000- 9,999	2	8	13	1,412	587	1,999	0	974	4	978	3,443	8,750	12,950	3,119
10,000-12,000	2	8	6	1,517	575	2,092	0	1,050	4	1,054	3,503	11,000	16,780	4,747
III. GUAVA (Orchard age 4-15 years)														
2,501- 5,000	6	8	19	760	328	1,088	67	438	-	505	1,771	4,310	2,895	127
5,001- 7,500	8	8	6	837	458	1,295	79	588	-	667	2,100	6,808	5,037	879
7,501- 9,500	5	9	9	646	463	1,109	81	709	-	790	2,161	8,465	5,812	1,689
IV. FIG (Orchard age 4-15 years)														
1,001- 1,350	5	7	5	762	328	1,090	24	509	-	533	2,003	1,229	4,026	803
1,351- 1,700	5	8	9	568	352	920	158	528	-	686	2,098	1,595	5,891	2,344
1,701- 2,000	5	12	10	593	392	985	168	591	-	759	2,175	1,980	5,923	2,405
V. BANANA														
10,001-15,000	10	-	13	411	1,188	1,599	376	807	47	1,230	4,087	13,246	7,473	2,719
15,001-20,000	10	-	8	479	1,132	1,611	411	1,093	55	1,559	4,657	17,625	9,033	4,376
20,001-30,000	10	-	9	733	1,428	2,161	986	1,163	62	2,211	5,518	24,543	12,271	6,753
VI. GRAPES (Orchard age 4-8 years)														
4,001- 5,000	5	5	11	114	3,801	3,915	2,691	1,393	93	4,177	11,405	4,946	21,764	2,994
5,001- 6,000	11	6	10	87	3,875	3,962	3,499	1,676	108	5,175	13,686	5,616	27,561	3,197
6,001- 7,000	8	7	11	53	4,090	5,143	5,640	1,856	124	6,620	15,045	6,725	32,331	5,976

with family labour. The gross and net returns, as with orange and mosambi, increase with the yield of the fruit.

Banana

Banana orchards have much higher water usage than fig and guava, or even the orange (Table 3.21). The usage of both organic and chemical fertilizers is quite high although proportionately a larger quantity of organic fertilizers were used by the banana growers in the selected sample. Yield is found to increase proportionately with input usage. About ten per cent of the labour used is family labour and the rest are hired labour. The net returns per acre are much higher than for fig, guava and somewhat of higher than for orange and mosambi.

Grape

Grape cultivation uses a high percentage fertilizer in its input component (Table 3.21). The proportion of chemical to organic fertilizers is about two to one. The total expenditure on water is a little higher than in the case of banana and substantially higher than for the other fruits. About two to three per cent of the total labour force only is family labour and the rest are hired. The gross revenue is the highest of the six fruit studied here, but the net revenue from the selected sample is about the same as in the case of banana because of the very high establishment costs in grape cultivation.

3.5.1 CONCLUDING REMARKS ON FRUIT CULTIVATION
IN THE POONA DISTRICT

Fruit is a commercial crop which is cultivated under conditions of water scarcity in the Poona district. Therefore the potential production for fruit in this district is limited. The sizes of orchards too are small and scattered. Under these constraints, though the size of land holding may be large the yield per orchard is quite small. Furthermore, besides the problem of water shortage, farmers frequently experience the problem of inadequate capital. Capital limitations have restricted the technological changes from reaching the fruit cultivators in Poona. Consequently the pattern of cultivation remain largely traditional and the production below the potential. In the years of poor rainfall the orchard growers find the volume of their fruit output drop to even smaller quantities. Since the water scarcity is fairly common occurrence in the district, individual growers each have small quantities of output that must be marketed. The nature of marketing suitable to the conditions existing in Poona must address the needs of small suppliers. The structure of marketing for fruits in Poona and the costs of marketing are analysed in the next chapter.

CHAPTER IV

MARKETING OF FRUITS IN THE POONA DISTRICT

"Success Story: The success story of groundnut and castor in Gujarat and Soyabean in Madhya Pradesh only proves the point that the entire crop improvement project efforts remain futile unless strong marketing infrastructure are evolved at the State level." [Devinder Sharma, Agricultural Correspondent, Indian Express, 8th August, 1985.]

4.1.1 THE ROLE OF MARKETING

Though the above statement was made for groundnut, castor and soyabean, it is even more true for fruit marketing. Scientific application of fertilizer and water usage may help increase production and productivity, but it cannot be automatically assumed that the cultivators will receive better net returns simply because they can produce more. High production, without accompanying market infrastructure and strategy may not lead to an increase in the net returns realised by the cultivator.

4.2.1 THE INFRASTRUCTURE FOR EFFICIENT MARKETING

The question that one needs to answer is: what are the ingredients of an efficient marketing mechanism? Some of the ingredients of a smoothly functioning marketing mechanism are:

- 1) Good roads and good and inexpensive transportation

- 2) Low marketing costs
- 3) Proper and adequate storage facilities for surplus supplies
- 4) (i) Quick, efficient and reliable agents to supply market information regarding prices, demand, etc., to agriculturists
(ii) Agency to maintain and supply up-to-date accurate records of daily sales, prices and all market related activities, including those at the location of sale
- 5) Easy, inexpensive financing.

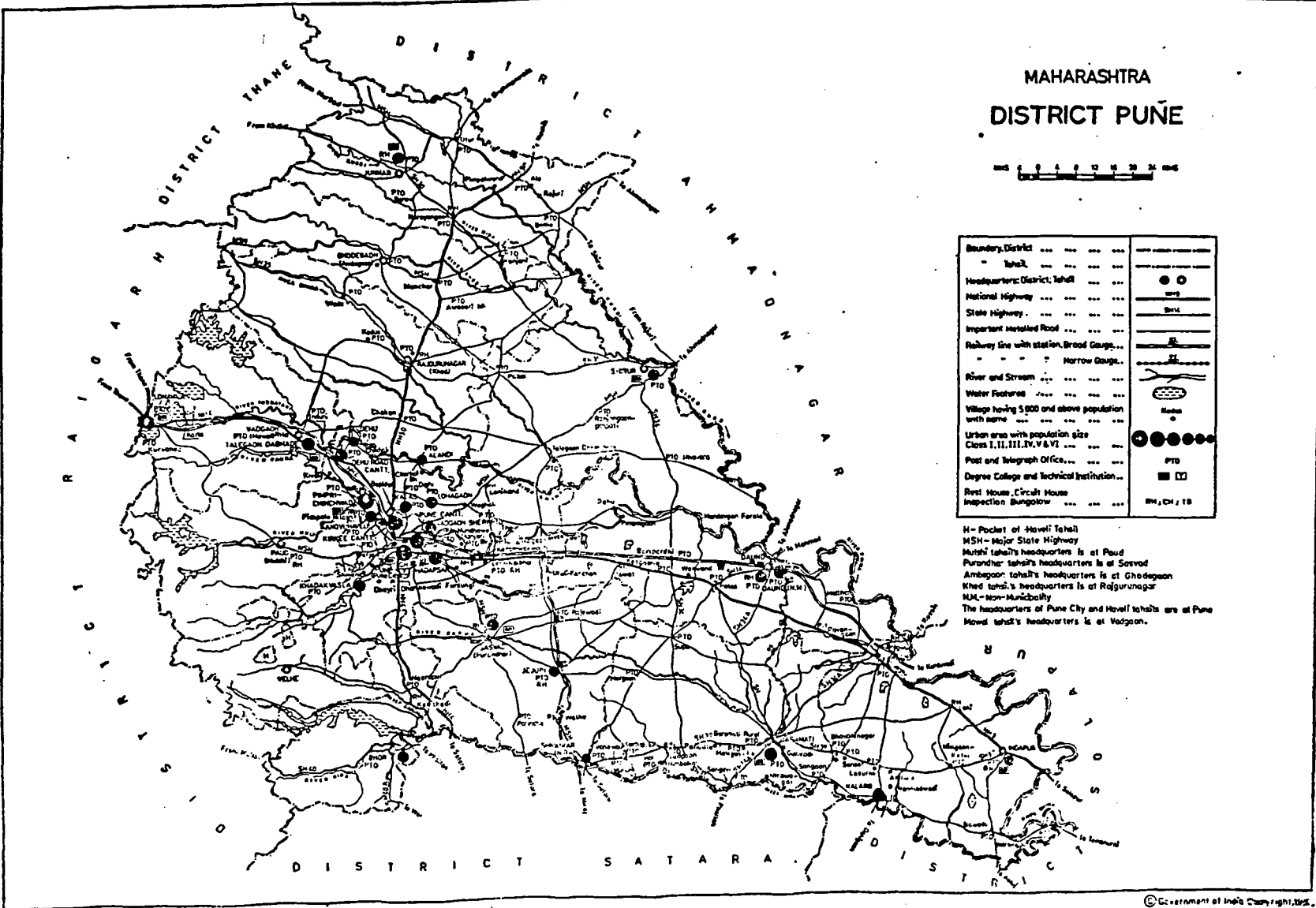
4.2.11 THE MARKETING INFRASTRUCTURE IN THE POONA DISTRICT

Infrastructural prerequisites for efficient marketing having been outlined above, the next step would be to examine the quality of infrastructure in the Poona district. The Poona district may be expected to have changed considerably in the last fifty years. It would be interesting, therefore, to review marketing structure of the 1970s and 1980s against the backdrop of the 1930s wherever comparative information is available. Such comparison should indicate the extent of infrastructural development for fruit marketing in the Poona district.

4.2.111 ROADS AND TRANSPORTATION IN THE POONA DISTRICT

Fruit damage and spoilage are often caused by needless delays in transit due to poor connecting roads. Long stretches of unmetalled or "katcha" roads between the farm

MAHARASHTRA DISTRICT PUNE



Boundary, District	---	---
Taluk	---	---
Headquarters, District, Taluk	● ○	
National Highway	—	
State Highway	—	
Important Metalled Road	—	
Railway line with station, Broad Gauge	—	
" " " Narrow Gauge	—	
River and Stream	—	
Water Features	—	
Village having 5,000 and above population with name	●	
Urban area with population size Class I, II, III, IV, V & VI	● ● ● ● ● ●	
Post and Telegraph Office	PTO	
Degree College and Technical Institution	■ □	
Rest House, Circuit House, Inspection Bungalow	■ □	RM, CH, IB

H - Pocket of Haveli Taluk
 MSH - Major State Highway
 MHT's taluk's headquarters is at Paud
 Purnandur taluk's headquarters is at Sarvad
 Ambegaon taluk's headquarters is at Ghodgaon
 Khed taluk's headquarters is at Rajgurunagar
 NM - Non-Municipality
 The headquarters of Pune City and Haveli taluk's are at Pune
 Haveli taluk's headquarters is at Vadgaon.

Based upon Survey of India. Map with the permission of the Surveyor General of India.

and the market create difficulties for the operation of fast and efficient motorised vehicles, and transportation is forced to continue by means of outmoded and inefficient bullock carts and cycles. Even where access can be had by trucks a premium is extracted in the form of reduced gas mileage. Road transportation has certain advantages over rail transportation and may therefore be favoured over the latter for transportation across shorter distances. In the case of transportation of produce by truck, the truck is solely used for the transportation of the produce and thus has the direct destination to a single market. Trains on the other hand have much larger capacity and so have to please many users. Consequently, the transportation of fresh agricultural produce by trucks is faster and more efficient than rail transport for shorter distances of transit. This is the reason why in the Poona district road transportation has completely displaced rail transportation as a mechanism of transfer of agricultural produce between the Poona cultivators and the Poona market.

Fast and efficient transportation involves more than the mere existence of infrastructure of good roads. To take full advantage of the existing road network there must exist efficient and reliable transporting agencies. Villages that have a trucking agency local office, and preferably more than one competing agency, have an advantage over those that do not. Frequency of transportation and the number of stops between farm and market are also important considerations.

The efficiency of transportation also involves the extent of spoilage in transit. This comes through conditions such as the absence of adequate protection from nature (sun and rain), whether the transition takes place in heat of the afternoon, and the care with which the fruit is handled at all points. It also includes protection against other forms of losses in transit such as through rough handling and thefts in transit.

Referring to the road situation in 1932, the Gadgil Report says:

The geographical formation of the Poona District favours generally the building of roads, and there is a fair mileage of metalled roads in the district. 1/

The 'fair mileage' that the report refers to, by the latest statistics available at that time, was a mere 435 miles of metalled roads as compared to at least 1,377 miles of unmetalled road in the Poona district.²

The Gadgil report describes the system of railway transportation in all talukas except the northern talukas of Sirur, Khed and Junnar. These talukas were untouched by the railway system at that time and therefore, cultivators used road transportation instead.³ Various problems of

1 Gadgil Report, p. 123.

2 The Gadgil Report acquired this rough estimate from the District Local Board, and agrees that the estimate did not include numerous other cart tracks.

3 The Gadgil Report, pp. 115-122.

delays and damage in railway transit have been narrated in this section of the Gadgil report. Road transportation also was inadequate because of the paucity of metalled roads and the unmetalled nature of many miles of village roads.⁴

Fruit damage in transit because of delays in transit and jolty roads was reported as quite high. Incidences of fruit damage in transit and handling, when rail transportation was used, was also reported by the Gadgil Report to be quite high.⁵

The extent of metalled roads in the Poona district has increased considerably in recent years. However, even today, intra-State highways in India are not generally constructed for speed transit and are known to have stretches that await for repairs for very long periods. Given these poor road conditions the fruit growing villages of Poona district are generally closely situated around townships. As a result of the poor road conditions the trips to the villages included in this survey were long and tiring, even though the distances were generally within a hundred miles from the Poona city. Certain sections of the roads were in especially poor condition. For example, the road between Vadgaon Anand (just beyond the cross road of the Poona-Nasik and the Ahmednagar-Malshejghat roads) leading towards Ale,

4 Ibid., pp. 118, 124.

5 The Gadgil report (pp. 118 and 119). Also the replies of the farmers in the survey sample indicate the same.

Rajuri and Belhe was in sad need of repairs. The stretch of road between Narayangaon and Junnar, deteriorates into stretches of mud and slush every monsoon. Even at other times conditions permit only slow transit. The same unfortunate state is to be found on the last stretch of road leading to the village of Sakurde. However, given the general state of rural roads in the country, one cannot but be happy with the availability of so many metalled roads in the district, whatever their condition. The roads need to be repaired more frequently and also widened to allow a freer flow of traffic. Although Haveli taluka scores high points in the quality of roads, the road between Poona city and Baner village (in Haveli) was unmetalled and very rough at the time of the investigation.

The mode of transportation of produce within the Poona district has certainly changed since the time of the Gadgil survey. In Poona district, road transportation is almost the only means used today to despatch produce. Most of this is done by means of trucks which stop at some central point in the village close to a road, and an agent from the truck agency collects the produce. If the agency undertakes the loading and unloading then the farmer is charged for these services as well. The agency has the responsibility to ensure that produce is not stolen in transit and they have the responsibility to reimburse the farmers for all stolen produce. As a consequence of this the incidence of theft, which used to be quite common when fruit transportation was done by train, has become negligible.

A tarpolin sheet covers all the produce after they are loaded and an effort is made to ensure that the packing is tight enough to prevent the fruits from getting tossed around and bruised. Since the distance travelled within the district (from the Poona village to the Poona or Bombay markets) is relatively small, the transition which takes place at night, is completed before dawn. This fact and the use of tarpolin covers gives the fruit some inexpensive protection against the heat of the sun and rain. As a consequence of these changes, damage in transit is much reduced today.⁶

Since there is no regularized form of insurance, transportation, as with all other functions in agricultural marketing, operates on trust. In cases where spoilage or loss is caused by the negligence of the transporting agency this loss is generally, at least partially recoverable. Sometimes the recovery is not immediate, but in cases where competing truck agencies operate in the same area, the reputation of the agency and future business are at stake. This is fairly good insurance of at least partial payment. In most cases, where more than one agency operates in the same area, they are found to be competitive rather than collusive.

⁶ In its discussion of the transportation system used for fruit marketing in the Poona district in the early 1930s the Gadgil survey repeatedly emphasizes the superiority of road transit over railways for the transport of perishable products. (P. 113-133.)

In the case of remote villages not well connected to markets by metalled roads, usually only one agency sends its trucks to that village and the frequency of transportation is lower than in the more important villages. Of course, in such instances the trucking agency weilds considerable monopoly power and is less likely to pay for thefts and damages.

Some of the trucking agencies that operate in the Poona district are Bhosale Truck Co., Navalakha Truck Co., Hundekaritens Transport, Karaje Co., Bhandhase Co., Sarpale Transport, Pawar Transport, Vaagh Transport, Nahar Truck Agency, T.S. Kunte's Co., Gadkal Co., Borchate Co., Gunjal Co., and several others. Two to four of them generally operate in each village through their agents.

In General, truck transportation in the district is efficient and there have been only rare instances of damage or theft in transit. In these rare cases the percentage of recovery was at least 70 per cent of the market wholesale price of the day with no deductions for cost of transportation, loading or unloading.

There is a crying need for good bus (and where feasible, train) connections to as many villages as possible. There is the greatest difficulty getting convenient bus transportation to Baner, Velu and Yawat. Baner, at the time of the survey, was not connected by a bus service and Velu and Yawat as small villages did not seem to merit stops from many buses. Trips to some of the well-connected towns such as Baramati, Otur, Bhor, Ranjangaon Ganapati, etc., were



Chhatrapati
Shivaji
Wholesale
Market
yard at
Gultekadi,
Pune.



Above
Below :- Truck transportation to the Gultekadi Market yard.
Right (top and bottom) :- Packing baskets and boxes being used.



long and tiring. Whatever the conditions of the roads, the bus services to the villages can be improved.

4.2.112 MARKETING COSTS IN THE POONA DISTRICT

An essential part of the structure of marketing is the cost of marketing. Costs of marketing include the availability of cheap and sturdy containers and sufficient packing materials, reasonable rates for transportation, sale, storage, labour, financing and all other marketing services.

Costs at the Poona market have been regulated with the Market Act and the empowerment of the Poona Agricultural Produce Marketing Committee (PAMPC) to enforce the Act. The costs at the market yard have not only been regulated and standardized, they have also been slightly reduced. Various deductions unrelated to marketing common during the Gadgil survey,⁷ and largely continuing till the regulation of the Poona fruit market, have now been made illegal. This has led to reduction in the costs of wholesaling, as will be observed in a later section of this chapter.

Charges of sale by commission agents, charges for weighment, counting, labour (hamali), postage, clearance and refilling have all been standardized at fairly reasonable levels. All charges other than these such as Dharmadaya

⁷ The Gadgil Report, Table No. XIV, on p. 107 offers a sample of the commission agents' deductions. On p. 104, Table No. XII is a sample of aggregated costs, and on p.109, Table No. XV discusses certain items in the commission agents bills that needlessly increased marketing costs.

(religious donations), Vigatwari (deductions for unclean and imperfect fruit) and irregular counting have all been deemed illegal charges punishable by fines and cancellation of licences.

The powers of the Market Committee are restricted within the precincts of the Market Yard where all wholesale auctions of agricultural produce must be conducted. The charges outside the market yard are outside the purview of the Committee and are therefore determined by market forces and the respective market strengths of the individuals involved.

The industry that provides baskets is a small scale highly competitive industry. Therefore the prices of baskets and packing material in the district are quite low. The labour that provides "hamal" services in the fruit growing villages of Poona district studied are not organized. Of the two, the cultivators have relatively stronger bargaining position during most parts of the year. However, during the rush of harvesting the bargaining strengths are reversed in the face of labour shortage. The interviewed cultivators complained that industrialization and the growth of the demand for unskilled services (along with skilled ones) in Poona and other nearby cities has been siphoning out labour from the villages and raising wages during harvesting.

4.2.113 DEBTS OF AND FINANCING FOR THE FRUIT FARMERS OF THE POONA DISTRICT

Such is the nature of fruit production that uncertainties

are the norm and the duration between the starting of the production process and the yield of returns is long. Conditions such as these make the financing of production and marketing of the agricultural products such as fruit a vital factor as fruit a vital infrastructural consideration.

The importance of financing to the agriculturist is difficult to over-emphasize. The specific relevance of agricultural finance to marketing is brought out in the Royal Commission Report on page 429, thus:

The demand for marketing credit is likely to increase as marketing facilities improve, and as the cultivator attains to a wider knowledge of the selling side of his business. Production of agricultural commodities is essentially intermittent and seasonal while consumption is relatively regular. The object of marketing credit is to enable the farmer to exercise his judgements as to when to sell. ^{8/} It thus tends to prevent producers in the aggregate from creating a bad market at certain seasons of the year. (p. 429)

The financing of the agricultural sector is still ridden with problems. The more affluent farmers still have greater access to the long term funds provided by the Land Development Banks (Bhuvikas Banks) and nationalized commercial banks. The incidence of default is also the greatest among the more affluent farmers who simply roll over smaller loans into larger ones. The same problem seems to have crept into cooperative financing where the more affluent farmers have

⁸ The emphasis is our addition to the quotation.

acquired controlling interests.⁹ Absence of easy and inexpensive financing can be a severe deterrent to agricultural improvement. Moreover, the crop loans are barely enough to cover the expenses of cultivation and there is little left over for marketing.

The power of financing is no less in marketing than it is in the production process itself. There is enough evidence in this study and others, to prove that a large part of the power of intermediaries lies in their position as easy financiers for both production and marketing. If the objective of agricultural policies such as market regulation are directed towards the elimination of the power of the middlemen then an inadequate build up of a financing infrastructure is in itself an area of primary concern.

The Table titled "Average Debts Outstanding for the Fruit Cultivators of Poona District" (No. 4.1) outlines debts taken by agriculturists within the 10 year period prior to the survey and portions still outstanding.¹⁰ It also gives the percentage of the original debts still

9 This fact has also been revealed in the Herring and Edwards' study of the Ahmednagar district of Maharashtra. The details may be found in "Guaranteeing Employment to the Rural Poor: Social Functions and Class Interest in the EGS in Western India," World Development, Vol. II, No. 7, 1983, pp. 575-592.

10 The Gadgil report on pages 48-49 mentions the financial stress of the cultivators which is one of the reasons that the fruit was sold to middlemen for early lump-sum payments. The report does not specifically study the indebtedness of the fruit cultivators of the Poona district.

Table 4.1 : Average Debts* Outstanding for Cultivators of
Poona District in the Selected Sample (1978-79)

Fruit/Village and Average farm size category	Average Debt out- standing Rs.	Average percen- tage of original debt	Average term of Debt Years	Average size of original debt Rs.
I. Guava				
1. Talegaon Dhamdhare				
Small	-	-	-	-
Medium	-	-	-	-
Large	1,500	31.51	2.5	3,650
Average	1,500	31.51	2.5	3,650
2. Saswad				
Small	-	-	1	3,000
Medium	1,000	33.33	10	3,000
Large	-	-	2	5,000
Average	600	17.65	4.33	3,400
3. Dive				
Small	250	15.38	1	1,625
Medium	-	31.82	5.83	3,344
Large	1,200	31.11	2	4,500
Average	865	28.45	3.82	3,040
4. Baner				
Small	667	50.00	-	1,333
Medium	500	20.00	4	2,500
Large	1,000	20.00	4	5,000
Average	700	30.43	3.5	2,300
II. FIG				
1. Dive				
Small	-	-	-	-
Medium	1,825	39.46	4.67	4,625
Large	2,000	36.36	8	5,500
Average	1,860	38.75	5.5	4,800

(continued)

Table 4.1 : (continued)

Fruit/Village and Average farm size category	Average debt out- standing Rs.	Average percen- tage of original debt	Average term of Debt Years	Average size of original debt Rs.
2. Velu				
Small	1,575	33.16	2.5	4,750
Medium	-	-	3	2,400
Large	10,000	53.38	5.5	18,300
Average	3,630	44.76	3.38	8,110
III. ORANGE				
1. Talegaon Dhamdhare				
Small	-	-	-	-
Medium	600	7.83	5	7,667
Large	933	17.50	4	5,333
Average	767	11.79	4.5	4,875
2. Shikrapur				
Small	-	-	5	5,454
Medium	-	-	2	1,000
Large	1,600	29.09	7	5,500
Average	320	7.75	4.5	4,127
3. Ranjangaon Ganapati				
Small	2,800	84.85	8.5	3,300
Medium	1,400	58.33	5.5	2,400
Large	543	41.76	7.58	1,300
Average	940	54.65	7.70	1,720
<u>Orange Average</u>	669	19.22	5.12	3,481
IV. MOSAMBI				
1. Sakurde/Belsar				
Small	-	-	-	-
Medium	-	-	5	500
Large	-	-	-	-
Average	-	-	5	150

(continued)

Table 4.1 : (continued)

Fruit/Village and Average Farm size category	Average debt out- standing Rs.	Average percen- tage of original debt	Average term of Debt Years	Average size of original debt Rs.
V. BANANA				
1. Otur				
Small	2,300	27.68	3.67	8,417
Medium	1,180	15.73	2.89	7,500
Large	2,500	20.83	2.42	12,000
Average	1,789	20.62	2.99	8,675
2. Rajuri				
Small	1,667	66.70	2.25	1,000
Medium	4,600	50.83	1.75	9,050
Large	5,640	37.06	2.52	15,220
Average	3,940	40.53	2.15	9,720
3. Belhe				
Small	1,600	61.54	2.33	2,600
Medium	11,500	82.14	2.00	14,000
Large	1,667	56.10	1.50	13,667
Average	7,220	62.67	1.77	11,520
4. Ale				
Small	-	-	-	-
Medium	-	-	-	-
Large	1,833	47.83	1.5	3,833
Average	9,100	47.83	1.5	2,300
<u>Banana Average</u>	4,945	39.08		12,653
VI. GRAPE				
1. Hadapsar				
Small	-	-	-	-
Medium	7,000	33.33	4	21,000
Large	15,000	13.16	3	114,000
Average	11,000	16.30	3.5	67,500

(continued)

Table 4.1 : (continued)

Fruit/Village and Average farm size category	Average debt out- standing Rs.	Average percen- tage of original debt	Average term of Debt Years	Average size of original debt Rs.
2. <u>Uruli Kanchan</u>				
Small	1,300	7.22	5	18,000
Medium	15,000	37.50	10	40,000
Large	16,100	58.55	7	27,500
Average	7,000	28.81	6.4	24,300
3. <u>Yawat</u>				
Small	-	-	2	15,000
Medium	-	-	2	12,000
Large	-	-	-	-
Average	-	-	2	13,500
4. <u>Baramati</u>				
Small	-	-	-	-
Medium	6,000	22.22	2	27,000
Large	302	27.08	1	1,115
Average	1,726	22.75	1.5	7,586
<u>Grape Average</u>	3,721	22.73	3.08	16,374

* Long and short term debts declared to have been taken in the period within ten years of the survey.

outstanding for cultivators of different sizes in each village. The debt structure is listed by the kind of fruit grown.

Although the question addressed to the agriculturists asked them to state all loans and debts, most of them omitted to mention the advances from middlemen. When the question was specifically repeated in the marketing section of the questionnaire some of the details of these loans were revealed.

Some of the lending institutions for cultivators in the selected sample have been:

- A) Nationalized Commercial Banks.
- || B) Institutionalized Services Other Than Commercial Banks such as:
 - 1) Land Development Banks (Bhuvikas Banks)
 - 2) Land Mortgage Banks
 - 3) Local Cooperative Societies and Banks
 - || 4) Government sources such as the revenue department from the block development officers
 - 5) Other informal sources such as:
 - i) Dalals
 - ii) Bagwans
 - iii) Vyaparis
 - iv) Khotidars
 - v) Local money-lenders
 - vi) Friends or relatives
 - vii) Tagai loans from other villagers.

The Bhuvikas banks are the most popular source of financing for land development.

Other sources of financing were approached only when the institutionalized sources either did not provide the loans or intimidated the cultivators with their formidable delays, paper-work or aloofness. Friends and relatives were frequently approached for loans for social purposes, the most common of which was a daughter's marriage. They were also approached for crop loans, loans for the purchase of fertilizers, bullocks and other inputs, for the purchase of land, for home construction, in order to start a secondary business and to meet daily living expenses. These were usually very short term loans of small amounts to be repaid within a few months. They often supplemented a loan from another source which may have been delayed. The terms varied, depending upon the nature of the relationship. Close relatives and personal friends advanced the loans on trust and either without interest or at minimal interest charges (3 per cent per annum) and unspecified terms.

Intermediaries functioning as money-lenders offer financing only at very steep interest rates (24-36 per cent per annum). Although the dalals never openly admit to charging an interest, in fact however they charge 2-3 per cent above the rate at which they borrow from banks. This interest was at 16-18 per cent in 1979-80. Such interest is charged for the larger amounts borrowed for periods of one month or longer. The dalals are somewhat restricted in

openly charging interest on advances, because they are licensed to operate only as commission agents. Any evidence of their operation as money-lenders could lead to the suspension or revocation of their licences to operate as commission agents. For smaller loans for purchases in the city concealed deductions are taken from the returns of fruit sale. An example of this would be the inconsistency pointed out by a few of the cultivators interviewed between the quality of the fruit sent to the market and the quality reported on the commission agent's slip (hishob patti). These cultivators complained that some of their Pati I (grade I) and Pati II (grade II) fruit had been listed as beet (the dreg of the lot selling always at minimal prices) in the commission agents' receipts. In such instances it is reasonable to suspect misreporting of the quality and price of some of the fruit sold, and underpayment of the cultivators. The difference between the actual and stated prices in such instances would be the hidden 'interest' charge.

Villagers who operate as money-lenders also charge substantial interest rates. Their charge is sometimes as high as 36 per cent per annum. This is comparable to the interest rate of 24 to 48 per cent charged by the Bagwans of the Junnar taluka.

Intermediaries and money-lenders continue to be an important source of agricultural marketing finance. The reasons for this continuance of traditional means of finance

are the wide variety of purposes for which middlemen/money-lenders offer loans to the cultivators. Middlemen supply funds to farmers without questioning the purpose for which the loan may be used or specifying rigid periods within which the loan may be used or must be fully repaid. Middlemen have advanced loans for expenses involved in a daughter's marriage, daily living expenses, the purchase of fertilizer and other inputs, land development, financing for seasonal production and for marketing. They also require a minimal paper work. The middlemen are well financed and usually have at least a fair degree of power and control in the village. Some of their power also comes from the fact that middlemen, as money-lenders, are always available for such loans as most banks would refuse to provide. While banks ask for collateral as assurance of repayment, the middlemen, operating with all due self-interest, initiative and profit motive of private enterprise, function at a much more personalized level. They do not always require collateral and they are often willing to accept as collateral some things that banks are not permitted to accept. They can usually make a shrewd judgement of the borrowers real asset structure and the ability to repay the loan. Moreover, they are in no particular hurry for the loan to be fully paid up. The interest rate is set at an annual compound interest and often even monthly compound interest. Every few months they appear to collect their payments from the cultivators. The unpaid amount is simply carried over to the next months.

As with the consumer credit card issuing organizations in the West, the longer the duration of the loan, the more is the total earning of the financing body. As an individual operator, the middleman usually has considerable flexibility in his terms and usually adjusts them according to what he thinks he can realistically extract from his victim. Thus, in spite of the risks involved in agricultural loans, the loan recovery rate for middlemen and other money-lenders is many times that of institutionalized sources which operate impersonally and where private profit is not a motive. Payment prolonged over longer periods also gives the middlemen the additional advantage of prolonged contract and control over cultivators and therefore the assurance of further business. This is an artful and profitable way of minimizing competition from new entrants into the profitable business, and maintaining the oligopolistic profits.

4.2.114 MARKET INTELLIGENCE AND STORAGE

Market intelligence is the essential lubricant that permits heightened marketing efficiency. The nature of market information available to the Poona cultivators is closely related to the discussion on prices. The nature of market intelligence provided by the PAPMC is therefore discussed in the next chapter.

STORAGE: The need for good storage facilities is crucial to the complete accomplishment of an efficient marketing structure. Without proper storage there is fruit loss which further adds to the cost of marketing. The

matter of storage is closely related to the wholesale and retail prices of fruit and to fruit arrivals into the market. Therefore it is more appropriate to discuss aspects of storage in the next chapter.

4.3.1 SELF-MARKETING OF FRUIT IN POONA DISTRICT

In the Poona district, broadly, there are two methods of marketing which the fruit cultivators adopt. The farmer can either sell his standing crop to a middleman and let the middleman carry the nuisance and costs of marketing and enjoy a share in the profit. Alternatively, the farmer can sell to the market directly. In direct marketing there are two options open to the cultivator: (a) that of self-marketing and, (b) that of marketing with the help of trucking agencies. The method of marketing through the middlemen has several variations and must therefore be examined independently and at some length. This discussion will follow after the methods of self-marketing and marketing through trucking agencies have been described.

Self-marketing and marketing through trucking agencies are two variations of the marketing method in which the cultivator bears the costs of marketing. In the case of self-marketing the cultivator assumes the responsibility of transporting his produce personally or by means of his own agent, to the market. In this method the farmer's agent visits the market with the consignment, waits till the wholesale is completed, watches over the procedures of the

commission agents and returns home after collecting the value of the produce net of costs at the market. When a cultivator markets through a trucking agency, the trucking company undertakes the transport of the consignments. At an additional charge, the trucking company's agent will perform the additional service of collecting and checking sales receipts from the commission agents, of paying the costs at the Poona market and receiving, on behalf of the cultivator, the net returns for each consignment.

4.3.2 THE MIDDLEMEN IN FRUIT MARKETING IN POONA DISTRICT

There are three main kinds of intermediaries in Poona district that the fruit cultivator comes into contact with. These are the khotidar (pre-harvest contractor), the bagwan (post-harvest contractor) and the vyapari (trader). Each of these intermediaries specializes in a particular fruit and area. Within this sphere of activity these intermediaries take upon themselves different degrees of risk, effort and marketing costs. This is done by differing the point of time and fruit development at which the purchase is made. The other functionaries that operate in the district, but with whom the cultivators may or may not come into direct contact with are the dalals (commission agents) and the retailers. The hundekari, another participant, within the district has only the function of a transporting agency. The khotidars, bagwans and vyaparis often own their own truck transportation and thus perform more than one single service.

Agents of these functionaries are sometimes called just that: 'Agent'. The above together make up the array in the complicated chain of fruit marketing. These functionaries, also being referred as 'intermediaries', are the connecting link between the cultivator operating in rural regions and their urban customers.

4.3.21 THE KHOTIDARS

Traditionally, of the three kinds of intermediaries, the khotidar undertakes the maximum risk by purchasing the entire orchard, often even before the output potential of that year is ascertained. The khotidars deal in citrus fruits and guava. They are found to operate in the Shirur and Purandhar talukas.¹¹ Their unique characteristic is that they purchase the standing crop very early in the season and thereby assume the risks of the orchard, at a price. They set the price of the entire orchard by sight. The pricing decision of the khotidar is based upon the estimated output and the anticipated market price. At the time of the contract, oral or written, with or without witnesses, the khotidar makes an advance of a third to a half of the agreed amount and it becomes binding upon the cultivator to sell the entire yields of his orchard that season to the khotidar. The rest of the agreed sum minus any charges for inputs supplied and downward adjustments (if market price or the

¹¹ In Purandhar the Muslim khotidars are called bagwans. They deal in orange and mosambi only.

आडले : अल्हू र्दहीम लागवान देगी : श्रीळमकर मस व्ही
 ताजणार :- ह्वावणे शार पी

कृ. उ. बा. स. पुणे, तोल/मापणाराचे दैनिक प्रतिनिवेदन, दि. १०/१२/८६. क्र. ९४

शेतीमाल	प्रकार	बाजार भावाचे परिणाम	बाजारभावाचे रूपये			एकूण टिकी	परिणाम
			कमाल	मध्यम	किमान		
संत्रा	कळविभाग	१०३ पेटीस	६०१-	५०१-	४०१-	१४६	पेटीस
"	"	८३ पेटीस	७०१-	६५१-	६०१-	७७	"
"	"	६३ पेटीस	६०१-	६०१-	६०१-	४२	"
"	"	४५ पाटीस	१४१-	१३१-	१०१-	२६०	पाटीस
"	"	३३ पाटीस	१४१-	१४१-	१४१-	२०	"
मोसंबी	"	"	३५१-	३०१-	१५१-	१७५११	"
"	"	४३ पाटीस	२०१-	२०१-	२०१-	१७३	"
संत्रा	"	१ बीटस	५१-	४५१-	४५०	२३	बीटस
मोसंबी	"	"	६०१-	४०१-	६१-	३	"
			१४६ ६५११				
एकूण रक्कम ६६५११			एकूण गाण्ड ५६१०५				

एकूण मालघनी :
(३)

एकूण बरेदीदार :
(३)

एकूण तोलाई :

मापाई :
५६१०५

An Example of a Khotidar's Sales Slip (Dated Dec 12, 1986) at the Gultekadi Market Yard.

output is found to be less than anticipated at the beginning of the season the agreed price is renegotiated downwards) is paid in either two or three parts. The final payment is made at the time of harvesting.

Even after the contractual agreement of sale/purchase it remains the cultivator's responsibility to undertake all production related operations such as watering, weeding, watching and even the use of pesticides and fungicides such as may be considered necessary by the khotidar. The khotidar gives the cultivator directions in this regard. If indeed the khotidar is dissatisfied with the cultivator's efforts he may decide to takeover those responsibilities himself - at a charge. As fruit development progresses and the orchard begins to mature the khotidar directly hires labour to watch the crop. This cost is not transferred to the cultivator since this has been traditionally regarded as a part of the marketing process which the khotidar has agreed to undertake with the khoti agreement. Beyond this point all marketing operations and decisions such as packing, transportation, choice of markets, etc., are that of the khotidar's.

4.3.22 THE BAGWANS

The bagwans¹² are somewhat similar in their operations

¹² Bagwans operate only in the Junnar taluka. They buy only banana orchards. These kinds of bagwans are not mentioned in the Gadgil report.

to khotidars, except that they undertake a relatively small amount of risk. While the khotidar traditionally pays upto a minimum of a third to half of the agreed price at the time of plucking, the bagwan makes his payment on the basis of the actual sale of the produce at the market. The prevailing market price determines the amount paid to the cultivator and a low price is immediately transferred to the cultivator. Under the bagwani system all marketing costs are borne by the cultivator. The bagwan's share from gross earning is generally a standard 10 per cent of the gross earnings from the fruit sale. Besides this, in his role as an unlicensed money-lender the bagwan advances loans at very high interest rates which usually vary between 24 and 36 per cent, but sometimes are as high as 48 per cent per annum. Interest on advances made to cultivators may thus be as high as 4 per cent per month, and may be taken out of the proceeds from the sale of fruit. Generally, there are two ways in which the bagwan pays the cultivator. In the first method the bagwan indicates to the cultivator the total proceeds from the sale, and after that makes the deductions for the costs of transportation, marketing, etc. By the second method, the bagwan first deducts all the expenses of transportation and marketing paid by him, and hands the net earnings to the cultivators. Therefore when the cultivators offered conflicting estimates of the average market price for the previous season, some of them were referring to net returns after the deduction of market costs, etc., often even net

of the bagwan's charges for his services of marketing.

The extent of the bagwan's risk is that he undertakes the purchase of the entire orchard. The agreement is sometimes made two to six months before the fruit is ready, depending upon the urgency of the credit requirements of the cultivators concerned and the willingness and the capacity of the bagwan to satisfy this need in the form of an 'advance'. Unlike the khotidar, the advance that the bagwan makes is a separate transaction from the marketing agreement, although the advance is made conditional to an agreement of sale of fruit through the bagwan. The total amount of the advance is usually a safe amount easily expected to be recoverable with interest after the completion of the sale.

It is important to clarify at this juncture that these bagwans deal in bananas in the Junnar taluka of Poona district. The bagwani system of Junnar was originated by Muslims most of whom came from Karnataka State and the bagwani business was initially a monopoly of theirs. However, in the last twenty years, the Marathas have almost completely taken over the business from the Muslim bagwans. Some of these, in order to be differentiated from the Muslim bagwans, choose to call themselves "vyaparis" or businessmen/traders instead. Since this could get very confusing, the middlemen of Junnar who adopt the particular mode of operation typical of bagwans generally will be referred as the bagwans, and the grape traders of Baramati who have a slightly different modus operandi shall be referred to as the vyaparis.

The khotidari and bagwani agents are not necessarily specialized full time professions. Often the more prosperous cultivators undertake this as a secondary business. For the khotidar and the bagwan the risk, effort and nuisance of marketing undertaken is definitely compensated by the returns received. Dependence upon the intermediary due to the cultivators' ignorance of market conditions and inability to spare time and labour for personal supervision of marketing often results in the very substantial compensation of the intermediaries discussed earlier. Both these groups of intermediaries continue to live in the villages. Often they hold their domains against competition through the bindings of caste, clan and kinship. A well founded business relationship based on the theory that it is better to go along with the familiar rather than risk the new and unfamiliar is very important in maintaining these relationships.

4.3.23 THE VYAPARIS

The third type of intermediaries are the traders who come from the cities to purchase the fruit of their choice. The vyaparis operate in the Baramati taluka. They are wholesale traders or retailers living in the cities. Bringing their own transportation at their own expense, their purpose is to purchase fruit cheaper at the farm and make a profit on the difference from the city's retail price. There is no question of contract or even binding agreement to purchase from any particular cultivator. Purchases by vyaparis are

made on the basis of the quality of the fruit once it is ready for sale. The risk undertaken by the vyapari is minimal and certainly the least of the three intermediaries in the fruit marketing business. Since they bear all marketing costs themselves, the price paid by them is correspondingly low. The farther the village from the cities, the higher is the difference between the city retail price and the price paid to the cultivator.

4.3.24 THE DALAL OR THE COMMISSION AGENT

The dalal is the auctioneer of the fruit that has already been brought into the market yard. His functions are to unpack, roughly grade, auction and store fruit, a night or two, if necessary. He then deducts the costs involved and the charges for his own services from the prices received and mails the remaining sum to the cultivator. There is no transfer of ownership and his marketing risk is zero. However, he does make loans of small amounts to cultivators for purchases at the Poona city.

4.3.3 KHOTIDARI, BAGWANI AND VYAPARI: COMPARISON WITH THE SITUATION REPORTED BY THE GADGIL REPORT

There are several similarities evident in the marketing methods and in the operations of the market functionaries in the two periods, almost a fifty years apart.

For instance, as with this survey, the Gadgil survey also found cultivators with larger landholdings using the services of the khotidars and other middlemen as much as



Wholesale Marketing of Fruit at the Gultekadi Market Yard.



those with smaller holdings.¹³ The khotidar or the pre-harvest contractor continues to operate more or less in the same manner as during the Gadgil survey. They continue to purchase standing crops as in the 1930s, pay the farmers a low enough price to allow themselves adequate risk insurance against poor harvests. The khotidars of the 1980s still perform the multiple functions of financiers, marketeers and the suppliers of market intelligence and essential inputs. To illustrate further the similarities, even in the incentives of sale of orchards to khotidars in the 1930s as compared to the present, the following quote from the Gadgil report illustrates how little has changed:

The small grower, on the other hand, suffers from many handicaps. His orchard is usually too small to permit him to do his picking, packing and marketing economically. He also has not the funds available at the end of his agricultural operations and when fruit begins to mature, to purchase the baskets, boxes, etc., and defray the transportation expenses. It is again quite likely that he is desperately in need of money for meeting recurring charges such as interest on debt, and is very glad to get a substantial lump sum immediately. He is also able to pass on to the Khotidar a number of risks. These risks are natural risks, such as those connected with the ultimate output, of inclement weather, of insect-pests and fruit diseases; there are other risks viz., those of theft, fire or bad debts and lastly the risks connected with the fluctuations of prices. All these considerations, therefore, influence a large number of especially the smaller growers to sell, wherever possible, the standing fruit crop to Khotidars. There is also the additional consideration that

13 The Gadgil Report, op.cit., p. 49.

"Dalals" i.e. commission salesmen usually give better terms to substantial khotidars who can regularly consign fruit to them than to the very small cultivators. 14/

The contractors for the banana crop described in the following quote refers to the practices of bagwans of this survey. While this survey found bagwans who purchased ready crop to operate in the Junnar taluka only, the Gadgil Survey reports thus:

The system (of khoti) is generally prevalent through all fruit, but is especially prominent in two cases, viz., the growing of citrus fruit in Purandhar taluka and bananas in Junnar taluka. In the case of bananas in Junnar and the bananas at Walha in Purandhar taluka, it is a modified type of khoti that is most common. In the case of bananas in this district, it is not the standing crop that is sold. The agreement is more in the nature of a price agreement. The khotidar does not buy up the produce of the whole garden or plantation for a lump sum. He merely agrees to take all the bunches that may be produced at a price which is fixed in advance. The price is usually fixed by 'hundred' bunches - which, in practice amounts to 105 bunches. The khotidar usually undertakes to accept all bunches, whether the fruit is large or small, produced in the garden at the average rate fixed. The contract is generally entered into at the beginning of the season i.e. towards the commencement of the monsoon. The removal of the bunches from the garden is carried out by the buyer. 15/

The above description, with certain variations, describes the present system of bagwani fairly accurately. The counting process today is more standardized now as options

14 Ibid., pp. 47-48.

15 Ibid., pp. 48-49.

of self-marketing become more viable than before. Moreover, under the most recent variation of bagwani the bagwan simply deducts a 10 per cent charge for his marketing services.

Another variation reported in the Gadgil Report was:

There is also current a modified form of this contract by which the buyer agrees to buy, not the whole produce of a garden, but a certain number of bunches during the season from the cultivator. It will be observed that in this banana contract the production risks are not shifted on to the buyer, but only the price risks. 16/

The above description of fruit contractors during the Gadgil Survey described a variation in the practices of banana contractors. Today, in fact, it is a close description of the purchase practices of certain vyaparis. The bagwans of Junnar generally reach annual agreements to purchase the entire orchard of bananas. The vyaparis, on the other hand, undertake the minimum possible risk, by purchasing only portions of the orchard when the fruit is ready for harvesting. The vyaparis of today are found to operate mainly in the grape and fig orchards.

As with the present study's findings, the contractors of Purandhar taluka who mainly dealt in oranges and mosambi called themselves bagwans. The purchase practices were similar to those of khotidars, as is the case today.¹⁷ Moreover, as in the present time, contractors did not generally

16 Ibid., p. 49.

17 Ibid., p. 49.

purchase standing crops of fig orchards. The cause of this reluctance to purchase fig orchards has been described by the Gadgil Report as to be the direct consequence of the rust-prone characteristics of fig orchards.¹⁸ Years later, the fig orchards of Poona are still suffering from poor yields as a result of the rust disease, and the khotidars continue to express a reluctance in purchasing fig orchards.

There are similarities between 'then' and 'now' to be found also in division of operations between the farmer and the khotidar once the sale has been agreed upon. Most agreements are still oral today as they were in the 1930s, although the incidence of written contracts is on the increase. The payment structure, number of instalments in which payment was made, and the post-settlement haggling and bargaining remains as before.¹⁹

The Gadgil Survey also reports that while there were variations in contract terms, the normal practice was to purchase the standing crops for one year.²⁰ This is also the current practice.

Finally, another notable similarity in the middlemen operating structure of the two periods is the domination of a few middlemen found in both cases. The Gadgil Report estimated about eight buyers in Saswad and at Jejuri about three or four of them. Although the khoti-bagwani systems are much

18 Ibid., p. 50.

19 Ibid., p. 51.

20 Ibid., p. 50.

more competitive today and some new purchasers have entered the market, the structure of the business continues to be oligopolistic.²¹

Among the differences the most notable is the reduction of the dependence of orange and mosambi cultivators upon khotidars in the Purandhar and Sirur talukas. The accessibility to trucking services in most fruit growing villages and the extension of metalled roads leading directly to the Bombay and Poona markets has increased self-marketing of fruit in these areas. Also, the multiple year contract mentioned by the Gadgil Report²² appears to have been replaced with annual contracts. Another point of difference is that khotidars and bagwans today individually control a smaller share of the total produce being sold to middlemen as there are now a large number of them operating. Moreover, whereas in the Gadgil Report²³ the khotidari system was found to be common in Purandhar and "an exception and not the rule" in the Sirur taluka, the situation appeared somewhat altered at the time of this survey. Khotidari sale seemed as common in the Shirur taluka as in the Purandhar taluka. It must also be pointed out that the Shirur taluka is no longer "the concentrated area"²⁴ for orange cultivation

21 Ibid., p. 49.

22 Ibid., p. 49.

23 Ibid., p. 50.

24 Ibid., p. 49.

reported by the Gadgil survey. As water shortages have destroyed previously thriving orchards in these tracts, the khotidars have found their services to be in greater demand. Small-sized orchards and output are generally the ideal conditions under which middlemen flourish best.

In reference to the contractors of Purandhar who call themselves bagwans, but were in fact found to function as khotidars by this survey, the Gadgil Report has the following comments to offer:

In the Purandhar taluka orange crops, there is current a variation of the normal Khoti practice. This is that the contract with the buyer runs, in some cases, not for one year but for a number of years. It is not so much a standing crop in this case that is sold, as the whole produce of an orchard for a number of years. This duration differs from garden to garden, but sometimes it may be for as long as ten years. It is remarkable that even very large growers in these parts dispose of their gardens in this fashion and the number of growers who market their own fruit is extremely small. 25/

By the time the current survey was conducted the practice of long-term contracts had been replaced by annual contracts among all categories of contractors. This could have been as a result of easier access to markets than before.

The bagwani system of the Junnar taluka has changed somewhat as under the present system bagwans who purchase entire orchards. The basic system of advances for khotidars and bagwans appears not to have changed over the years,

although there are now often written contracts and receipts. This would appear to be a substantial advancement of procedures in the period. This change came about probably as a result of better market intelligence now being made available through radios and the relatively better roads that enable cultivators to have easier direct access to markets. The risk expressed in the Gadgil Report in the matter of buyer default was peculiar to the period of falling prices and world depression of the early 1930s. Buyer default was not mentioned by any of the cultivators in the sample. Therefore, one may infer that such incidences must be greatly reduced now.

There appears also to be another area of departure from the procedures of 1931-32. The Gadgil survey reported the following:

We tried to make enquiries regarding the extent to which these contractors advanced sums to the growers and thus kept them bound up to sell the gardens to themselves. We find that such indebtedness, on the part of growers to the class of contractors, was not at all common. In a few cases, such advances may sometimes be made for agricultural operations by contractors locally resident; but as a general rule, it does not seem, as if, advances are made by buyers to growers, on a scale likely to influence their decision regarding the sale of the standing crop at all, or the sale of it to a particular buyer. 26/

The findings of the current survey are different. Through interviews with cultivators as well as khotidars it

was ascertained that it is now fairly common practice for khotidars to make loans to cultivators. The purpose of such loans is to place a binding for the sale of the standing crop to that khotidar, although the khotidars did mention that cultivators occasionally did not abide by the initial agreement. However, such default is not common because of the mutual dependence of the concerned parties. Besides this they also make advance part-payments for standing crops already purchased.

The "Country Buyer" of the Gadgil survey fits into the description of the middlemen known now as vyapari or trader. Their modus operandi appears to have remained the same over the years. The large number of vyaparis in the grape business at the time of this survey was the only new factor with regard to this functionary.

The role of the dalal or commission agent remains unchanged. The dalal's charges have to be controlled and standardized by the Market Act, although the duties performed remain as before.

Overall, there have been some improvements in market procedures in the last fifty years, but not all the changes are positive. The increased financial dependence upon middlemen in recent years is one such not so positive change. Even so, the position of the cultivator is better today in many respects. Some of these positive changes are the greater incidence of written contracts, a sales slip-based price determination in the bagwani system of the Junnar taluka and

Commission Agents' Sales Slip for
A Khotidar at the Poona Market
 (Mozambi 1986)

बाजार समिती
 कृषि उत्पन्न
 बाजार समिती, पुणे.

[Subject to Poona Jurisdiction]
 हिशोब पट्टी

No 4555

Raosaheb Bhausahab Anpat

रावसाहेब भाऊसाहेब अनपट

फूट मर्चेट आणि कमिशन एजंट * गाळा नं. ३३०/१८६
 श्री छत्रपती शिवाजी मार्केट यार्ड, गुलटेकडी, पुणे ३७.

Resi ४४७०३५
 P. P. ६२६०९

तारीख १०।१०।१९८६

मा.उद्योग्याचे नाव श्री.राशि आणि कं. जि.अ.नगर राज्य मत्त.
 मालाचा प्रकार ल.रेडीदाराचे नाव फा.प.प्र.
 डाग संख्या मोसंबी

क्रमांक	परिमाण	वजन मापे	दर	दरये	पैसे	विवरण	दरये	पैसे
३१॥	३३		३०१-	१३०५=	००	भाउत	१०९=	८३
११	३३ (जाड)		१८-	०१९८=	००	नांलाई/मापाई	०२=	९५
१	" (लमि)		२०-	०२०=	००	भराई	८=	८५
१	वीट			०१=	५०	विगतवारी		
३	३३ (जाड)		१५१-	५५=	००	मो.भाडे/त्रकाड	१५०=	००
५९॥	१३००					हमाळी		
						दर खचं		
						अ)		
						ब)		
						क)		
						एकूण	०२७०=	६३
						मर्च वजा जाता		
						दिल्लेक वचकम	१२९१०=	८७
						एकूण	१६९=	५०

हिशोबपट्टीत नमूद केल्याप्रमाणे अक्षरी हत्ये पोणे पोहोचले/वाडविले.
 रक्कम भिळालेबद्दलची राही तारीख

मागील दिवसक भावक ए.ग विक्री अक्षर दिवसक
 आहत्याची सही
रा.भा.अनपट

greater interest in self-marketing in the orange, mosambi and fig growing villages especially.²⁷ Even in the case of banana growers a new group of cultivators had pioneered self-marketing when this survey was conducted. At that time, owing to various infrastructural constraints, the entrepreneurial cultivators were not rewarded with higher net returns. But, the structural constraints of self-marketing as compared to the marketing via intermediaries is an issue that needs to be examined by itself. This has been attended to later in this chapter.

4.4.1 THE ORDERING OF MARKETING STRATEGIES

When fruit is marketed through intermediaries, the involved functionaries are either the khotidar, the bagwan or the vyapari. The operations of these middlemen have already been explained. The different modes of operation and the varying degrees of marketing risk undertaken by the above intermediaries, make them (theoretically) four distinct categories.

The time of sale to intermediary can be graded into the various distributions of risk between the cultivators and the middlemen. The earlier the sale of the orchard to the intermediary, the higher the risks of purchase and therefore the lower the prices received by the cultivator. Such are the bargaining positions and the power controls in

²⁷ Only about 15-20 per cent of the cultivators continue to sell their standing crops to khotidars.

the marketing chain that though a poorer output than expected would involve a downward revision of an initially agreed price, the reverse has not been known to occur. Thus the longer the cultivator can postpone the sale of orchard the better is his bargaining position and the greater are his chances of getting a better price. On the basis of these arguments it is reasonable to assume that a later sale may be regarded as a superior marketing method to an early sale.

The alternatives of sending fruit to market with a trucking agency or self-marketing, have within their broad spectrum, several sub-alternatives. The choice of markets can take several forms. Logically, the superior method would be the one that permitted the cultivator to reap the highest possible return. It would seem that this is most likely to occur when the cultivator freely chooses between the largest urban markets where the price of fruit would be significantly higher than in the village markets. For instance, a free choice between Bombay, Poona, Ahmedabad and Surat, the four major markets in Western India, would definitely be considered a preferable method of market choice rather than dependence on any one of these markets. Furthermore, a local or nearby small market would definitely be an inferior choice, an act of desperation, since these markets are not likely to yield high prices for fruit. Even the lower cost of transportation is usually not sufficient compensation for the lower price.

Drawing from the reasoning described above marketing strategies adopted by cultivators can be ordered by the degree of power and freedom expressed by his choice. His research indicates such a pattern of ordering and concludes that freedom and market power is expressed by the degree of choice or absence of it.

The following gradation of marketing methods would rate the various methods in descending order of freedom and market power:

(A) A free choice of major markets and no necessary recourse to smaller markets.

(B) A choice of only one large market but which requires higher costs in the form of packing charges in the expectation of better prices (e.g., Bombay market as compared to the Ahmednagar market). This includes a market that does not require the sophistication and added costs of packing but offers a better price on average as a result of the higher population concentration and higher incomes (e.g. Poona).

(C) A choice of one or more large markets and also smaller markets either for the disposal of inferior fruit or as a cushion in moments of higher financial needs.

(D) The choice of local or other neighbouring small markets only, indicating inability or unwillingness to explore market possibilities where a cultivator might enjoy the better prices and conditions of the larger markets.

This too is indicative of the cultivator's financial need and lesser control over the market.

(E) The choice of sale to an intermediary once the fruit is ready, or almost so, rather than undertaking marketing costs and efforts themselves.

(F) The choice of sale to an intermediary before the fruit is fully ready at the risk of much lower prices. This is in exchange for an advance of financial assistance made available by the intermediary without administrative red-tape or time lag.

Although the role of the intermediaries is at this point open to question, it seems reasonable to assume that methods (E) and (F) indicate less control over the market and are usually adopted under conditions of financial pressure. Moving from (A) to (F), the options open to the cultivators gradually decrease and thus each consecutive choice is inferior to the previous one. The number of cultivators in each category and the linkage between methods of marketing and size of land and orchard size are illustrated in Tables 4.2 through 4.7.

4.5.1 THE QUANTITATIVE ASPECTS OF FRUIT MARKETING IN POONA

The quantitative aspects of fruit marketing include those aspects that may be numerically represented and studied. Aside from the qualitative aspects we discussed earlier, the efficiency of a marketing structure may also be judged by such features as the costs of marketing and the price spread.

Table 4.2 : Variations in Time and Stage of Fruit Development of Sale to Khotidar
Among the Fruit Cultivators of Poona District in the Selected Sample
(1978-79)

Time of sale	Size of landholding (Acres)									Total
	0-1	1-5	5-10	10-15	15-20	20-25	25-30	30-50	50-100	
1K) Time of Flowering	0	0	0	0	1	1	0	0	0	1
2K) Small and Green	0	0	0	0	1	0	0	0	0	1
3K) Large and Green	0	2	1	0	1	0	0	0	0	4
4K) Almost or Fully Ready	0	0	1	1	0	0	0	1	0	3
Total	0	2	2	1	3	1	0	1	0	9

Table 4.3 : Variations in Time and Stage of Fruit Development of Sale to Bagwans by Fruit Cultivators of the Poona District in the Selected Sample

Time of sale	Total	Size of landholding (Acres)								
		0-1	1-5	5-10	10-15	15-20	20-25	25-30	30-50	50-100
1W) 2 months after planting	1	0	0	1	0	0	0	0	0	0
2W) 6 months after planting	2	0	1	0	1	0	0	0	0	0
3W) 10 months after planting (green and hard and less than full sized)	2	0	0	1	0	0	1	0	0	0
4W) When ready (varies from 12 to 18 months)	16	0	4	3	4	3	1	0	1	0
Total	21	0	5	5	5	3	2	0	1	0

Table 4.4 : Mode of Sale of Cultivators with Different Sized Holdings in the Selected Sample (Poona District, 1978-79)

Sr. No.	holdings (acres)	Method of marketing			Place of sale													Total
		I Khotidar	II Bagwan	III Vyapari	Local market	Local and other neighbouring market	Local and other distant market	Poona city	Poona and local	Poona and other neighbouring market	Bombay only	Bombay and local	Bombay and other neighbouring market only	Other neighbouring market	Bombay and Poona only	Bombay, Poona and Local	Bombay, Poona and other distant market	
					1	2	3	4	5	6	7	8	9	10	11	12	13	
1.	0 - 1	Nil	Nil	Nil	1	Nil	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	2
2.	1 - 5	2	9	Nil	Nil	Nil	1	5	Nil	2	9	Nil	Nil	1	3	Nil	1	33
3.	5 - 10	2	7	2	Nil	Nil	Nil	4	3	1	10	1	1	Nil	8	1	1	41
4.	10 - 15	1	5	4	Nil	Nil	Nil	5	1	Nil	5	2	Nil	Nil	3	Nil	1	27
5.	15 - 20	3	3	Nil	Nil	Nil	Nil	1	Nil	Nil	4	Nil	Nil	Nil	1	Nil	Nil	12
6.	20 - 25	Nil	2	Nil	1	Nil	Nil	2	Nil	Nil	1	Nil	Nil	Nil	2	1	Nil	9
7.	25 - 30	Nil	Nil	2	Nil	Nil	Nil	1	Nil	Nil	1	Nil	Nil	Nil	1	1	Nil	6
8.	30 - 50	1	2	Nil	Nil	Nil	Nil	1	Nil	Nil	2	Nil	Nil	Nil	2	Nil	1	9
9.	50 - 100*	Nil	Nil	Nil	Nil	1	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil	1	Nil	Nil	3
Total		9	28	8	2	1	1	21	4	3	32	3	1	1	21	3	4	142

* These are operational holdings and not acres under single ownership.

Table 4.5 : Method of Marketing Adopted by Each Size of Landholder in the Selected Sample

Size of Holding (acres)	Methods of Marketing						Total
	(A)	(B)	(C)	(D)	(E)	(F)	
0 - 1	0	1	0	1	0	0	2
1 - 5	4	14	3	1	4	3	29
5 - 10	9	14	7	0	4	3	27
10 - 15	4	10	3	0	5	1	23
15 - 20	1	5	0	0	3	3	12
20 - 25	2	3	1	1	1	1	9
25 - 30	1	2	1	0	0	0	4
30 - 50	3	2	0	0	2	0	7
50 - 100	1	3	0	1	0	0	5
Total	25	54	15	4	19	11	128

A : Bombay-Poona-Distant Markets

B : Bombay or Poona Market

C : Bombay-Poona-Neighbouring Markets

D : Local-Neighbouring Markets

E : Khotidar-Bagwan-Vyapari

F : Khotidar-Bagwan

Table 4.6 : Acres Under Fruit and Methods of Marketing Adopted by the Fruit Cultivators in the Selected Sample (1978-79)

Sr. No.	(Size of Orchard) Acres under fruit	Methods of marketing													Total			
		I	II	III	1	2	3	4	5	6	7	8	9	10		11	12	13
1.	0 - 1.00	7	21	2	2	1	0	17	2	1	24	3	1	0	14	0	2	97
2.	1.00 - 5.00	1	7	4	0	0	1	4	2	2	8	0	0	1	7	1	2	40
3.	5.00	1	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	5
Total		9	28	8	2	1	1	21	4	3	32	3	1	1	21	3	4	142

Note: For column headings please see Table 4.4.

Table 4.7 : Percentage of Cultivators Adopting Different Methods of Marketing for Different Sized Orchards in the Selected Sample (1978-79)

Methods of marketing	Size of orchard 0-1.00 acres	Percentage ()	Size of orchard 1-5.00 acres	Percentage ()	Size of orchard 5.00 acres	Percentage ()	Total	Percentage ()
Bombay-Poona-Distant Markets	16	(64.00)	9	(36.00)	0	(0.00)	25	(18.52)
Bombay or Poona Market	41	(77.36)	12	(22.64)	0	(0.00)	53	(39.26)
Bombay-Poona-Neighbour- ing Markets	7	(46.67)	6	(40.00)	2	(13.33)	15	(11.11)
Local-Neighbouring Markets	3	(75.00)	1	(95.00)	0	(0.00)	4	(2.96)
Khotidar-Bagwan-Vyapari	16	(59.26)	8	(29.63)	3	(11.11)	27	(20.00)
Khotidar-Bagwan	10	(90.91)	1	(9.09)	0	(0.00)	11	(8.15)
Total	93	(68.89)	37	(27.41)	5	(3.70)	135[@]	(100.00)

@ As 7 of the cultivators selling bananas to Bagwans keep their options open about the time of their sale, these cultivators have been left out in Tables

A marketing structure becomes a more efficient one when marketing costs are reduced, and when the produce passes through the shortest and the most direct channel to reach the consumer. The minimization of links in the marketing chain implies an enlargement of the farmer's share in the consumer's rupee. Thus, this section on quantitative analysis will examine marketing costs, market margins and the price spread between the Poona district cultivator and the Poona city retailer.

4.5.2 PRICE SPREAD, MARGINS AND MARKETING COSTS

The distinction between marketing costs, market margins and the price spread should be established before any further discussion on the subject. It may be made thus:

- (a) marketing costs are the expenses of marketing borne by each market functionary who accepts ownership of the produce;
- (b) market margins are the mark-ups that each functionary adds to his purchase price after a transfer of ownership takes place;
- (c) the price spread is the analysis of the distribution of the consumer's price for the produce among the various participants in the marketing channel.

4.5.21 MARKETING COSTS AND MARKET MARGINS AND PRICE SPREAD IN FRUIT MARKETING IN POONA DISTRICT

A lengthy interlude does not interject the marketing channel between the cultivator in the Poona district and the markets of either Poona or Bombay. The marketing channel is

short and relatively direct. This is not surprising, given the short distances involved. What is interesting, though, is that the categories of middlemen mentioned in the Gadgil Report some fifty years ago when communication systems were much less developed, continue to function even in the 1980s. The reasons for the survival of this institution in the Poona district are an inviting subject for investigation.

The margins are different for orange and mosambi, grape, and for banana. In fig marketing a direct channel is commonly used between Poona district's cultivators and the markets of Poona and Bombay, although some traders from will buy the fig directly from Velu. The mode of transportation is by road in almost all cases within a 400 km radius. Of course, if the fruit is transported beyond these immediate markets another set of margins emerges. In such cases the commission agent (acting as a trader) or a wholesale trader, purchases the fruit at the prevailing market rate and ships the consignment to some other distant markets such as New Delhi or Calcutta. In such a case the trader's margin would be the difference between the price obtained for the fruit at the distant market and total of the purchase price plus marketing costs between the Poona (or Bombay) markets and the final market.

The 'direct marketing' that is referred to here is rarely a single direct channel from the cultivator to the consumer. By 'direct marketing' we are referring to the

elimination of all middlemen other than the retailer from the production-consumption channel.

In the immediately following pages each of the six fruit, taken individually, will be studied for marketing costs and market margins for all existing market channels. The analysis for each fruit will begin with an examination of the component of the farmers' marketing costs. This will be proceeded by an analysis of price spreads, market margins and net returns to farmers, middlemen and retailers. Following the analysis of price spreads will be outlines of costs of marketing of the middlemen while the retailers' costs of marketing illustrated in a table common to all six fruit will be included with the first fruit (orange) only. Such an examination of costs of marketing and market margins will provide an explanation for the continued demand for middlemen's services in fruit marketing.

4.5.22 EXPLANATORY REMARKS ON THE METHODS OF
CALCULATION OF CERTAIN ELEMENTS OF
THE COSTS INVOLVED IN FRUIT MARKETING

The six fruit included in this study have distinctive individual characteristics and the various costs involved in their marketing both at the farm, as well as at the market, are also distinctive different. Certain marketing costs, such as the costs at the market, though variable in their units of measurements and specific rates, are self-explanatory once the dozen to kilogram conversion rate adopted is specified. Others are not as obvious, and require an

explanation regarding their method of an explanation regarding their method of computation by the quintal or the dozen. Examples of this are the costs per quintal of output incurred in watching and harvesting the orchard and the interest on marketing capital. These expenses are incurred seasonally. When questioned about these expenses the cultivator is able to, quite accurately, state either the actual number of people hired for the entire orchard for a particular length of time, or the number of labour-days used for an orchard of a particular size for these operations. Regarding the interest on the marketing capital that he borrows from either the middlemen or the moneylenders, the farmer is able to correctly state the interest per annum or per month. These are expenses as the farmer actually experiences them, and years of experience in the farming business make it easy for him to give fairly accurate figures. Estimating these, same expenses by a unit of the output, however, becomes very tasking for him and the results are less accurate. The more reliable seasonal data acquired from the farmer therefore remain to be converted into per unit of output figures, and the onus of the task belongs to this research. While the actual conversions will be completed alongside the respective tables illustrating the details of the marketing costs, the general methodology adopted for these conversions will be explained in the following paragraphs.

Seasonal or simply any form of temporally stated cost

figure can be converted to cost per unit output by dividing the total cost for the entire season by the total yield for the season. This may be calculated individually for each cultivator if there is a highly variable pattern, from one cultivator to another growing the same fruit, in either the number of days constituting the length of the season for the fruit, or the number of labour units hired per acre of orchard. While there is great variation in input usage in cultivation, operations such as the watching of an orchard of the same fruit and variety was found to be fairly standardized among the cultivators in the survey sample. Therefore, the average number of labour-days used for watching the orchard of a particular fruit for a representative sized orchard is first calculated for the entire season. A representative sized orchard would be the average size of an orchard for each fruit taken individually. To circumvent the problem of shared labour units among more than one orchard or crop, especially when orchards were tiny, the cultivators were asked to state the labour units required for watching a standard two or one-acre orchard. This was then divided by the average output for an orchard of that size to obtain the per quintal cost of watching.

For harvesting the labour usage and the frequency of harvesting a standard sized orchard of one or two acres for the full length of the season was divided by the total output to obtain the harvesting cost per quintal. Interest rates are specified by the month (or year) and thus these too had

to be converted to a unit of output such as the quintal. While the length of the season was more or less the same for individual cultivators, the representative 'total output' that was produced over the season could not be taken as the per acre output, since the average-sized holding for any fruit was not exactly one acre. The representative output per cultivator per season was therefore calculated for an average-sized orchard for each fruit.

The interest on marketing capital too requires explanation. The crop loans available from lending institutions are invariably inadequate to cover expenses involved in both the cultivation and the marketing of fruit. Therefore, the cultivator has to seek alternative sources of marketing finance. Among the lenders willing to assume the risk and extend marketing credit are local money-lenders and marketing intermediaries such as the khotidars and the bagwans. The interest rate charged by these lenders varies between 2 per cent per month to 4 per cent per month. The marketing capital is generally borrowed two to three months before the fruit is fully ready to be harvested. During these earlier months containers and packing materials, are purchased, additional peak-period labour is arranged for, and a few initial consignments of fruit are sent to the market to catch the higher pre-seasonal prices. The loan period therefore exceeds the main harvesting season by 60 to 90 days and is accordingly set. As in the calculation of the per quintal cost of watching and harvesting, the

temporally stated interest rate has then to be converted to interest expense per quintal.

Yet another element in the marketing cost table which is not self-explanatory is the cost of self-marketing. Self-marketing involves certain additional expenses in both actual and opportunity costs which are seldom included in the calculation of marketing cost. When self-marketing either to the Poona or the Bombay market the Poona farmer has two options. He can either undertake the maximum responsibility of marketing upon himself and send his personal agent/agents (employees) with every consignment of fruit, or he allocates the responsibility of safe shipment of the fruit chiefly upon the representative or "agent" of the trucking agency, sending his personal agent to the market much less often. The responsibility of collecting accounts slips and payments falls either upon the farmer's own agent or upon the trucking agency's representative, should the trucking agency have assumed that responsibility. In the latter instance the trucking agency appends an additional charge of 1.5 to 2 per cent of the wholesale price for these extra services rendered. The farmer's agent's expenses in self-marketing have been taken as the minimal cost of travelling on the public transportation system, one or two cups of tea, one very inexpensive meal (depending upon the distance of the market and time involved), plus the market value of the cheapest male field-labour. Of the two alternative approaches to self-marketing the assumption here is

that the farmer selects the less expensive mode.

Whichever of the two approaches described above is adopted by the farmer for meaningful self-marketing the farmer must make at least a few personal visits to the markets he is using to meet the commission agents and to keep in touch with marketing realities. The "personal" visits may be either those of the farmer himself or of some responsible adult male member of the farmer's family who may be familiar with the operations of fruit cultivation and marketing. The number of such personal visits depend upon the length of the fruit season and the expected value of that fruit. The opportunity cost of such labour belonging to the managerial category is likely to be significantly higher than the cost of field labour and has been taken to be twice the value of field labour in this study.

Other than those explained in the above paragraphs the remaining items of marketing cost and the rates of these charges are self-explicit in the relevant Tables.

4.5.23 THE ESTIMATED COSTS OF SELF-MARKETING

The Tables 4.8, 4.14, 4.19, 4.25, 4.30 and 4.36 are for costs of marketing, middlemen's costs, costs of retailing and margins, price spread and the net returns received by the fruit cultivators and each of the market functionaries. In each case the average total output per farmer for an average sized orchard for that fruit is calculated. The cost of watching and plucking is calculated per acre for the

length of the season and converted into a per quintal expense. Interest on marketing capital is calculated at the interest rate charged by middlemen who provide a very large percentage (over 80 per cent) of the marketing capital used by the Poona district fruit growers. This charge is two per cent per month. The period of loan varies with the length of the season, beginning a couple of months before the season begins and ending a little after the season ends. Estimated expenses involved in self-marketing is analysed in two sections. These estimates give an idea of the broad dimensions involved in self-marketing. In the first, the costs of self-marketing are estimated under conditions in which the farmer accepts the maximum responsibility of marketing operations upon himself and does not use the additional services of the trucking agency. This method of self-marketing requires the farmer to send his own agent to the market with each consignment. Because of the obvious higher opportunity costs in this method (for most cases) it is not used as commonly as the other method of self-marketing. In the second method of self-marketing the delivery of consignment to the market and the collection of payments for the produce from commission agents is the responsibility of the trucking agency. This method is especially common when the distance between the fruit producing village and the market of destination is more than twenty miles. The trucking agency's charge for the additional services is two per cent of the wholesale price. In the estimated costs of self-

marketing are also included intra-State and in-city transportation and the cost of an inexpensive meal and a cup of tea (at 1978 prices). The in-city bus travel is calculated at fifty paise, a cup of tea is at thirty paise, meals and tea for farmer's agent is at Rs. 1.80 and for the farmer himself it is calculated at Rs. 5 per visit. The opportunity cost of labour is calculated at Rs. 5 a day for the farmer's agent (the same rate as that for hired casual labour in 1978), and that of the farmer himself is twice that at Rs.10 a day. The details regarding the costs of self-marketing have been added to the Appendix to this chapter. The opportunity cost of labour used in the following costs of self-marketing are the lesser cost of the cost of marketing through trucking agency and full-responsibility self-marketing.

4.5.24 ANALYSIS OF MARKETING COSTS, MARKET MARGINS AND THE PRICE SPREAD FOR ORANGES GROWN IN THE POONA DISTRICT

The marketing costs for Poona oranges are detailed in Table 4.8. The two of the most important markets to which Poona farmers send their oranges are the Poona and Bombay markets. Costs of marketing are higher to the Bombay than to the Poona market, first, because of the higher charges at the then unregulated fruit section at the Bombay market. Another reason for higher costs to the Bombay market is because of the additional care and packing materials used for oranges intended for that market (oranges are packed

Table 4.8 : Marketing Cost of Orange Cultivators in the Selected Sample (1978-79)

I. Fruit: ORANGE :

Average Wholesale Price in Poona (1977-78): Rs.177/Quintal; Bombay Rs.204/Quintal
and Average Retail Price in Poona (1977-78): Rs.352.50/Quintal; Bombay Rs.406/Quintal

Item	Poona		Bombay	
	Rates	Charges Rs. P.	Rates	Charges Rs. P.
PART A : Costs and Charges at the Market Yard				
1. Commission	@ 7%	12.39	@ 10%	20.40
2. Weighment and Counting	@ Rs.0.05/Pati of 6-8 kg	0.71	@ Rs.0.10/Pati of 6-8 kg	1.42
3. Hamali	"	0.71	@ Rs.0.15/Pati of 6-8 kg	2.13
4. Refilling	"	0.71	-	-
5. Postage		0.45		0.75
Cumulative Total I		14.97		24.70
PART B : Pre-market Costs of Marketing Per Quintal				
6. Local Transport	Rs.0.65/40 kgs or Rs.0.12 per 3 doz pati of 6-8 kg	1.67		1.67
7. Packing (Labour and Material)	Khoka (40 kg)	14.00		17.00
8. Watching and Harvesting		10.42		10.42
Cumulative Total II		41.06		53.79
PART C :				
ONE : Village of Origin: TALEGAON DHAMDHERE (Shirur Taluka)				
9. Octroi and Transport	@ Rs.0.40/Pati of 6-8 kgs	5.71	@ Rs.0.60/Pati of 6-8 kgs	8.57
Cumulative Total III		46.77		62.36
10. Interest on Marketing Capital	@ 2% per month for 7 months	0.08	@ 2% per month for 7 months	0.12
Cumulative Total IV		46.85		62.48
11. Cost of Self-Marketing		5.62		9.05
GRAND TOTAL (TALEGAON DHAMDHERE)		52.47		71.53
TWO : Village of Origin: SHIKRAPUR (Shirur Taluka)				
9. Octroi and Transport	@ Rs.2.20/Khoka	5.50	@ Rs.0.60/Pati	8.00
Cumulative Total III		46.56		61.79
10. Interest on Marketing Capital	@ 2% per month	0.08	@ 2% per month	0.11
Cumulative Total IV		46.64		61.90
11. Cost of Self-Marketing		5.48		8.97
GRAND TOTAL (SHIKRAPUR)		52.12		70.87
THREE: Village of Origin: RANJANGAON GANAPATI (Shirur Taluka)				
9. Octroi and Transport	@ Rs.0.60/Pati of 6-8 kgs	8.57	@ Rs.0.90/Pati of 6-8 kgs	12.58
Cumulative Total III		49.63		66.37
10. Interest on Marketing Capital	@ 2% per month	0.49	@ 2% per month	0.12
Cumulative Total IV		49.72		66.49
11. Cost of Self-Marketing		6.25		8.77
GRAND TOTAL (RANJANGAON GANAPATI)		55.97		75.26

Table 4.9 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Orange to the Poona Market

Costs and Returns Per Dozen	Rs. P. (Percentage of Retail Price)	
Average Retail Price	7.05	(100.00)
Wholesale Price (or the price received by the cultivator)	3.54	(50.21)
<u>i) The Cultivator's Net Returns</u>		
Price Received by the cultivator	3.54	(50.21)
<u>Less:</u>		
(a) Marketing Cost	1.08	(15.32)
<u>Equals:</u> Net Returns to the cultivator :	2.46	(34.89)
<u>Less:</u> Cost of cultivation	0.84	(11.91)
<u>Equals:</u> Income to the cultivator	1.62	(22.98)
<u>ii) The Retailers Net Returns</u>		
Retail Price	7.05	(100.00)
<u>Less:</u>		
(a) Purchase Price	3.54	(50.21)
(b) Cost of Retailing	1.99	(28.23)
(c) Average Fruit Loss as percentage of retail price @ 10.45%	0.74	(10.50)
<u>Equals:</u> Retailers Net Returns	0.78	(11.06)

Table 4.10 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Orange to the Bombay Market

Costs and Returns Per Dozen	Rs. P.	(Percentage of Retail Price)
Average Retail Price	8.10	(100.00)
Wholesale Price (or the price received by the cultivator)	4.08	(50.37)
f) <u>The Cultivator's Net Returns</u>		
Price Received by the Cultivator	4.08	(50.37)
<u>Less:</u>		
(a) Marketing Cost	1.47	(18.15)
Equals: NET RETURNS OF CULTIVATOR: 2.61 (32.22)		
<u>Less:</u>		
(b) Cost of Cultivation	0.84	(10.37)
<u>Equals</u>		
Income of the Cultivator	1.77	(21.85)

Table 4.11 : Market Margins, Price Spread and Net Returns:
Sale of Orange Through the Khotidar to the
Poona Market

Costs and Returns Per Dozen	Rs. P.	(Percentage of Retail Price)
Retail Price	7.05	(100.00)
Wholesale Price (or the price received by the intermediary)	3.54 (3.60 to 3.70)	(51.63) (51.06 to 52.48)
<u>i) The Cultivator's Net Returns</u>		
Average Price received by the cultivator :	2.20	(31.21)
<u>Less:</u>		
(a) Marketing Cost	-	-
(b) Cost of cultivation	0.84	(11.91)
<u>Equals:</u>		
The Cultivator's Income:	1.36	(19.29)
<u>ii) Price Received by the Intermediary (Khotidar)</u>		
	3.64	(51.63)
<u>Less:</u>		
(a) Purchase Price	2.20	(31.21)
(b) Cost of Marketing	0.86	(12.20)
<u>Equals</u>		
The Intermediary's Income :	0.58	(8.23)
	Or, (15.93% of the wholesale price)	

Table 4.12 : The Khotidar's Cost of Marketing of Orange

	Poona	Bombay
1. Costs at the market @ wholesale price of Rs.182/quintal in Poona, Rs.210/quintal in Bombay	15.32	25.30
2. Watching and Harvesting (75%)	7.82	7.82
3. Local transport 0.50/40kg	1.25	1.25
4. Packing 40% recovery in Poona 0.60/Khoti 30% recovery in Bombay 0.70/Khoti	12.00	14.87
5. Transport (a) TD Rs.65	4.33	7.33
(b) Sh Rs.60	4.00	6.67
(c) RG Rs.100	6.67	8.00
	40.72	56.57
	40.39	55.91
	43.06	57.24
	or 0.81 to 0.86 a dozen	1.12 to 1.14 a dozen

Table 4.13 : Examples of Costs of Retailing*

I. Push Cart

Push cart rental @ Rs.1/day, or approximately Rs.30 p.m. (including licence)

Labour wage rate @ Rs. 150 per month.

(Average capacity of cart: 60-90 kgs.,
On average daily purchases 35 kgs.)

This mode of retailing is used mostly for banana. Few of these hawkers are licensed. At the above rate daily turnover is 35 kgs., and the monthly turnover is 1050 kgs. The cost of retailing is about Rs. 180 for 1050 kgs. The cost per quintal is Rs.17.14.

II. Fruit Retail Stall

Rent Rs. 180 a month (3 metre x 3 metre space)	}	Rs.590/month (plus purchase price of fruit and monthly spoilage)
Electricity Rs. 40 a month		
Labour Rs. 300 a month		
Maintenance and Decorations, etc., Rs. 40 a month		
Local transportation Rs.30 a month		
Interest on capital @ 18% per annum (or 1.5% p.m.)		Rs. 8.85

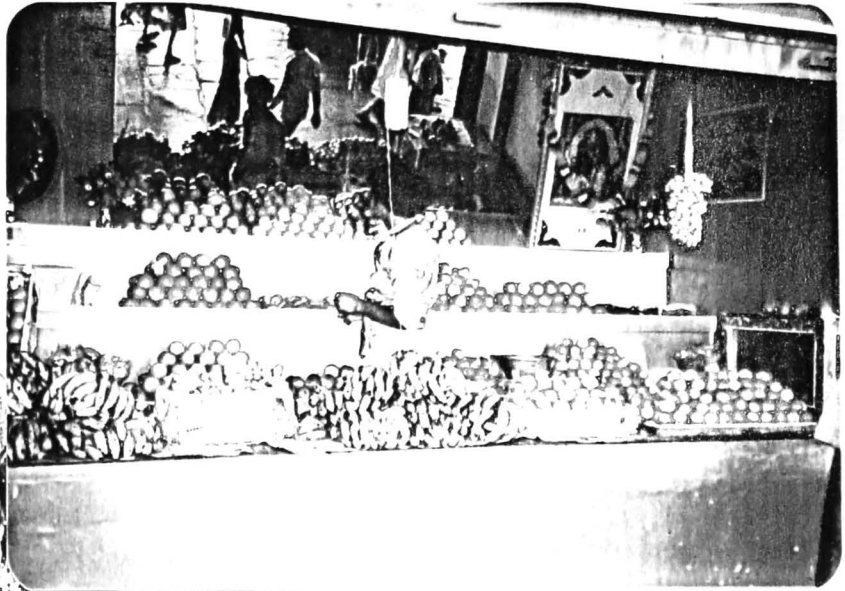
On an average, purchase may be taken as 30 kgs. on every alternate day, to make a total monthly purchase of all fruits (15 purchases in one month) of 4.5 quintals. Thus, for an average representative retailer, the cost of retailing is about Rs.133.08 per quintal, on an average for any fruit handled by that stall holder.

III. Basket Hawkers (Capacity 20 kgs.)

Transportation @ Rs.0.40 bus fare each way, for 25 days in a month	= Rs. 20.00/month
Labour Rs.5/a day for 30 days	= Rs.150.00/month
Other expenses (basket, etc.)	= Rs. 10.00/month
	<u>Rs.180.00/month</u>

The basket hawker makes 25 trips to the market in 1 month, purchasing 20 kgs each time. Total monthly turnover is thus 500 kgs. Cost per kg. : Rs. 0.36.

* The addition to the cost of retailing caused by fruit loss and damage, both in city transit and in keeping, will be added to these costs in the calculation of market margins and net earnings of the retailers.



Small retailer



*Above: Larger retailers
Top: Prosperous retailer*



Female hawker selling bananas

in baskets for both markets). The cost of self-marketing is also higher to Bombay than to Poona. In Tables 4.9 and 4.10, the price spread and market margins to Poona and Bombay markets respectively, have been calculated. The cultivator's costs of marketing have been taken from Table 4.8 and converted to costs by the dozen.

When self-marketing, (Tables 4.9 and 4.10) the wholesale price is a little over 50 per cent of the retail price by the dozen at both Poona and Bombay. Of which after deductions of the costs of cultivation and marketing the farmer receives a net income, which is between 21.00 per cent and 23.00 per cent of the retail price for the fruit sent to both Poona and Bombay. Drawing comparative information for net returns to the orange farmers when marketing through khotidars (Table 4.11) one finds the farmer's net income to be only slightly lower than when self-marketing. Even this is not conclusive since the estimated costs of self-marketing included in Table 4.8 have been most conservative and include only the actual expenses of transportation and the actual and imputed costs of labour (depending upon whether it is hired or family labour). No allowances have been made for factors such as the botheration involved in self-marketing, which is often a significant reason why farmers choose to market through middlemen. This is possible because the khotidar is able to enjoy economies of scale in his costs of marketing (Table 4.12) as well as receive

slightly higher prices at the market (with the cooperation of the commission agents).

The net returns accruing to the khotidar is over 8 per cent of the retail price or close to 18 per cent of the wholesale price. Of course, given the risks involved in the khotidari business the higher percentage net returns are only to be expected. The very large volume of fruit handled by the khotidars account for their high per annum incomes.

Returning to Poona city scene and the retailer who is responsible for concluding the market channel, on the first instance it appears (from Table 4.9) that the retailer's margin is quite substantial at almost 50 per cent. However, once the costs of retailing (from Table 4.13) and spoilage (from Table 5.13 in the next chapter) are accounted for, the retailer's net return reduces to about 11 per cent of the retail price.

4.5.25 ANALYSIS OF MARKETING COSTS, MARKET MARGINS AND THE PRICE SPREAD FOR MOSAMBI GROWN IN POONA

Much as in the case of orange marketing costs are higher for Mosambi sent to the Bombay market than to Poona. Mosambi fruit are packed in gonis (or jute sacks) or large sturdy baskets (less often) for the Poona market and generally baskets for the Bombay market. The higher costs of marketing at all levels (market costs, packing, transportation and self-marketing) are somewhat counter-balanced by

Table 4.14 : Marketing Costs of Mosambi Cultivators in the Selected Sample (1978-79)

II. Fruit: MOSAMBI

Average Wholesale Price in Poona (1977-78): Rs.174/Quintal; Bombay Rs.205/Quintal
and Average Retail Price in Poona (1977-78): Rs.336.50/Quintal; Bombay Rs.395/Quintal

	Poona		Bombay	
	Rates	Charges Rs. P.	Rates	Charges Rs. P.
<u>PART A : Costs and Charges at the Market Yard</u>				
1. Commission	@ 7% of the wholesale price	12.18	@ 10% of the wholesale price	20.50
2. Weighment and Counting	@ Rs.0.05/Pati of 6-8 kgs	0.71	@ Rs.0.10/Pati of 6-8 kgs	1.42
3. Hamali	@ Rs.0.05/Pati of 6-8 kgs	0.71	@ Rs.0.15/Pati of 6-8 kgs	2.13
4. Refilling	@ Rs.0.05/Pati of 6-8 kgs	0.71	-	-
5. Postage		0.45	@ Rs.0.45/60 kg	0.75
Cum-Total I		14.76		24.80
<u>PART B : Pre-market Costs of Marketing Per Quintal</u>				
6. Local Transport	@ Rs.0.12/3 dozen Pati of 6-8 kgs	1-67		1-67
7. Packing (Labour and Material) *	@ Rs.0.90/3 dozen Pati of 6-8 kgs	12.86		12.86
8. Watching and Harvesting		11.47		11.47
Cum-Total II		40.76		50.80
<u>PART C :</u>				
Villages of Origin: SAKURDE/BELSAR (Purandhar Taluka)				
9. Octroi and Transportation	@ Rs.0.60/Pati of 3 dozen (6-8 kgs)	8.57	@ Rs.0.80/3 dozen Pati of 6-8 kgs	11.43
Cum-Total III		49.33		62.23
10. Interest on Marketing Capital	@ 2% per month or 0.2% per quintal	0.10		0.12
Cum-Total IV		49.43		62.35
11. Cost of Self-Marketing		7.33		10.04
GRAND TOTAL (SAKURDE/BELSAR)		56.75		72.39

* Of this, the material cost is Rs.0.60 and the cost of labour is Rs. 0.30.

Table 4.15 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Mosambi to the Poona Market

Costs and Returns per Dozen	Rs. P.	Percentage of Retail Price
Average Retail Price	6.73	(100.00)
Wholesale Price (or the price received by the cultivator)	3.48	(51.71)
<u>1) The Cultivator's Net Returns</u>		
Price Received by the Cultivator	3.48	
<u>Less:</u>		
(a) Marketing Cost	1.14	(15.70)
EQUALS CULTIVATOR'S NET RETURNS: 2.34 (34.71)		
(b) Cost of Cultivation	0.86	(12.78)
<u>Equals:</u>		
Income of the Cultivator	1.48	(21.99)
<u>ii) The Retailers Net Returns</u>		
Retail Price	6.73	(100.00)
<u>Less:</u>		
(a) Purchase Price	3.48	(51.71)
(b) Cost of Retailing	1.99	(29.57)
(c) Average Fruit Loss as Percentage of Retail Price @ 8.00%	0.54	(8.02)
<u>Equals</u>		
Retailers Net Returns	0.72	(10.70)

Table 4.16 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Mosambi to the Bombay Market

Costs and Returns Per Dozen	Rs. P.	Percentage of Retail Price
Average Retail Price	7.90	(100.00)
Wholesale Price (or the Price Received by the Cultivator)	4.10	(51.90)
<u>1) The Cultivator's Net Returns</u>		
Price Received by the Cultivator	4.10	(51.90)
<u>Less:</u>		
(a) Marketing Cost	1.45	(18.35)
(b) Cost of Cultivation	0.86	(10.89)
<u>Equals</u>		
Income of the Cultivator	1.79	(22.66)

**Table 4.17 : Market Margins, Price Spread and Net Returns:
Sale of Mosambi Through the Khotidar (Poona)**

Costs and Returns Per Dozen	Rs. P.	Percentage of Retail Price
Retail Price	6.73	(100.00)
Wholesale Price (or the Price received by the the Intermediary)	3.60 (3.55 to 3.65)	(53.49)
Price Received by the Cultivator	2.10	(31.20)
1) <u>The Cultivator's Net Returns:</u>		
Average ^{OR} Price Received by the Cultivator	2.10	(31.20)
<u>Less:</u>		
(a) Marketing Cost	-	-
(b) Cost of Cultivation	0.86	(12.78)
<u>Equals:</u>		
The Cultivator's	1.24	(18.42)
ii) Price Received by the Intermediary (Khotidar)		
	3.60	(53.49)
<u>Less:</u>		
(a) Purchase Price	2.10	(31.20)
(b) Cost of Marketing	0.83	(12.33)
<u>Equals:</u>		
The Intermediary's (<u>Khotidar</u>) Net Returns	0.67 (or 18.61% of the wholesale price)	(9.96)

Table 4.18 : The Khotidar's Costs of Marketing for Mosambi

	(Per Quintal)	
	From Sakurde/Belsar To	
	Poona Market (@ wholesale Price Rs.180/ Qtl.)	Bombay Market (@ Wholesale Price Rs.215/Qtl.)
	Rs. P.	Rs. P.
1. Costs at the market	15.18	26.30
2. Local transport (@ Rs.0.08/3 dozen Pati of 6-8 kgs)	1.14	1.14
3. Packing (Labour and material @ Rs.0.70/3 dozen Pati of 6-8 kgs)	10.00	10.00
4. Transport :	6.67	10.00
Poona : @ Rs.100 per Truck of 1500 kgs (850-950 3 dozen Patis)		
Bombay: @ Rs.150 per Truck		
5. Watching and Harvesting (about 75% of farmer's costs)	8.60	8.60
Total	41.59/Qtl. or 0.83/Dozen	56.04/Qtl. 1.12/Dozen

the higher wholesale prices that the greater fruit demand at Bombay is able to assure. The marketing costs for mosambi are demonstrated in Table 4.14, and the explanations to the Table follow after the Table. In the calculation of price spreads and market margins the per quintal costs of marketing are converted into per dozen prices.

Tables 4.15 and 4.16 describe the market spreads and the consequent net income of the cultivator for fruits sent to Poona and Bombay respectively. These Tables illustrate instances of self-marketing by the mosambi growers of Poona district. The net income received by the cultivator after the costs of cultivation and marketing have been deducted are 21.00 per cent of the retail price for Poona and 22.00 per cent for Bombay. The cultivator's net income when marketing through a khotidar is 15.3 per cent of the retail price (Table 4.17) at Poona retail prices. While the farmer's net income are a little lower in the immediate rupee value when he sells his produce to the khotidar than when he sends them directly to the market, the difference is accounted for by the risks and bother that the farmer transfers to the khotidar.

For his marketing enterprise the khotidar derives a net return of 9.96 per cent of the retail price (or 18.61 per cent of the wholesale price). When the dozens add up to constitute the total volume of mosambi handled by him in any season, the net income is quite substantial. The khotidar's costs of marketing are outlined on Table 4.18.

These, along with the higher price received explain how the khotidar is able to maintain such a sizable net returns.

The retailer's margin for mosambi at about 48 per cent is almost equal to that for orange. However, the cost of retailing alone is 29.57 per cent of the retail price. When fruit loss is also accounted for, the retailer receives a net return of 10.70 per cent of the retail price at Poona. The stall holder's costs of retailing may be read from Table 4.14 and average fruit loss as a percentage of the retail price from Table 5.13 in the next chapter.

4.5.26 ANALYSIS OF MARKETING COSTS, MARKET MARGINS AND THE PRICE SPREAD FOR GUAVA GROWN IN THE POONA DISTRICT

The costs of marketing to Poona and Bombay can be read from Table 4.19. Along with these, marketing costs of direct retail sale at the village level (from Talegaon Dhamdhere) have also been demonstrated. The marketing costs of local retail at the village is a little less than half the cost of marketing the guava at Poona and even a smaller percentage of the cost of marketing to Bombay. The net incomes, however, are not proportionately higher in local sale. This is illustrated in the description of the price spread, market margins and net income in Tables 4.20, 4.21, 4.22 and 4.23. Table 4.19 on marketing costs is followed by comments explaining certain items of the Table.

The market margins and market costs (in Tables 4.20 and 4.21) are such that the farmer accrues a net return of

Table 4.19 : Marketing Costs of Guáva Cultivators in the Selected Sample (1978-79)

III. Fruit: GUAVA

Average Wholesale Price in Poona (1977-78): Rs.76.50/Quintal; Bombay : Rs. 88.00/Quintal
 and Average Retail Price in Poona (1977-78): Rs.140/Quintal; Bombay : Rs.160.00/Quintal

Item	Poona		Bombay	
	Rates	Charges Rs. P.	Rates	Charges Rs.P.
<u>PART A: Costs and Charges at the Market Yard</u>				
1. Commission	@ 7%	5.35	@ 10%	8.80
2. Weighment and Counting	@ Rs.0.05 per pati (6-8 kgs)	0.71	@ Rs.0.10 per pati (6-8 kgs)	1.42
3. Hamali	@ Rs.0.05 per pati	0.71	@ Rs.0.15 per pati	2.13
4. Refilling	@ Rs.0.05 per pati	0.71	-	-
5. Postage	@ Rs.0.45/Quintal	0.45	@ Rs.0.75/Quintal	0.75
Cum-Total I		7.93		13.10
<u>PART B: Pre-market Costs of Marketing Per Quintal</u>				
6. Local Transport	@ Rs.0.20/20 kg hara	1.00	@ Rs.0.20/20 kg hara	1.00
7. Packing (Labour and Material)	@ Rs.0.35/3 doz. Pati (3-6 kgs)	5.00	@ Rs.0.40/3 doz. Pati (6-8 kgs)	5.71
8. Watching and Harvesting	@ Rs.4.65/Quintal	4.65	@ Rs.4.65/Quintal	4.65
Cum-Total II		18.58		24.46
<u>PART C:</u>				
<u>One: Village of Origin: Saswad or Dive (Purandhar Taluka)</u>				
9. Octroi and Transportation	@ Rs.2.60/hara of about 40 kgs	6.50	@ Rs.0.60/Pati of 6-8 kgs	8.57
Cum-Total III		25.08		33.03
10. Interest on Marketing Capital	@ 2% per month for 6 months or 0.22% per qtl.	0.05	@ 2% per month Simple Interest for 6 months or 0.22% per qtl.	0.07
11. Cost of Self-Marketing		3.71		5.70
GRAND TOTAL (DIVE)		28.84		38.80
<u>TWO: Village of Origin: Baner (Haveli Taluka)</u>				
9. Octroi and Transportation	@ Rs.1.00/Hara of 20 kgs	5.00	Not used at all.	-
Cum-Total III		23.58		-
10. Interest on Marketing Capital	@ 2% per month Simple Interest	0.05	-	-
11. Cost of Self-Marketing		3.60		-
GRAND TOTAL (BANER)		27.23		-
<u>THREE: Village of Origin: TALEGAON DHAMDHERE (Shirur Taluka)</u>				
9. Bicycle rent and material (8.00) and Labour (5.00)	@ Rs.8.00/Qtl.) + Rs.5.00/Qtl.)	13.00		
10. Interest on Marketing Capital		0.03		
GRAND TOTAL (TALEGAON DHAMDHERE)		13.03	Average Price Received	Rs.56/Qtl.

Table 4.20 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Guava to the Poona Market

Costs and Returns Per Dozen	Rs. P.	Percentage of Retail Price
Average Retail Price	2.80	(100.00)
Wholesale Price (or the price received by the cultivator)	1.53	(54.64)
<u>i) The cultivator's Net Returns:</u>		
Price Received by the Cultivator	1.53	(54.64)
<u>Less:</u>		
(a) Marketing Cost	0.56	(19.82)
Equals: THE CULTIVATOR'S NET RETURNS:	0.97	(34.64)
<u>Less:</u>		
(b) Cost of cultivation	0.62	(22.14)
<u>Equals:</u>		
Income of the Cultivator	0.35	(12.50)
<u>ii) The Retailers Net Returns:</u>		
Retail Price	2.80	(100.00)
<u>Less:</u>		
(a) Purchase Price	1.53	(54.64)
(b) Cost of retailing	0.72	(25.71)
(c) Average fruit loss as percentage of retail price @ 6.2%	0.14	(5.00)
<u>Equals:</u>		
Retailers Net Returns	0.41	(14.64)

Table 4.21 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Guava to the Bombay Market

Costs and Returns Per Dozen	Rs. P.	Percentage of Retail Price
Average Retail Price	3.20	(100.00)
Wholesale Price (or the price received by the cultivator)	1.76	(55.00)
<u>1) The Cultivator's Net Returns:</u>		
Price Received by the Cultivator	1.76	(55.00)
<u>Less:</u>		
(a) Marketing Cost	0.78	(24.37)
EQUALS: CULTIVATOR'S NET RETURNS: 0.98 (30.62)		
(b) Cost of Cultivation	0.62	(19.37)
<u>Equals:</u>		
Income of the Cultivator	0.36	(11.25)

Table 4.22 : Market Margins, Price Spread and Net Returns:
Sale of Guava Through a Khotidar

Costs and Returns Per Dozen	Rs. P.	Percentage of Retail Price
Retail Price	2.80	
Wholesale Price (1.55 to 1.65) (or the price received by the intermediary)	1.60	(57.14)
Price Received by the Cultivator	0.96	(34.29)
i) <u>The Cultivator's Net Returns:</u>		
Average Price ^{OR} Received by the Cultivator	0.96	(34.29)
Less:		
(a) Marketing cost	-	-
(b) Cost of cultivation	0.60	(21.43)
Equals:		
The Cultivator's Income	0.36	(12.86)
ii) <u>Price Received by the Intermediary (Khotidar)</u>		
	1.60	(57.14)
Less :		
(a) Purchase price	0.96	(34.29)
(b) Cost of marketing	0.44	(15.71)
Equals:		
The Intermediary's Net Returns	0.20	(7.14)
	or (12.5% of the wholesale price)	

Table 4.23 : Market Margins, Price Spread and Net Returns:
Local (Village) Retail Sale of Guava

Costs and Returns Per Dozen	Rs. P.	Percentage of Retail Price
Retail Price	1.12	(100.00)
Price Received by the Cultivator		
i) <u>The Cultivator's Net Returns:</u>		
Price Received by the Cultivator	1.12	(100.00)
<u>Less:</u>		
(a) Marketing Cost	0.26	(23.21)
<small>EQUALS: CULTIVATOR'S NET RETURNS: 0.86 (76.79)</small>		
(b) Cost of Cultivation	0.62	(55.36)
<u>Equals:</u>		
The Cultivator's Income:	0.24	(21.43)

Table 4.24 : Per Quintal Cost of Marketing of the Khotidar
to the Poona Market

Item	Amount Rs. P.
Costs at the Market	7.93
Local transport	0.80
Watching and Harvesting	3.49
Packing @ Rs.0.30/3 dozen (6-8 kgs)	4.29
Transport from Dive	5.67
Total cost	22.18/Quintal

between only 11.25 per cent to 13.21 per cent of the retail price when self-marketing to either the Poona or the Bombay market. Sale through an intermediary (Table 4.22) fetches the farmer a net income of 12.86 per cent which is within the same range as through self-marketing. Local sale fetches the farmer a higher percentage of the retail price but a lower actual net income.

The farmer's share in consumer's rupee for guava is between Rs.0.54 and Rs. 0.55 when the farmer markets his own produce, and sends it to Bombay or Poona. When the farmer sells guava locally in or around his village he receives the full rupee, but his net earnings are only Rs.0.24 per dozen than the Rs.0.34 to Rs.0.37 that self-marketing to a larger market can fetch. The farmer fares no worse when he sells to the khotidar than when sells at Poona or Bombay, earning Rs.0.36 per dozen guavas.

The khotidar faces lower costs of marketing because of his larger scale of operation (Table 4.24). He is also able to receive higher prices at the markets as commission agents give preferential treatment to larger suppliers' produce in selecting the time of sale and the suggested price for the tender system. The khotidar earns a net return of Rs.0.20 per dozen guavas, which is 7.14 per cent of the retail and 12.5 per cent of the wholesale price.

The retailer's 45 per cent margin is spread over the cost of retailing (25.71 per cent) and the fruit loss (5 per cent). This leaves the retailer with a 14.64 per cent (of

Commission Agents' Slip to
Guava Grower from Saswad
(1986)

बाजार समिती

[Subject to Poona Jurisdiction]

कृषि उत्पन्न
बाजार समिती, पुणे.

हिंदोब पट्टी

No 4553

Raosaheb Bhausaheb Anpat

रावसाहेब भाऊसाहेब अनपट

कूट मर्चेट आणि कमिशन एजेंट * पाळा नं. ३३०/१८६
श्री छत्रपती शिवाजी मार्केट बार्ड, मुलटेकडी, पुणे ३७.

Resi ४६७०३१
P. P. ६३९०१

तारीख ८/१०/१९८६

मालकान्याचे नाव श्री. चं. योगेश्वर जि. राज्य
मालाचा प्रकार लरेदीदाराचे नाव का.प.प्र.
शेराय संख्या

क्रमांक	परिमाण	वजन मापे	दर	राशे	दंडे	राशे	दंडे
१	लाट			४ = ००		बाटन	० = ९८
१	"			२ = ००		नोन्लाई/बागाई	० = १५
१	इड			८ = ००		भराई	० = ३०
						चिपनवारी	
						मो. भाडे/वकात	
						हमाली	
						दर खर्च	
						अ)	
						ब)	
						क)	
						एकूण	०१ = ४३
						एकूण	१२ = ५८
						सर्व वजा जाता	
						शिल्लक रक्कम	

हिंदोबपट्टीत नमूद केल्याप्रमाणे अक्षरी राशे रोख

पोहोचणे/वाटचिणे.

रक्कम थिळावेबद्दलची सही

तारीख

भागील शिल्लक

भावरक

एकूण

विक्री

अक्षर शिल्लक

भाडल्याची सही

रा. भा. अनपट

the retail price) net return. The retailers for guava are mostly basket hawkers. The Rs. 0.41 per dozen net income, however, ends in relatively small incomes when the daily turnover of these hawkers is compared with stall holders or khotidars.

4.5.27 ANALYSIS OF THE MARKETING COSTS, PRICE SPREADS AND MARKET MARGINS FOR FIG GROWN IN THE POONA DISTRICT

The marketing costs for fig growers sending fruit to the Poona and Bombay markets can be found in Tables 4.25 and 4.26. The costs are determined by such factors as the distance of the village from the market, the economies of scale under which the particular trucking agency operates, costs of packing and charges at the market. The interest on the marketing capital is the same for fig as it is for any other fruit, more or less. It is the interest charged by the middlemen from whom orchard growers receive the loan of their marketing capital. The cost of marketing is higher at the Bombay market than at the Poona market. This is because, apart from the fact that Bombay prices are higher than those at Poona (and consequently the commission charged is also higher), the charges at the Bombay market were higher as well. The method of computation of each charge is explained either on the Table itself or in the pages of explanation that follow the table.

The price spread for sale to the Poona and Bombay markets and when the services of the middleman ^{are} used are

^

Table 4.25 : Marketing Costs for Fig Cultivators in the Selected Sample (1978-79)

IV. Fruit : FIG.

Average Wholesale Price in Poona (1977-78): Rs.332/Qt1.; Bombay Rs. 382/Qt1.
and Average Retail Price in Poona (1977-78): Rs.601/Qt1.; Bombay Rs. 690/Qt1.

[1 basket of figs (bungl) = 3 kgs]

Item	Poona (Rs.287/Qt1.)		Bombay (Rs.305/Qt1.)	
	Rates	Charges	Rates	Charges
<u>PART A : Costs and Charges at the Market Yard</u>				
1. Commission	@ 7% of wholesale rate	23.24	@ 10% of wholesale price	38.20
2. Weighment and Counting	@ Rs.0.05 per 3 kg daag	1.67	@ Rs.0.15 per 3 kg bungl	5.00
3. Hamali	@ Rs.0.10 per 3 kg pati	3.33	@ Rs.0.10 per 3 kg	3.33
4. Refilling	-	-	-	-
5. Postage	@ Rs.0.45 for every 2 shipments at least	0.45	2 times for/Qt1.	0.90
6. Vigatwari and Others	@ Rs.0.01 per kg	1.00	-	1.00
Cum-Total I		29.69		48.43
<u>PART B : Pre-market Costs of Marketing Per Quintal</u>				
7. Local Transport	@ Rs.0.05/3 kg	1.67	@ Rs.0.05/3 kg	1.67
8. Packing (Labour and Materials)	@ Rs.0.65/3 kg	21.67	@ Rs.0.70/3 kg	23.33
9. Watching and Plucking	@ Rs.4.00/32 qtls.	12.50	@ Rs.4.00/32 qtls.	12.50
Cum-Total II		65.53		85.93
<u>PART C :</u>				
One : Village of Origin: Dive (Purandhar Taluka)				
10. Octroi and Transportation	@ Rs.0.50/3 kg	16.67	@ Rs.0.60/3 kg	20.00
Cum-Total III		82.20		105.93
11. Interest on Marketing Capital for 3 month loan	@ 2% per month Simple Interest or 0.76% per quintal	0.62	@ 2% per month Simple Interest	0.80
Cum-Total IV		82.82		106.73
12. Cost of Self-Marketing		15.27		22.46
GRAND TOTAL (DIVE)		98.09		129.19
Two : Village of Origin: Velu (Bhor Taluka)				
10. Octroi and Transportation	@ Rs.0.06/kg	6.00	Not sent to Bombay at all	
Cum-Total III		71.53		
11. Interest on Marketing Capital	@ 2% per month or 0.76% per quintal	0.54		
Cum-Total IV		72.07		
12. Cost of Self-Marketing		14.29		
GRAND TOTAL (VELU)		86.36		

Table 4.26 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Fig to the Poona Market

Costs and Returns Per kg	Rs. P.	Percentage of Retail Price
Average Retail Price	6.01	(100.00)
Wholesale Price (or the price received by the cultivator)	3.32	(55.24)
<u>i) The Cultivator's Net Returns:</u>		
Price Received by the Cultivator	3.32	(55.24)
<u>Less:</u>		
(a) Marketing Cost EQUALS: CULTIVATOR'S NET RETURNS: 2.40 (72.29)	0.92	(15.31)
<u>Less:</u>		
(b) Cost of Cultivation	1.32	(21.96)
<u>Equals:</u>		
Income of the Cultivator	1.08	(17.97)
<u>ii) The Retailers Net Returns:</u>		
Retail Price	6.01	(100.00)
<u>Less:</u>		
(a) Purchase Price	3.32	(55.24)
(b) Cost of Retailing	1.33	(22.13)
(b) Average fruit loss as percentage of retail price @ 11.8%	0.71	(11.81)
<u>Equals:</u>		
Retailers Net Returns	0.65 (or 19.58% of the wholesale price)	(10.82)

Table 4.27 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Fig to the Bombay Market

	Rs. P.	Percentage of Retail Price
Average Retail Price	6.90	(100.00)
Wholesale Price (or the price received by the cultivator)	3.82	(55.36)
<u>i) The Cultivator's Net Returns</u>		
Price Received by the Cultivator	3.82	(55.36)
<u>LESS:</u>		
(a) Marketing cost <small>EQUALS: CULTIVATOR'S NET RETURNS: 2.53 (36.67)</small>	1.29	(18.70)
(b) Cost of cultivation	1.32	(19.13)
<u>EQUALS:</u>		
∴ Income of the Cultivator	1.21	(17.54)

Table 4.28 : Market Margins, Price Spread and Net Returns:
Sale to the Vyapari or Trader (Poona Market)

Costs and Returns per kg	Rs. P.	Percentage of Retail Price
Retail Price	6.01	(100.00)
Wholesale Price (or the price received by the Intermediary)		
Price Received by the Cultivator	2.85	(47.42)
<u>1) The Cultivators' Net Returns</u>		
Average Price Received by the Cultivator	2.85	(47.42)
<u>LESS:</u>		
(a) Marketing cost	0.36	(5.99)
EQUALS: CULTIVATOR'S NET RETURNS : 2.49 (41.42)		
(b) Cost of cultivation	1.32	(21.96)
<u>EQUALS:</u>		
The cultivator's Income	1.17	(19.47)
<u>ii) Price Received by the Intermediary (Vyapari)</u>		
	<u>Poona</u>	<u>Bombay</u>
	3.48	4.00
	(57.90%)	(57.97%)
<u>LESS:</u>		
(a) Purchase Price	2.85	2.85
	(47.42%)	(41.30%)
(b) Cost of marketing	0.41	0.67
	(6.82%)	(9.71%)
<u>EQUALS:</u>		
The Intermediary's Net Returns	0.22	0.48
	(3.66%)	(6.96%)

(continued)

Table 4.28 : (continued)

Costs and Returns per kg	Rs. P.	Percentage of Retail Price
<u>Poona</u>		
iii) When the Vyapari sells directly through a Retail outlet		
<u>NET RETURNS OF THE VYAPARI</u>		
Price received by the Vyapari/ Retailer	6.01	(100.00)
<u>LESS:</u>		
(a) Purchase price	2.85 to 3.00	(47.42 to 49.92)
(b) Cost of marketing	0.41 (Dive) or 0.35 (Velu)	(6.82) (5.82)
(c) Cost of retailing	1.33	(22.13)
(d) Average fruit loss: 11.8% of retail price	0.71	(11.81)
<u>EQUALS:</u>		
Net Return of the Vyapari:		
From Dive to Pune	0.56 to 0.71	(9.32 to 11.81)
From Velu to Pune	0.62 to 0.77	(10.32 to 12.81)

Table 4.29 : The Vyapari's Costs of Marketing For Fig

To POONA MARKET

@ Poona Wholesale Price : Rs.348/Qtl.

PER QUINTAL

	<u>From Dive</u> Rs. P.		<u>From Velu</u> Rs. P.
Transportation @ Rs.50/500 kgs by autos	10.00	Transportation @ Rs.20/500 kgs	4.00
Cost at the market	30.81		30.81
	----- 40.81 -----		----- 34.81 -----

To BOMBAY MARKET

@ Bombay Wholesale Price : Rs.400/Qtl.

	<u>From Dive</u> Rs. P.
Transportation @ Rs.250/500 kgs	16.67
Costs at the market	50.23
	----- 66.90 -----

elaborated in Tables 4.26, 4.27 and 4.28, respectively. The cultivator receives around 55 per cent of the retail price when marketing his produce himself, and 47.41 per cent of the Poona retail price when selling to the vyapari.

Self-marketing does not give a ^{substantially} better deal to fig cultivators when the net income received by the cultivator through the alternative methods is compared (Tables 4.26, 4.27 and 4.28). The cultivator receives between 16.97 per cent and 18.96 per cent through self-marketing while net income when the services of the vyapari are used the cultivator nets Rs. 1.17 per dozen or 19.47 per cent of the Poona price. The vyapari nets between 3.66 per cent and 6.96 per cent of the retail price depending upon whether he markets to Poona or to Bombay. The intermediary's cost and returns are shown in Tables 4.28 and 4.29.

Of the 55 per cent of his sale price that the retailer pays for his purchase of fruit he nets about 10.82 per cent. Costs of retailing are 22.13 per cent of the retail price and fruit loss is around 11.8 per cent. The vyapari as retailer earns a net return of between 9.32 per cent and 12.81 per cent of the retail price, the returns being higher from Velu than from Dive. That would explain why vyaparis who function as retailers, tend to purchase fruit more often from Velu than from Dive.

4.5.28 ANALYSIS OF MARKETING COSTS, PRICE SPREADS AND MARKETING MARGINS FOR BANANA GROWN IN THE POONA DISTRICT

The costs of marketing banana grown in the Junnar taluka to the Poona and the Bombay markets are Rs. 20.88 and Rs. 23.71 per quintal respectively (Table 4.30). Between 17 per cent and 23 per cent of this is made up of costs at the market. The costs at the market for the regulated Poona market are at the lower end of this range. Watching and harvesting constitute around 30 per cent of the marketing costs, and octroi and transportation another 30 per cent or so. Each item on Table 4.30 is explained either on the table itself or in the explanatory remarks following the table.

Self-marketing (Tables 4.31 and 4.32) fetches the farmer a net income of between 9.77 per cent and 13.84 per cent of the retail price, Bombay market fetches a higher net income than the Poona market in spite of the higher costs of marketing at Bombay. These net income in rupee terms amount to between Rs. 0.95 and Rs. 1.01 per 10 kgs at Poona, and between Rs. 1.49 and Rs. 1.55 per 10 kgs at Bombay. The bagwan is able to give the cultivator a net income ranging between Rs. 1.03 and Rs. 1.78 per 10 kgs, usually about Rs. 1.28 per 10 kgs on an average. The bagwan's costs of marketing (Table 4.35) being lower than the cultivator's because of his economies of scale, enable the bagwan to give cultivators net returns comparable or better than when self-marketing.

Table 4.30 : Marketing Costs of the Banana Cultivators in the Selected Sample (1978-79)

V. Fruit : BANANA

Average Wholesale Price in Poona (1977-78): Rs.56.20/Quintal; Bombay Rs. 65/Quintal
and Average Retail Price in Poona (1977-78): Rs.97.20/Quintal; Bombay Rs.112/Quintal

	Poona		Bombay	
	Rates	Charges Rs. P.	Rates	Charges Rs. P.
<u>PART A : Costs and Charges at the Market Yard</u>				
1. Commission	@ 5%	2.80	@ 5%	3.25
2. Weighment and Counting	@ Rs.0.05/Quintal	0.05	}	2.40
3. Hamali	}	0.30		
4. Refilling				
5. Postage	-	0.45		
Cum-Total I		3.60		5.65
<u>PART B : Pre-market Costs of Marketing Per Quintal</u>				
6. Local Transport	@ Rs.0.05/10 kg	0.50		0.50
7. Loading	@ Rs.0.05/10 kg	0.50		0.50
8. Packing (Labour and Material)	-	-		-
9. Watching and Harvesting	-	6.42		6.42
Cum-Total II		11.02		13.07
<u>PART C :</u>				
<u>ONE : Village of Origin: OTUR (Junnar Taluka)</u>				
10. Octroi and Transportation	@ Rs.0.60/10 kg	6.00	@ Rs.0.75/10 kg	7.50
Cum-Total III		17.02		20.57
11. Interest on Marketing Capital	@ 2% per month for 12 months, or 0.095% per quintal	0.02		0.02
12. Cost of Self-Marketing		3.25		3.71
GRAND TOTAL (OTUR)		20.29		24.30
<u>TWO : Villages of Origin: RAJURI-ALE-BELHE (Junnar Taluka)</u>				
10. Octroi & Transportation	@ Rs.0.65/10 kg	6.50	@ Rs.0.70/10 kg	7.00
Cum-Total III		17.52		20.07
11. Interest on Marketing Capital	@ 2% per month for 12 months or 0.095% per quintal	0.02		0.02
12. Cost of Self-Marketing		3.34		3.62
GRAND TOTAL (RAJURI)		20.88		23.71

Table 4.31 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Banana to the Poona Market

Costs and Returns per 10 kgs	Rs. P.	Percentage of Retail Price
Average Retail Price	9.72	(100.00)
Wholesale Price (or the price received by the cultivator)	5.62	(57.82)
<u>1) The cultivator's Net Returns :</u>		
Price received by the cultivator	5.62	(57.82)
<u>LESS:</u>		
(a) Marketing cost EQUALS: CULTIVATOR'S NET RETURNS: 356(36.62)	2.06	(21.19)
<u>LESS:</u>		
(b) Cost of cultivation	2.58	(26.54)
<u>EQUALS:</u>		
Income of the Cultivator	0.95 to 1.01	(9.77 to 10.39)
<u>ii) The Retailers Net Returns:</u>		
Retail Price	9.72	(100.00)
<u>LESS:</u>		
(a) Purchase price	5.62	(57.82)
(b) Cost of retailing	1.71	(17.59)
(c) Average fruit loss as percentage of retail price @ 14.8%	1.37	(14.09)
<u>EQUALS:</u>		
Retailers Net Returns	1.02	(10.49)
	(Or 18.15% of the wholesale price)	

Table 4.32 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Banana to the Bombay Market

Costs and Returns per 10 kgs	Rs. P.	Percentage of Retail Price
Average Retail Price	11.20	(100.00)
Wholesale Price (or the price received by the cultivator)	6.50	(58.04)
1) <u>The Cultivator's Net Returns:</u>		
Price Received by the cultivator	6.50	(58.04)
<u>LESS:</u>		
(a) Marketing cost EQUALS: CULTIVATOR'S NET RETURNS: 4.10 (36.61)	2.40	(21.43)
(b) Cost of cultivation	2.58	(23.04)
<u>EQUALS:</u>		
Income of the Cultivator	1.52	(13.57)

Table 4.33 : Market Margins, Price Spread and Net Returns:
Sale of Banana Through the Bagwan to Poona Market

Costs and Returns per 10 kgs	Rs. P.	Percentage of Retail Price
Retail Price	9.72	(100.00)
Wholesale Price (or the price received by the Intermediary)	5.70 to 5.90- 6.00	(60.70)
Price received by the cultivator	4.50	(46.30)
1) <u>The Cultivator's Net Returns</u>		
Average price received by the Cultivator	4.33 \leq 4.50 to 4.25	(46.30 to 43.72)
LESS:		
(a) Marketing cost	0.64	(6.58)
Less: (b) Cost of cultivation	2.58	(26.54)
EQUALS:		
The Cultivator's Income	1.28 to 1.03	(13.17 to 10.60)
ii)		
Price received by the Intermediary (Khotidar)	(Rajuri) 6.90	(Otur) 5.90 (60.70%)
		(Ale-Belhe) 5.70
LESS:		
(a) Purchase Price	4.49	4.50 (46.30%)
(b) Cost of marketing	0.83	0.78 (8.02%)
EQUALS:		
The Intermediary's Net Returns	0.58	0.62 (6.38%)
	(9.83%)	(10.51%) (10.00%)
	of the wholesale price or 6.38% of retail price	

Table 4.34 : Market Margins, Price Spread and Net Returns:
Sale of Banana Through the Bagwan to Bombay Market

Costs and Returns per 10 kgs.	Rs. P.	Percentage of Retail Price
Retail Price	11.10	(100.00)
Wholesale Price (or the price received by the Intermediary)	6.80 to 7.00- 7.10	(62.5)
Price Received by the Cultivator	5.00	(44.64)
<u>1) The Cultivator's Net Returns</u>		
Average Price Received by the Cultivator	5.00	(44.64)
<u>LESS:</u>		
(a) Marketing cost <small>EQUALS: CULTIVATOR'S NET RETURNS: 4.36 LESS: (29.28)</small>	0.64	(5.71)
(b) Cost of cultivation	2.58	(23.04)
<u>EQUALS:</u>		
The Cultivator's Income	1.78	(15.89)
<u>ii) Price received by the Intermediary (Khotidar)</u>		
	7.00	(62.5)
<u>LESS:</u>		
(a) Purchase price	5.00	(44.64)
(b) Cost of marketing	1.14 to 1.19	(10.18 to 10.63)
<u>EQUALS:</u>		
The Intermediary's Net Returns	0.86 to 0.81	(7.23 to 7.68)
	(12.29% to 11.57%) of the wholesale price	

**Table 4.35 : The Bagwan's Cost of Marketing for Banana:
Per 100 kgs**

	Poona	Bombay
Total truck rental : (all expenses inclusive)		
From Otur @ Rs.350 per 1000 kgs	3.50	Between 5.50 and 5.00) depending upon the route of transit
From Rajuri-Ale-Belhe @ Rs.400 per 1000 kgs	4.00	
The average price received by the <u>Bagwan</u>	Rs.57.00 to Rs.59.00/quintal	Rs.68.00 to Rs.70.00/quintal

The Bagwan faces the same costs at the Poona market as the individual cultivator, and only minor concessions at the Bombay market.

Thus the following are some examples of the cost of marketing of the Bagwan (Per Quintal)

	Poona market from		Bombay market from	
	Otur	Rajuri- Ale-Belhe	Otur	Rajuri
Local transport and Loading	0.50	0.50	0.50	0.50
Transport	3.50	4.00	5.50	5.00
Cost at the market @ Rs.59/qtl.	3.75	3.75	@ Rs.70/qtl 5.89	5.89
Interest on capital	0.01	0.01	0.01	0.01
	<u>7.76</u>	<u>8.26</u>	<u>11.90</u>	<u>11.40</u>

The bagwan makes for himself a net return of 6.38 per cent of the retail price even when paying cultivators around Rs. 4.50 per 10 kgs. This net return when multiplied by the volume of bananas handled by a bagwan, even one of the lesser ones, amounts to a substantial net income for the bagwan. Tables 4.33 and 4.34 have this information.

The retailer's almost 40 per cent margin (Table 4.31) allows him a net return of Rs.1.02 per 10 kgs (or 10.49 per cent of the retail price at Poona). This, though a higher net return than the bagwan's per 10 kgs does not give the banana retailer much of net income each month as the volume of bananas the retailer handles is quite limited. The retailer's cost of marketing for bananas is about 18 per cent of the retail price, and fruit loss accounts for another 14 per cent.

4.5.29 ANALYSIS OF MARKETING COSTS, PRICE SPREAD AND MARKETING MARGINS FOR GRAPE GROWN IN THE POONA DISTRICT

The cost of marketing per quintal for grape is higher than other fruits (Table 4.36). It is at between Rs.120 and Rs.128 per quintal for Poona market and between Rs. 172 and Rs.186 per quintal for the Bombay, Surat and Ahmedabad markets. As the distance between the orchards and the markets increases the cost of transport becomes increasingly a larger proportion of the total marketing cost. Packing of grape is generally in small corrugated boxes each of which carries 2 kgs of Thompson Seedless. Generally two such boxes are tied or pasted together to form a four

Table 4.36 : Marketing Costs of the Grape Cultivators in the Selected Sample (1978-79)

VI. Fruit : GRAPE : Average Wholesale Price in Poona (1977-78): Rs.464/Quintal; Bombay Rs.520/Quintal; Surat and Ahmedabad Rs.530/Quintal and Average Retail Price in Poona (1977-78): Rs.825/Quintal; Bombay Rs.900/Quintal; Surat and Ahmedabad Rs.925/Quintal

	Poona		Bombay		Surat		Ahmedabad	
	Rate	Charge	Rate	Charge	Rate	Charge	Rate	Charge
<u>PART A : Costs and Charges at the Market Yard</u>								
1. Commission	@ 7%	32.48	@ 10%	52.00	@ 8%	42.40	@ 8%	42.40
2. Weighment and Counting	@ Rs.0.05/2 kg	2.50	@ Rs.0.15/2 kg	7.50	-	-	-	-
3. Hamali	@ Rs.0.05/4 kg	1.25	@ Rs.0.10/2 kg	5.00	@ Rs.0.20/4 kg	5.00	@ Rs.0.20/4 kg	5.00
4. Refilling	-	-	-	-	-	-	-	-
5. Postage	@ Rs.0.45/Qt1.	0.45	@ Rs.0.45/40 kg	1.13	@ Rs.0.30 per con cognment of 40 kg	0.75	@ Rs.0.30 per con- signment of 40 kg	0.75
6. Vigatwari	@ Rs.0.02/2 kg	1.00	-	-	-	-	-	-
Cum-Total I		37.68		65.63		48.15		48.15
<u>PART B : Pre-market Costs of Marketing Per Quintal</u>								
7. Local Transport	@ Rs.0.25/4 kg	6.25	@ Rs.6.25/Qt1.	6.25	@ Rs.6.25/Qt1.	6.25	@ Rs.6.25/Qt1.	6.25
8. Packing (Labour and Material)	@ Rs.1.08/2 kg	54.00	@ Rs.1.20/2 kg	60.00	@ Rs.1.20/2 kg	60.00	@ Rs.1.20/2 kg	60.00
9. Watching and Harvesting		13.72		13.72		13.72		13.72
Cum-Total II		111.65		145.60		128.12		128.12
<u>PART C :</u>								
<u>ONE : Village of Origin: HADAPSAR (Haveli Taluka)</u>								
10. Octroi and Transport	@ Rs.2.40/30 Box(4 kg)	2.00	@ Rs.0.50/4 kg	12.50	@ Rs.1.45/4 kg	36.25	@ Rs.1.50/4 kg	37.50
Cum-Total III		113.65		158.10		164.37		165.62
11. Interest on Marketing Capital	@ 2% per month or 0.11% per Qt1.	0.13	@ 2% per month or 0.11% per Qt1.	0.17	@ 2% per month or 0.11% per Qt1.	0.18	@ 2% per month or 0.11% per Qt1.	0.18
Cum-Total IV		113.78		158.27		164.55		165.80
12. Cost of Self-Marketing		6.00		14.59		19.48		19.48
GRAND TOTAL (HADAPSAR)		119.78		172.86		184.03		185.28

(continued)

Table 4.30 : (continued)

	Poona		Bombay		Surat		Ahmedabad	
	Rate	Charge	Rate	Charge	Rate	Charge	Rate	Charge
<u>PART C :</u>								
<u>TWO : Village of Origin: URULI KANCHAN (Haveli Taluka)</u>								
10. Octroi and Transport	@ Rs.3.00/120 kg	2.50	@ Rs.0.50/4 kg	12.50	@ Rs.1.45/4 kg	36.25	@ Rs.1.50/4 kg	37.50
Cum-Total III		114.15		158.10		164.37		165.62
11. Interest on Marketing Capital	@ 2% per month or 0.11% per qtl.	0.13	@ 2% per month	0.17	@ 2% per month	0.18	@ 2% per month	0.18
Cum-Total IV		114.28		158.27		164.55		165.80
12. Cost of Self-Marketing		8.00		14.34		19.48		19.48
GRAND TOTAL (URULI KANCHAN)		122.28		172.61		184.03		185.28
<u>THREE Village of Origin: YAWAT (Dhond Taluka)</u>								
10. Octroi and Transport	@ Rs.5.50/120 kg	4.58	@ Rs.0.50/4 kg	12.50	@ Rs.1.45/4 kg	36.25	@ Rs.1.50/4 kg	37.50
Cum-Total III		116.23		158.10		164.37		165.62
11. Interest on Marketing Capital	@ 2% per month or 0.11% per qtl.	0.13	@ 2% per month	0.17	@ 2% per month	0.18	@ 2% per month	0.18
Cum-Total IV		116.36		158.27		164.55		165.80
12. Cost of Self-Marketing		11.34		14.10		19.48		19.48
GRAND TOTAL (YAWAT)		127.60		172.37		184.03		186.28
<u>FOUR : Village of Origin: BARAMATI-MALEGAON (Baramati Taluka)</u>								
10. Octroi and Transport	@ Rs.0.60/4 kg	15.00	@ Rs.0.75/4 kg	18.75				
Cum-Total III		126.65		164.35				
11. Interest on Marketing Capital	@ 2% per month or 0.11% per qtl.	0.14		0.18				
Cum-Total IV		126.79		164.53				
12. Cost of Self-Marketing		11.84		13.85				
GRAND TOTAL (BARAMATI-MALEGAON)		138.63		178.38				

Table 4.37 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Grape to the Poona Market

Costs and Returns per kg	Rs. P.	Percentage of Retail Price
Average Retail Price	8.25	(100.00)
Wholesale Price (or the price received by the cultivator)	4.64	(56.24)
1) <u>The Cultivator's Net Returns</u>		
Price Received by the Cultivator	4.64	(56.24)
LESS:		
(a) Marketing cost	1.30	(14.55 to 16.85)
EQUALS: CULTIVATOR'S NET RETURNS: ^{Rs P} 3.34 (40.48)		
LESS:		
(b) Cost of cultivation	2.34	(28.36)
EQUALS:		
Income of the Cultivator	1.10 to 0.91	(13.33 to 11.03)
ii) <u>The Retailers Net Returns:</u>		
Retail Price	8.25	(100.00)
LESS:		
(a) Purchase price	4.64	(56.24)
(b) Cost of retailing	1.33	(16.12)
(c) Average fruit loss as percentage of retail price @ 15.6%	1.29	(15.64)
EQUALS:		
Retailers Net Returns	0.99	(12.00)

Table 4.38 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Grape to the Bombay Market

Costs and Returns per kg	Rs. P.	Percentage of Retail Price
Average Retail Price	9.00	(100.00)
Wholesale Price (or the price received by the cultivator)	5.20	(57.78)
<u>i) The Cultivator's Net Returns:</u>		
Price Received by the Cultivator	5.20	(57.78)
<u>LESS:</u>		
(a) Marketing cost EQUALS: CULTIVATOR'S NET RETURN:	$\frac{\text{Rs}}{\text{P}}$ 3.45 (38.33)	1.75 { 1.73 to 1.78 } (19.22 to 19.78)
(b) Cost of cultivation	2.34	(26.00)
<u>EQUALS:</u>		
Net Return of the cultivator	1.13 to 1.08	(12.56 to 12.00)

Table 4.39 : Market Margins, Price Spread and Net Returns:
Self-Marketing of Grape to the Ahmedabad/Surat
Markets

Costs and Returns per kg	Rs. P.	Percentage of Retail Price
Average Retail Price	9.25	(100.00)
Wholesale Price (or the price received by the cultivator)	5.30	(57.30)
<u>1) The Cultivator's Net Returns:</u>		
Price Received by the Cultivator	5.30	(57.30)
<u>LESS:</u>		
(a) Marketing cost	1.84	(19.89)
EQUALS: CULTIVATOR'S NET RETURNS: ^{Rs P} 3.45	to	to
LESS:	(41.82) 1.85	20.11)
(b) Cost of cultivation	2.34	(25.30)
<u>EQUALS:</u>		
Net Returns of the Cultivator	1.12	(12.11)
	to	to
	1.10	11.89)

**Table 4.40 : Market Margins, Price Spread and Net Returns:
Sale of Grape to the Vyapari or Trader
Poona/Bombay Markets**

Costs and Returns per kg	Rs. P.	Percentage of Retail Price
Retail Price (Poona)	8.25	(100.00)
Average Wholesale Price (Poona) (or the price received by the Intermediary)	4.64	(56.24)
Price received by the Cultivator (Poona)	4.00 to 4.25	(48.48 to 51.52)
	<u>Markets</u>	
	Poona Rs. P.	Bombay Rs. P.
1) <u>The Cultivator's Net Returns:</u>		
Retail Price	8.25	9.00
Average price received by the Cultivator	4.00 (48.48%)	4.25 (47.22%)
LESS:		
(a) Marketing Cost EQUALS CULTIVATOR'S NET RETURNS: 3.32 (40.24)	0.68 (8.24%)	0.74 (8.22%)
(b) Cost of cultivation	2.34 (28.36%)	2.34 (26.00%)
EQUALS:		
The cultivator's Income	0.98 (11.88%)	1.17 (14.18%)

(continued)

Table 4.40 : (continued)

	Markets	
	Poona Rs. P.	Bombay Rs. P.
ii) Price Received by the Intermediary (Vyapari)	4.85 (58.79%)	5.46 (60.56%)
<u>LESS:</u>		
(a) Purchase price	4.00 (48.48%)	4.25 (47.22%)
(b) Cost of Marketing	0.46 to 0.55 (5.58% to 6.18%)	0.82 to 0.88 (9.11% to 9.78%)
<u>EQUALS:</u>		
The Intermediary's Net Returns	0.34 (4.12%)	0.35 (3.89%)
iii) Vyapari/Trader/Retailer-Direct Retail To Poona Market		
Price Received in the Market	8.25	(100.00%)
<u>LESS:</u>		
(a) Purchase Price	4.00 to 4.25	(48.48% to 51.52%)
(b) Cost of retailing	1.33	(16.12%)
(c) Cost of marketing (Transportation) (0.46-0.55)	0.51	(6.18%)
(d) Average spoilage	1.29	(15.64)
<u>EQUALS:</u>		
Net Returns of Vyaparis	1.12 to 0.87	(13.58% to 10.55%)

Table 4.41 : The Vyapari/Trader's Costs of Marketing for Grape

	Poona (@ Rs.495/Quintal)		Bombay (@ Rs. 545/Quintal)	
1. Costs at the market	39.15	(7%)	68.13	(10%)
2. Local transportation @ Rs.0.20/4 kg	5.00		5.00	
3. Transportation:				
(a) Hadapsar :				
@ Rs.25/1500 kgs	1.67		@ Rs.0.40/4 kg	10.00
(b) Uruli Kanchan:				
@ Rs.2.25/120 kgs	1.88		@ Rs.0.40/4 kg	10.00
(c) Yawat :				
@ Rs.4.75/120 kgs	3.96		@ Rs.0.35/4 kg	8.75
(d) Baramati :				
@ Rs.0.45/40 kgs	11.25		@ Rs.0.60/4 kg	15.00

Range of:

Marketing costs (per Quintal) : Rs.45.82, Rs.46.03, Rs.81.88, Rs. 83.13, Rs.48.41, Rs.55.40 Rs.83.13, Rs.88.13

kilogram jota. Greater care is taken by farmers to pack grapes that are sent to the Bombay, Surat and Ahmedabad, than to the relatively smaller and less distant Poona market. Given the lower prices at Poona, the lower costs of marketing for the Poona market enables cultivators to earn comparable net returns. The specific explanations follow the Table 4.36.

The net incomes of the cultivators when the self-marketing option is adopted varies between Rs. 0.99 (Poona) and Rs. 1.13 (Bombay). In percentages, this is a narrow range between 11.8 per cent and 12.8 per cent of the retail price (Tables 4.37, 4.38 and 4.39). At Poona retail prices the cost of marketing of the cultivator is between 14.55 per cent and 16.85 per cent of the retail price. The net income of the grape farmer when the farmer sells to the vyapari is between Rs. 0.98 and Rs. 1.17 per kilogram, depending upon whether the vyapari uses Bombay or Poona as his major market.

The price spread between the producer and the customer when the grapes are directly sent to the market is such that the farmer receives 56.24 per cent for fruit sent to the Poona market. For the fruit sent to Bombay, Surat and Ahmedabad markets (the markets most frequently used by the Poona grape growers) are between 57.30 per cent and 57.78 per cent. When grapes are marketed through vyaparis the farmer receives between 47.22 per cent and 48.48 per cent of the retail price. The vyapari receives between 58.80 per cent and 60.60 per cent of the retail price which allows him

about a 10 per cent margin (Table 4.40). The retailer, on the other hand, receives a greater than 40 per cent margin (Table 4.37).

The vyapari, when he functions as an intermediary, earns a net return of Rs.0.34 or Rs.0.35 for every kilogram of grape handled by them. This is about 4 per cent of the retail price. On the other hand, if the vyapari is also a retailer his net returns are much larger at between Rs.0.87 and Rs.1.12 per kilogram. The retailer who does not function as a vyapari makes about Rs. 0.99 per kilogram. Since the vyaparis purchasing for the Poona market generally pays a slightly lower price for the grape, the comparable purchase price and net return for the vyapari/retailer is Rs.4.00/kg and Rs. 1.12/kg respectively (Tables 4.40 and 4.41).

4.5.3 GADGIL REPORT (1931-33: MARKETING COSTS, MARGINS AND PRICE SPREADS)

The Gadgil Report on page 104 (Table XII) indicates the commissions of salesmen at the Poona market for certain fruit. This table is reproduced here for easier review (Table 4.42). In 1931-32 the commission at the Poona market seems to have varied between 9.6 per cent (orange) and 12.7 per cent (pomegranates) of the value of the whole-sale produce. The Report has several examples of the commission agents bill and the forwarding agents charges in the Sholapur and Bombay markets. At the Bombay market Table 4.43 the deductions in the commission salesmen's bill to vary between 12.2 per cent (orange) to

Table 4.42 : Summary of the Analysis of Sales Accounts, Submitted by Commission Salesmen at the Poona Market to Certain Growers or Khotidars in the Poona District, in the Years 1930, 1931, and 1932

Year	Kind of Fruit	No. of sales accounts	No. of Baskets	Total Price Realized (i.e. Total selling price)		Salesman's commission and other expenses	
				Rs. a. p.	Rs. a. p.	Amount	Percentage of Selling Price
1930	Mosambis	22	-	355- 6- 0	23- 0- 0	6.5	
	Pomegranates	11	136	102- 9- 9	7-12- 6	7.6	
	Total	33		457-15- 9	30-12- 6	(6.7)	
1931	Santras	14	612 + (18 Boxes)	726- 4- 0	71- 1- 0	9.8	
	Mosambis	8	39	128-12- 0	16- 1- 0	12.5	
	Pomegranates	22	467	253- 8- 6	32- 0- 6	12.7	
	Total	44		1108- 8- 6	119- 2- 6	(10.8)	
1932	Santras	29	1308 + (13 Boxes)	1317- 0- 3	128- 8- 6	9.8	
	Mosambis	6	111 + (2 Boxes)	120- 6- 0	11- 8- 6	9.6	
	Pomegranates	22	400	160- 0- 9	20- 1- 6	12.5	
	Total	57		1597- 7- 0	160- 2- 6	(10.0)	

Source : Gadgil Report, 1933, Table XII, p. 104.

Table 4.43 : Summary of the Analysis of Sales Accounts Submitted by Commission Salesmen at the Bombay Markets to Certain Growers or Khotidars in the Poona District in the Years 1930, 1931 and 1932

Year	Kind of fruit	No. of sales accounts	No. of Baskets	Total Price realized i.e. Total selling price	Deductions			
					Forwarding Agent's Bill (including Railway freight)		Commission Salesman's Bill	
				Rs. a. p.	Rs. a. p.	Percent- age of selling price	Rs. a. p.	Percent- age of selling price
1930	Guavas	135	672	1560-15-0	473- 4-6	33.3	301-12-9	19.3
	Mosambis	48	1193	3157- 3-0	399-12-3	12.7	448- 8-0	14.2
	Pomegranates	38	380	573- 0-9	148-15-3	26.0	144- 8-9	25.2
	Santras	20	328	681- 8-0	134-13-0	19.8	145- 8-0	21.3
	Total	241		5972-10-9	1156-13-0	(19.4)	1040- 5-6	(17.4)
1930	Figs	157		3365-12-0			579-10-6	17.2
1931	Guavas	171	508	1340-11-3	424- 7-0	31.6	230- 8-6	17.2
	Mosambis	30	140 + 87 Boxes	689-12-0	103-12-6	15.1	95- 5-0	13.8
	Pomegranates	31	136	179-12-0	51- 8-0	28.7	48- 4-9	26.9
	Santras	6	49	125- 2-0	17- 9-6	14.1	15- 5-0	12.2
	Total	238		2335- 5-3	597- 5-0	25.6	389- 7-3	(16.7)
1932	Papayas	10	36	58- 9-0	21- 7- 6	(36.8)	14- 0-3	(24.0)

Source : Gadgil Report, 1933, Table XI, p. 101.

Table 4.44 : Road Transport Charges, as Shown in Certain Sales Accounts of Mosambis Consigned to Bombay

No. of sales accounts (1)	Total selling price (2) Rs. a. p.	Road transport charges upto railway station (3) Rs. a. p.	Percentage of Col. 3 to Col. 2 (4)
28	730-2-0	28-1-0	3.8

Source : Gadgil Report, 1933, Table XVI, p. 111.

Table 4.45 : Road Transport Charges as Shown in Some Sales Accounts Relating to the Poona Market

No. of sales accounts (1)	No. of baskets (2)	Distance from Poona (miles) (3)	Fruit (4)	Total selling price Rs. a.p. (5)	Road transport charges Rs. a.p. (6)	Percentage of Col. 6 to Col. 5 (7)
12	321*	23	Figs	91- 1-3	8-6-9	9.2
7	94	58	Santras	183- 8-0	19-1-0	10.4
3	39	58	Mosambis	72- 5-0	6-1-6	8.4
3	59	13	Pome-granates	29-11-3	5-4-0	17.7
1	51	58	Santras	61- 1-0	6-1-3	10.0

* Weight in sers.

Source : Gadgil Report, 1933, Table XVII, p. 111.

26.9 per cent (pomegranates), and averaging at about 17 per cent of the wholesale price. The forwarding agents' bill, including the railway charges, etc., at the Bombay market varied between 14 and 20 per cent for orange and mosambi, and between 28 and 34 per cent of the wholesale price for guava and pomegranates. The proportion of these deductions was only slightly lower at the Sholapur market for the same fruit and during the same period.²⁸ Details regarding the composition of the commission salesmen's slips at the Poona market have not been provided by the Gadgil Report, but commission salesmen's bill at the Sholapur market included a dharmadaya (charity) of 0.74 per cent, a postage charge of 1.48 per cent and a market charge or 'rent' of 0.74 per cent of the selling price of the produce.

Road transport charges to Bombay and Poona are available in Tables XVI and XVII.²⁹ These tables are being reproduced here for the sake of convenience. Transportation cost (for road transport) from the orchards in the Poona district to the Poona Market formed between 8.4 and 17.7 per cent of the selling price, when including octroi charges. With regard to the costs of retailing the Gadgil Report admits to having only minimal information.³⁰ Some retailer's

28 Gadgil Report, Table XIII, p. 106 and Table XIV, p. 107.

29 Ibid., p. 111.

30 Ibid., p. 112.

margin have been calculated from the information on page 113 of the Report. A few of these are reproduced below:

Table 4.46 : Retailer's (Hawkers) Margins in the Gadgil Report of 1933

	Guava	Mixed lot of fruit
Purchase price	Rs.1-6-0 for a hara of 375 fruit	Rs.3-4-0
Estimated selling price	Rs.2-6-0 (for the hara)	Rs.4
Retailer's purchase price as a proportion of selling price	57.9% ³¹	81.25%
Cost of retailing	2 annas per hara, or 5.26% of the retail price	-
Retailer's margin of earning	14 annas, or 36.84% of the retail price	12 annas or 8.75%

The Gadgil Report does not offer any examples of price spreads or the cultivators' net returns from marketing. Therefore a comparative analysis in this respect with the 1930s is not possible. Table 4.47 reproduces the marketing costs as percentage of the wholesale price from the Gadgil Report. These are compared with the percentage share of similar items in the post-regulatory period of the 1977-1986. It is indicated in the Table 4.47 that both the salesman's

³¹ The corresponding figure for this study is 54.64 per cent.

Table 4.47 : Marketing Costs : A Comparison of the Findings of the Gadgil Survey and the Post-Regulation Survey (Percentage of wholesale price) (Poona Market)

Cost Item	Orange		Mosambi		Guava		Fig	
	1930-32	1977-80	1930-32	1977-80	1930-32	1977-80	1930-32	1977-80
I. Salesman's Commission and Other Expenses	9.8%	8.4%	6.5% to 12.5%	8.48%	-	-	-	-
II. Road Transport	10.00% to 10.4 %	4.47%	8.4%	5.88%	-	-	9.2%	1.81%

Source : Gadgil and Gadgil Report, pp. 104 and 111.

commission and other expenses at the market and the costs of transportation are a lower percentage of the wholesale price after market regulation than during the Gadgil Report of the 1930s.

4.6.1 COOPERATIVE MARKETING OF FRUIT IN POONA

The possible suitability of cooperative marketing to Indian agriculture has often been suggested by social scientists. Even the Gadgil report in its section on recommendation states:³²

Attempts should be made to form co-operative bulking and dispatching societies of fruit and vegetable growers, wherever the conditions are favourable for their formation.

Further, the Report elaborates:

... cooperative efforts would most fruitfully come into being in two directions: (i) bulking societies, which could undertake certain marketing functions, especially such as supplying marketing intelligence and directing the movement of produce, in view of such intelligence. ... (ii) The other cooperative effort would best be in the direction of the establishment of cooperative markets in producing areas.

The benefits of cooperative marketing are of course in the economies of bulk marketing as are enjoyed by middlemen such as the khotidars and the bagwans. The common pattern of small holding-small orchard found among the Poona district fruit growers explains both their inability to

32 Gadgil and Gadgil, p. 178.

independently enjoy the economies and the continued role of middlemen in modern fruit marketing. The middlemen are still relevant, more than fifty years since their elimination from the district was considered in the Gadgil report, simply because self-marketing or independent marketing is uneconomical. The obvious alternative of cooperative marketing, unfortunately, has not so far succeeded in the district.

4.6.11 ATTEMPTS AT COOPERATIVE MARKETING OF FRUIT IN THE POONA DISTRICT

The Maharashtra State Grape Growers' Association (or Maharashtra Rajya Draksha Bagaitdar Sangh) is an active organization now operating from the Draksha Bhawan at Gultekadi, Poona. It has about 6,500 members, of which about 500 are from the Poona district. Its principal activity, however, has been in the supply of inputs and cost-information to the grape growers of the district. They have no plans of entering the field of cooperative marketing, even though by their own admission about 90 per cent of the members have grape acreages of only 2 acres or less.

The reticence of the otherwise successful grape growers' association to expand to cooperative marketing could bear some relation to the experience of the banana cooperative marketing association in the district. The Sanjeevani Phale Kharedi Vikri Sangh was begun in 1977 by the banana growers of Junnar to cooperatively market their produce at the Poona market. But the Sangh did not find it an easy task to compete against the private operations of bagaitdars and

commission agents. In 1979 it was barely existing operating through the private commission agency of Shriram Co., and by 1980 cooperative marketing operations in the Poona district had ceased. Between 1980 and 1985 no new efforts towards cooperative marketing of fruit had been tried in the Poona district.

4.6.12 AN ANALYSIS OF THE FAILURE OF COOPERATIVE
MARKETING OF FRUIT IN POONA DISTRICT

The predictability with which the cooperative marketing effort languished arouses some suspicion among rational minds about the "naturalness" of such an end. It is true that the Gadgil report stated:

If the question is examined practically, it would seem that the limits for the bulking and despatching societies are, even in this district, very narrow. A bulking society can operate only in a small area; and for it to produce economies, it would be necessary to handle bulk consignments on a fairly large scale. 33/

It is probable that the immediate economic factors that caused the Sahajivani Phale Kharedi Vikri Sangh to dis- mantle were engineered by social and political factors. This first effort towards the cooperative marketing of fruit in Poona district was resisted and attacked with propaganda campaigns by the financially and often socially advantaged middlemen. The repeated resistance to the regulation of fruit marketing in Poona by the middlemen lobby which delayed

the process of regulation by almost twenty years (1959-1976) is only further evidence of their political, social and economic strength. That the same lobby should have successfully scuttled the first shaky attempt of some farmers towards cooperative marketing, is not surprising. In spite of the competition among them, that the middlemen are capable of acting in collusion when their aggregate profits are threatened is also obvious from the punitive measures adopted by the Commission Agents' Association against defaulting small retailers.³⁴

Moreover, the small sizes of the orchards in the Poona district make cooperative marketing especially suitable to the local conditions. Effective marketing could be achieved with cooperative marketing.

The argument that cooperative marketing in the district has failed because the total volume of banana production in the Junnar taluka is too small to permit marketing economies is not entirely acceptable. While it is to be admitted that the Junnar taluka does not have the advantages of the Jalgaon district (the chief banana growing tract in Western India) the total production in the Junnar taluks is adequate to permit cooperative marketing in the taluka. Interviews with khotidars and others have clearly

³⁴ The names of defaulting retailers appear on a board at the market yard. No member of the Association will have dealings with the retailers listed on the board.

indicated that these middlemen restrict their operation to a particular spatial region. Indeed, it is customary for these middlemen to divide the district into regions of operation by a mutual understanding only occasionally violated. In fact, not one but several independent bagwans have simultaneously operated successfully in the Junnar taluka. If it has been and still is economically feasible for several bagwans to operate successfully from the Junnar taluka, is there not economic potential for a single co-operative marketing organization to achieve the same, ceteris paribus? The ceteris paribus condition here is the assumption that social and political opposition to such an effort at cooperative marketing are necessarily and successfully controlled.

There is a critical difference in the two situations, however. That difference is in the motivational factors governing the two forms of organizations: private enterprise and a cooperative body. The driving force of private profit motivates the middlemen to strive for the highest levels of efficiency possible under the circumstances. Absence of similar motivation in cooperative organizations blurs the personal commitment of the office-bearers to the cooperative cause of all members. As it happened with the Sahajeevani Sahakari Society, the best economies of operation and potentials for higher efficiency are seldom as fully exploited as in a private enterprise. The inevitable clash

of personal and organizational interests further hampers the performance of the cooperatives, and hastens their dismemberment. Organizational capabilities are not as yet intrinsic to the rural Indian framework. Therefore, in the absence of a strong organizational binding that may have supported the cooperatives through the tribulations of frequent conflicts, cooperative organizations crumble easily. In spite of these drawbacks, however, the suitability of cooperative marketing to conditions prevailing in the Poona district cannot be overlooked.

4.7.1 CONCLUDING REMARKS ON FRUIT MARKETING IN POONA

The preceding analysis suggests that fruit marketing may be said to have become more efficient as a result of market regulation. Not only are the costs at the Poona market a lower percentage of the retail (and wholesale) price than before market regulation, but the costs of transporting fruit into the market has reduced over the years. Both the costs at the market and those of transportation were proportionately higher during the Gadgil survey than during the post-regulatory phase of marketing.

Fruit, however, continues to be marketed by at least a fifth of the fruit cultivators via middlemen. However, when one compares the net income received by the cultivator in marketing through trucking agencies or self-marketing, with that which he receives from marketing through middlemen, it is obvious that his net income does not change appreciably.

Under the existing circumstances, marketing through middlemen is as efficient a system as marketing through a trucking agency or self-marketing. The cultivator's share in the consumer's rupee is further reduced by the wide retailing margin. The nature of wholesale and retail price movements has a bearing upon the farmer's net returns. The next chapter therefore examines the prices and other aspects of marketing at Poona City.

Table A₄.1 : Cost of Self-marketing

Item	Orange	Mosambi	Guava	Fig	Banana	Grape
1. Average per acre output	76.77 qtls.	86.83 qtls.	64.56 qtls.	16 qtls.	184.71 qtls.	58.30 qtls.
2. Average size of orchard	1.038 acres	0.803 acres	0.86 acres	0.66 acres	1.37 acres	1.96 acres
3. Length of the season	120 days	120 days	90 days	60 days	180 days	100 days
4. Labour for watching for the season	120 days + 120 nights : male @ $\frac{1}{2}$ man-day each	120 days + 120 nights : male @ $\frac{1}{2}$ man-day each	$\frac{1}{2}$ man-days, 90 days	$\frac{1}{2}$ man-days 60 days	1 man, $\frac{1}{2}$ woman, day 180 days	2 men, 100 days
5. Labour for harvesting	2 men, 40 days	2 men, 40 days	$\frac{1}{2}$ man-day 30 days	1 man, 30 days	2 men, 45 days	2 men, 30 days
6. Period of marketing loan	7 months	7 months	6 months	4 months	9 months	6.3 months
<u>Cost of Trips to the market</u>						
<u>A. Farmer assumes full responsibility</u>						
7. Number of trips to the market by the farmer	8	8	3	3	9	7,10,13,20 trips depending upon the village of production
8. Number of trips to the market by the farmer's agent	40	40	22.5	15	60	100
<u>B. Farmer uses trucking agency's services</u>						
9. Number of trips to the market by the farmer	6	6	4	3	9	4
10. Number of trips to the market by the farmer's agent	10	10	8	4.5	15	10

Table A₄.2 : Estimated Per Quintal Costs of Self-marketing

Fruit/Source	(In rupees per quintal)					
	Self-marketing without trucking agent		Self marketing with trucking agent			
			With farmer + his own agent		Without farmer + his agent trips	
	To the Poona market	To the Bombay market	Poona market	Bombay market	Poona market	Bombay market
1. ORANGES						
(a) Talegaon Dhamdhare	5.62	13.89	5.92	9.05	3.54	4.08
(b) Shikrapur	5.48	13.65	5.87	8.97		
(c) Ranjangaon Ganapati	6.57	13.05	6.25	8.77		
2. MOSAMBIS						
Sakurde-Belsar	10.37	16.64	7.33	10.04	3.48	4.10
3. GUAVAS						
(a) Talegaon Dhamdhare	4.01	10.46	3.60	6.42	1.15	1.32
(b) Saswad/Dive	4.24	8.84	3.71	5.69		
4. FIGS						
(a) Velu	14.21	17.10	14.29	-	6.64	7.64
(b) Dive	16.76	26.50	15.27	22.46		
5. BANANAS						
(a) Otur	5.57	6.39	3.25	3.71	1.12	1.30
(b) Rajuri-Ale-Belhe	5.84	6.12	3.34	3.62		
6. GRAPES						
(a) Hadapsar	6.00	24.19	9.80	14.59	9.28	11.20
(b) Uruli Kanchan	8.00	22.32	9.60	14.34		
(c) Yawat	14.68	20.45	11.35	14.10		
(d) Baramati	17.90	18.57	11.85	13.85		

CHAPTER V

AN ANALYSIS OF PRICES OF SELECTED
FRUIT AT THE POONA MARKET5.1.1 INTRODUCTION

This chapter will examine the variations in the wholesale and retail prices over seasons. It analyses the pattern of arrivals at the market and the seasonal pattern of prices. The retail and wholesale margins will be compared to that for the 1930s. Consequently it will examine the effect of the existing marketing structure upon the element of uncertainty experienced by the cultivators as a result of price variations and see if price variations is any lesser in 1977-78 than in the 1930s. Another important factor in the marketing of perishable products is spoilage. Fruit spoilage will be examined in this chapter.

5.2.1 THE PATTERN OF SEASONALITY IN POONA
OF THE SELECTED FRUIT: 1977-78 AND
1930-31 COMPARED

There is almost a well-marked seasonality pattern to fruit arrivals at the Poona market, although some suppliers are experimenting with out-of-season crops. Mangoes arrive at the market from Ratnagiri between May and July. Oranges from Nagpur arrive in large quantities at Poona between June and August, and again between January and April. The Poona market also receives a variety of fruits grown in the fruit growing tracts of the Poona district. Each of the six fruits,

oranges, mosambis, guavas, figs, bananas and grapes, has a more or less defined (though not rigidly so) pattern of seasonality. Seasonality of fruit varies with each fruit, and usually lasts for three to four months for each fruit and variety.

ORANGES AND MOSAMBIS: For oranges and mosambis there are three possible crops, although the same orchard generally bears only one good harvest. These seasons have been referred to as bahars earlier in the text and vary with the climatic conditions, rains, the nature of the soil, and the particular care rendered by the cultivators upon their orchards. The three fruiting seasons are ambe bahar (between October-November and January-February), mrug bahar (between January-February and May-June) and hatte bahar (between May-June and September-October). Oranges from Pune-Nagar comprise of about a fourth of the market supply of all oranges in the summer months and about a third of the oranges in the market in the mrug bahar.¹ The major growing areas in Poona are in the Shirur taluka (Shikrapur, Talegaon Dhamdhare and Ranjangaon Ganapati).

For mosambi, again, although all three bahars are possible, the more common seasons are the hatte and the ambe bahars. Mosambis in the Poona district grow mainly in the

¹ These are estimates projected from the retailers' supply of different varieties. The estimates more or less match the estimates of market share provided by the dalals at the Poona market yard.

Purandhar taluka. The principal competing variety comes from the Jalna tract in the Aurangabad district. Around eighty per cent of the mosambi grown in the Poona district comes to the Poona market. Mosambis from the Poona-Jalna type dominate the entire supply of the market, of which the Poona mosambi comprise of between thirty and forty per cent depending upon the yield and other conditions.

For both oranges and mosambis the plucking and harvesting follows about two months after fruit development, and about eight to ten months after the beginning of the flowering.

According to the Gadgil survey the three seasons for oranges were between February and May, July and August, and between October and November, of which only the first two were really important.² The report also mentions that in all cases of seasonality for fruits the months mentioned were to be taken as only approximately representing the season.³ The report also stresses the large variations in the period between blossoming and fruiting and the length of the fruit season for any variety, depending upon controllable and non-controllable factors.⁴ As an example of the wide nature of variations in flower and fruit development pattern the report cites the instance of mosambi for which

2 Gadgil Report, op.cit., p. 35.

3 Ibid.

4 Ibid.

the period between blossoming and plucking was found to vary between ten to fifteen months.

The seasonality of oranges and mosambis cannot be said to have changed significantly in the Poona district over the years since the 1930s. The seasons, however, are longer, and some fruit is also available outside the principal seasons. The proportion of Poona oranges and mosambis to those from Nagpur and Jalna has not been stated in the Gadgil report, but the responses of retailers and commission agents at Poona indicate that the inflow of oranges and mosambis from Poona as a proportion of the total arrival of these fruits has been increasing gradually.

A discussion on the seasonality of oranges and mosambis is not complete without a mention of the nava (new fruit) and juna (old fruit) bahars. This is especially true for mosambis which are often harvested before fruit development is completed, and the green fruit is allowed to hurriedly acquire colour as a result of application of chemicals. The nava bahar lasts for the initial four to six weeks of a mosambi season. Since the nava bahar is not as sweet as the tree-developed juna bahar, it fetches a lower price in the Poona market.

GUAVAS: The variety of guava grown in the Poona district now is chiefly the Lucknow 49 variety. Although there are three guava seasons, the two main seasons for the kalmi guava at Poona are between October and March, and a

lesser season between June and September. This pattern may vary by a month or two from one year to the next depending upon the temperature, rains and other climatic conditions. This could very well be the reason why the seasonality for 1977-78 appears to have shifted a little from the pattern reported in the Gadgil report.⁵ Another reason could be that during the Gadgil survey the local variety was grown. The two main guava seasons mentioned in the Gadgil report are between August and October, November and January, and between February and April. The guava seasons were found to run into each other then as now. The season of heavy production was then between September and January, and in 1977-79 it was between October and March. Again, as the Gadgil report states,⁶ "Agricultural production is notoriously variable, being subject to a large variety of factors". Almost a hundred per cent of the guava coming into the Poona market is from the guava growing villages of and around the Poona district.

FIGS: Although small quantities of poor quality (khatta bahar) fig keep coming into the market from the surrounding villages, the principal fig season may be said to be between February and July. Poona district is the main fig cultivating district in Western India and more than

5 Ibid., p. 34.

6 Ibid., p. 35.

forty per cent of the fig grown in Poona district is sent to the Poona market. The remaining sixty per cent is sent to Bombay. The Gadgil report mentions the months of April and May as the period during which fig production and supply is abundant. The months between mid-March to late May continues to be peak portion of the fig season. The best quality figs come from the villages of Khed-Shivapur, Dive and Velu in the Poona district.

BANANAS: The period of the planting of the banana crop may be, and is, varied considerably in the Junnar taluka to ensure a longer period of access to the market. This fact is true for the major supplying area of Jalgaon district as well. The banana blossoms are out somewhere around nine to twelve months after planting. The first development takes another two to two and a half months thereafter. The banana fruit may be marketed fourteen to eighteen months after planting and the season extends from five to six months. Around sixty per cent of the Junnar bananas are sent to the Bombay market. The remaining forty per cent is sent to the Poona market where the Junnar bananas form a relatively small portion of the total banana supply in most years. This proportion varies between fifteen and twenty per cent of the total banana arrivals for most years. The variety of banana that comes from Junnar is the same as the variety that is produced in the Jalgaon district, i.e. the basrai variety. Bananas from

Jalgaon district make up seventy-five to eighty per cent of the banana arrivals into the Poona market. The banana season extends to all months other than April, May and June.

According to the Gadgil report⁷ in the 1930s the bulk of the imports into the Poona market was from Junnar. The report mentions the Junnar area's banana season to stretch through all months other than May through June, with lean production between June and August. In those months the bananas grown in the Purandhar taluka (the villages around Walha) supplied the bananas that came into the Poona market. This pattern is now changed, as the bananas from Jalgaon which constitute a larger proportion of bananas in Poona, are available also in some small quantities in the summer months. The Purandhar taluka does not supply any significant portion of the bananas consumed at Poona.

GRAPES: Grapes are supplied to the Poona market from Nasik, Sangli and Poona districts in Maharashtra and from the Karnataka State. The variety known as Tasgaon Chaman is imported from Sangli. However, about forty to fifty per cent of the grapes of the Thompson Seedless variety coming into the Poona market is from the Poona district. This percentage varies from one year to the next as yield from the Poona vineyards vary with climatic factors such as untimely rains, hailstorms, etc.

7 Ibid., p. 34.

The grape season begins in the early part of December and ends in the third or fourth week of April. Grapes of the Thompson Seedless variety come to the Poona market from Baramati, Haveli and Indapur. In the Gadgil report there is no mention of any significant grape cultivation in the Poona district. Import of grapes from other areas was between February and May.

5.3.1 SEASONALITY PATTERN OF ARRIVALS OF
THE SELECTED FRUIT AT THE POONA
MARKET (1930-31 AND 1977-78)

An analysis of a price arrival pattern was attempted, but the quality of data available with the PAPMC was found to be unreliable. Therefore such analysis is not possible. A further attempt was made to estimate the arrivals on the basis of the retailer turnover data collected on a weekly basis for 1977-78 and an attempt is made to compare monthly arrival patterns in 1930-31 and in 1977-78. Table 5.1 has been constructed for that purpose. Since the 1977-78 data is available from the month of May, May has been selected as the base month.

The pattern of seasonality for oranges appears to have changed somewhat. For 1977-78 arrivals are very high in the months of February, March and April. In 1930-31 the month with the highest orange arrival was in August, and very little orange arrived at the market in February.

For mosambis the period of highest arrival in 1930-31 was in September. The seasonality pattern does not appear

Table 5.1 : Monthly Fruit Arrival Pattern at the Poona Market: Index of Fruit Arrivals
(1930-31 and 1977-78)

[Base: May (Except for Grapes)]

	Orange		Mosambi		Guava		Fig		Banana		Grape	
	1930-31	1977-78	1930-31	1977-78	1930-31	1977-78	1930-31	1977-78	1930-31	1977-78	1930-31	1977-78
May	100	100	100	100	100	100	100	100	100	100	155	-
June	233	137	108	118	332	157	40	41	54	438	325	-
July	417	252	115	235	84	231	31	1	55	978	150	-
August	573	343	145	253	223	552	3	-	100	1120	350	-
September	218	356	183	310	570	303	2	-	256	1405	775	-
October	107	395	56	379	696	203	1	-	533	34731	550	-
November	52	290	127	278	426	311	1	-	433	26970	100*	100*
December	46	104	134	224	668	753	-	-	483	31870	25	523
January	34	309	66	106	443	728	-	6	604	39456	575	144
February	30	834	38	102	100	452	6	33	626	22664	4225	233
March	167	1270	29	99	8	276	83	78	483	15969	8950	201
April	265	1029	69	85	31	101	188	98	332	151	600	636

* For Grape the base is November.

to have changed in the last fifty years for mosambi. Large quantities of mosambis arrive at the market in the summer months between July and December in 1977-78. The Gadgil survey indicates a break in the season in-between even though the overall period of high arrivals is about the same for both studies.

For guava there was much greater fluctuation in arrivals in the 1930s than today. The peak months then were October and December. Now the highest arrivals are in December and January and then again in September. The season is also somewhat longer as guava availability more or less spreads through the entire year.

The fig seasonality has not changed. The season for figs was in the 1930s (as it is now) between the months of March and June. The banana season spreads over the entire year. The periods of peak arrivals are somewhat similar between the two surveys. For grape the seasonality that is reflected is different. The arrival trends are not comparable for grape since the estimated pattern for 1977-78 are for the Thompson Seedless variety which was not grown in 1930-31.

Therefore it may be said that although some changes are noticed in arrivals the basic pattern for comparable units are similar for the periods. The next issue that needs to be discussed is the pattern of price movements in the two periods. This will be done in the following section. The prices will be analysed beginning with the shortest

time span: variations within the same day, and ending with an examination of monthly price movements over a period of one year.⁸

5.4.1 PRICE VARIATIONS WITHIN THE SAME DAY
AT THE POONA MARKET

Wholesale prices vary substantially within the same day. Examples of variations in the wholesale prices for certain fruit on certain selected weeks of the year at the Poona wholesale fruit market are to be found in Tables 5.4 to 5.10. The price variation over the same day in the wholesale market for fruit (Table 5.2) occurs at the Poona market at least partly because of the variations in the demand for particular fruit on particular days by the individual retailers. This is so because the average retailer of fruit in the Poona city area owns a small operation and generally sells fruit either on push-carts or in tiny roadside stalls. The total capacity for the purchase of fruit is generally quite low. The predominance of salaried people in the Poona area makes the pattern of consumption conservative and fruit purchases form only a small portion of the food budget. Therefore, the Poona retailers are more cautious in their purchases of fruit and the prices of

⁸ The initial intent of this study was to end the price analysis with examination of annual price variations over a ten year period (1977-86). However, the quality of the data was found to be very poor. Consequently meaningful analysis of such was not possible.

of purchase often reflect the intensity of need for a particular fruit and retailer, on the selected date.

Table 5.2 : Examples of Wholesale Price Variations Within the Same Day (1978)

	Orange Pati 1 (March) Rs./Pati	Grape (4 kg) Box (March) Rs./Pati
6-00 a.m. } 6-30 a.m. }	10-12	26-28
7-00 a.m. } 7-30 a.m. }	12-14	28-30
8-00 a.m. } 8-30 a.m. }	11-13	26-28
9-00 a.m. } 9-30 a.m. }	9-10	22-28
10-00 a.m.	8- 9	16-20

Apart from these reasons, of course, prices are higher at the peak hours. This would be at the very beginning of the wholesale day, between 6-00 a.m. and 7-00 a.m. After the peak period usually the wholesalers are left to deal with the less motivated purchasers who have to be coaxed and cajoled into placing their bids. The tail-end prices for each day are therefore substantially lower than the peak period prices. This pattern is to be found in Tables 5.2 and 5.3. Table 5.2 presents an example of hourly changes in the prices of a unit each of orange and grape. This table selected from the PAPMC records is a collection of prices indicating the wide gap on certain days between the

minimum, the maximum and the modal price for that day for a particular unit of a selected fruit.

5.4.2 DAILY VARIATIONS IN WHOLESALE PRICES AT THE POONA MARKET

Daily wholesale price variations may be constant for several consecutive days or may fluctuate sharply from one day to the next. Table 5.3 presents data for three weeks (eighteen days, since the market closes on Saturdays) each for grape, orange, fig and guava. In the case of the data for grape curiously enough while the modal and the minimum prices fluctuate quite sharply, the maximum price is more or less steady. The price fluctuations such as these, that show up in the PAPMC records for grape are largely owing to the practice of aggregate recording of prices for several varieties such as the Thompson Seedless, the Anab-e-Shahi, the Selection-7, the Bangalore Purple, etc. These varieties command different prices in the market at any given time. Thompson Seedless generally commands the highest price during the peak grape season when most of these varieties are simultaneously available at the market. The prices for the Thompson Seedless variety recorded in Table 5.2 is the weighted average of the maximum and the modal price of grape from the PAPMC records. The weights were based upon the estimated proportionate arrivals of Thompson Seedless and other varieties as obtained from the commission agents dealing in grape varieties. It may be noticed that a more consistent pattern may be found in the maximum daily prices rather than

**Table 5.3 : Daily Variations in Wholesale Prices of Fruits
At the Poona Market (1978)**

I. GRAPE										
(Prices in Rs. for 4 kg box)										
	January 1st week			February 3rd week			March 4th week			
	Max	Mod	Min	Max	Mod	Min	Max	Mod	Min	
1.	24	12	12	24	18	16	28	20	18	Sunday
2.	26	20	12	22	16	12	30	22	8	Monday
3.	28	20	6	24	22	8	28	16	12	Tuesday
4.	24	21	20	24	16	12	26	24	20	Wednesday
5.	24	20	12	22	16	12	27	22	20	Thursday
6.	24	18	12	24	15	5	27	22	12	Friday
II. ORANGE (Pati-1) Price/3 Doz. Pati (Rs./Pati)										
	February 4th week			March 3rd week			April 1st week			
	Max	Mod	Min	Max	Mod	Min	Max	Mod	Min	
1.	14	10	8	14	10	4	14	10	5	Sunday
2.	13	8	4	12	10	4	16	11	7	Monday
3.	20	12	4	12	10	4	18	13	9	Tuesday
4.	13	10	7	12	9	5	18	10	8	Wednesday
5.	14	10	6	12	10	4	18	15	5	Thursday
6.	14	10	4	-	-	-	21	13	10	Friday

(continued)

Table 5.3 : (continued)

III. FIG (Kilo)			Price/Kg							
March 1st week			March 3rd week			April 1st week				
Max	Mod	Min	Max	Mod	Min	Max	Mod	Min		
1.	6	4	2	8	5	2	9	6	4	Sunday
2.	3	2	1	6	5	2	9	6	2	Monday
3.	6	4	2	7	4	1	10	6	2	Tuesday
4.	5	3	2	-	-	-	10	6	4	Wednesday
5.	6	4	2	8	4	3	8	5	2	Thursday
6.	6	4	2	8	5	2	10	6	3	Friday

IV. GUAVA (Pati I)

						Rs./Pati 1				
July 2nd week			September 4th week			October 2nd week				
Max	Mod	Min	Max	Mod	Min	Max	Mod	Min		
1.	4	3	2	4	3	2	4	3	2	Sunday
2.	5	4	2	3	3	2	4	3	2	Monday
3.	4	3	2	-	-	-	4	3	3	Tuesday
4.	3	3	1	4	3	1	3	3	3	Wednesday
5.	4	4	4	3	3	3	4	4	4	Thursday
6.	4	3	2	4	3	2	4	4	4	Friday

Source : This data was selected from the PAPMC records of wholesale prices for 1978.

in the modal prices. The reason for this is that there is great variation in quality within the same unit of sale. The differing modal prices, therefore, do not always represent the same quality or grade of fruits. The maximum price, on the other hand, represents the best quality for the day. There is usually not much variation in the quality of the top grade fruit on different days, over a short period of time. This is why the top grades yield a price pattern while modal grade does not do so.

5.4.3 WEEKLY WHOLESALE PRICES

The weekly prices for the fruits oranges, mosambis, guavas, figs, bananas and grapes may be read from Tables 5.4 to 5.10. For orange and mosambi the three distinct seasons that exist have been noted separately. At the beginning of the season these fruits are harvested a little before complete fruit development and therefore are not as juicy or as sweet as during the peak season. The fruit of a new season is called the nava bahar and it generally fetches a much lower price than the fruit from the older season or juna bahar. Each fruit is also divided into at least two grades for the analysis of the weekly prices. The wholesale prices tend to fluctuate daily, but the retail prices do not change from day to day.⁹ At the very beginning of the new season the nava

⁹ The retail prices in the Tables 5.3 to 5.8 are weighted averages of the prices of 12 retailers from the Poona city. Individually, each shop prices its fruit in rupee values rounded to fifty paise per dozen or kilograms. Moreover, while the wholesale prices fluctuate from one day to the next, the retailer does not change his price. Higgling and bargaining is also common among basket retailers.

Table 5.4 : Weekly Wholesale and Retail Prices (Per Dozen) at the Pune Market, 1977-78
Grade I : ORANGE

		Pune and Ahmednagar Variety (Shirur, Purandhar, Pachora)		Nagpur			
		Wholesale Prices	Retail		Grade 1 + 2 Wholesale	Retail	
			Season I	Season II		Season I	Season II
			(Nava)	(Juna*)			(Juna)
1.	1/5/77 - 6/5/77	4.49	3- 4	9-11	5.25	-	15-16
2.	8/5 - 13/5	4.80	3- 4	10-11	5.15	-	15-16
3.	15/5 - 20/5	5.04	3- 5	10-12	6.00	-	15-17
4.	22/5 - 27/5	5.52	4- 5	11-13	5.97	-	16-18
5.	29/5 - 3/6	4.82	4- 5	12-14	6.15	-	19-20
6.	5/6 - 10/6	6.00	5- 6	13-14	-	-	-
7.	12/6 - 17/6	4.90	6- 7	14-16	-	-	-
8.	19/6 - 24/6	5.81	6- 7	15-16	-	-	-
9.	26/6 - 1/7	4.60	6- 7	15-17	-	-	-
10.	3/7 - 8/7	5.93	7- 8	15-17	-	-	-
11.	10/7 - 15/7	5.17	8- 9	16-17	-	-	-
12.	17/7 - 22/7	5.11	9-11	-	-	-	-
13.	24/7 - 29/7	4.38	10-11	-	-	-	-
14.	31/7 - 5/8	4.00	10-11	-	-	-	-
15.	7/8 - 12/8	3.66	11-12	(Nava) 2- 4	-	(Nava) 8- 9	-
16.	14/8 - 19/8	3.53	10-12	3- 4	2.80	8- 9	-
17.	21/8 - 26/8	3.44	10-12	4- 5	3.05	8- 9	-
18.	28/8 - 2/9	3.61	10-12	4- 6	3.17	9-10	-
19.	4/9 - 9/9	3.22	10-12	5- 6	2.98	10-11	-
20.	11/9 - 16/9	3.05	10-13	5- 7	2.26	10-11.50	-
21.	18/9 - 23/9	3.67	10-13	5- 7	3.27	10-12	-
22.	25/9 - 30/9	3.13	11-13	6- 7	3.28	11-12	-
23.	2/10 - 7/10	3.05	11-13	6- 8	3.49	11-12	-
24.	9/10 - 14/10	3.17	-	6- 8	3.19	11-13	-
25.	16/10 - 21/10	3.44	-	6- 8	3.03	11-14	-
26.	23/10 - 28/10	4.40	-	7- 9	3.83	12-15	-
27.	30/10 - 4/11	4.22	-	8-10	4.00	12-13	-
28.	6/11 - 11/11	4.61	-	8-11	4.95	12-15	-
29.	13/11 - 18/11	4.50	-	10-14	7.06	15-20*	-
30.	20/11 - 25/11	4.44	-	10-14	6.60	10-12	(*Divali)
31.	27/11 - 2/12	5.21	-	9-11	5.00	10-12	-
32.	4/12 - 9/12	5.44	-	10-12	4.20	9-12	-
33.	11/12 - 16/12	6.67	-	10-12	4.05	9-12	-
34.	18/12 - 23/12	5.70	-	9-10	4.58	9-12	-
35.	25/12 - 30/12	5.47	-	8- 9	2.90	7- 9	-
36.	1/1/78 - 6/1/78	3.53	-	7- 9	2.65	7- 9	-
37.	8/1 - 13/1	3.07	-	7- 9	2.71	7-10	-
38.	15/1 - 20/1	2.83	-	7- 8	3.49	8-11.50	-
39.	22/1 - 27/1	3.33	(Nava) 5- 6	8- 9	4.50	11-13	-
40.	29/1 - 3/2	3.44	6- 8	-	4.69	12-14	-
41.	5/2 - 10/2	3.17	7- 8	-	-	-	-
42.	13/2 - 17/2	2.93	7- 8	-	-	-	-
43.	19/2 - 24/2	3.39	7- 8	-	1.85	-	(Nava) 5- 6
44.	26/2 - 3/3	3.33	6- 7	-	2.02	-	5- 6
45.	5/3 - 10/3	2.72	6- 7	-	2.09	-	6- 7
46.	12/3 - 17/3	2.78	6- 8	-	2.58	-	6- 8
47.	19/3 - 24/3	3.27	6- 8	-	2.66	-	7- 8
48.	26/3 - 31/3	3.61	7- 8	-	2.16	-	7-10
49.	2/4 - 7/4	4.00	7- 9	-	2.52	-	7-10
50.	9/4 - 14/4	4.73	8- 9	-	2.82	-	8-10
51.	16/4 - 21/4	5.00	8-10	-	3.01	-	8-10
52.	23/4 - 28/4	5.55	9-11	-	3.06	-	9-12

NOTE for Tables 5.4 to 5.10 :

Besides the Grades I and II the price movements for which are being analysed here, there are generally one, or even two more lesser grades for Mosambi, Orange, Guava and Banana. In this study the price movements of the lesser grades will not be observed since there is no appreciable difference between the price movements of Grades I and II, but the price of Grade III (a common name for Grades III and IV) is included in the calculations of the average price. This inclusion gives a more realistic idea of the retailers price of purchase and margins.

* This is the juna bahar continuing from the previous year.

Table 5.5: Weekly Wholesale and Retail Prices (Per Dozen) at Pune, Ahmednagar and Nagpur Markets, 1977-78

Grade II : Orange

		Pune and Ahmednagar Variety (Shirur, Purandhar, Pachora)		Nagpur			
		Wholesale Prices	Retail		Wholesale	Retail	
			Season I	Season II		Season I	Season II
				(Nava)			
1.	1/5/1977 - 6/5/1977	3.18	2-3	7-9	-	-	13-14
2.	8/5 - 13/5	2.66	2.50-3	7-9	-	-	13-14
3.	15/5 - 20/5	3.62	3-4	8-9	-	-	14-15
4.	22/5 - 27/5	3.54	4-5	9-10	-	-	14-16
5.	29/5 - 3/6	3.04	4-5	10-11	-	-	15-19
6.	5/6 - 10/6	3.75	4-5	11-12	-	-	-
7.	12/6 - 17/6	3.75	4-6	12-13	-	-	-
8.	19/6 - 24/6	3.63	4-6	12-14	-	-	-
9.	26/6 - 1/7	2.74	5-6	12-15	-	-	-
10.	3/7 - 8/7	2.69	5-7	12-15	-	-	-
11.	10/7 - 15/7	2.79	6-8	12-15	-	-	-
12.	17/7 - 22/7	2.57	7-8	-	-	-	-
13.	24/7 - 29/7	3.26	8-9	-	-	-	-
14.	31/7 - 5/8	3.15	8-9	-	-	-	-
				Nava			
15.	7/8 - 12/8	3.30	8-10	1-2	-	-	-
16.	14/8 - 19/8	2.32	8-10	2-3	5-8	-	-
17.	21/8 - 26/8	3.12	9-10	2-4	5-8	-	-
18.	28/8 - 2/9	2.70	9-10	2-4	6-9	-	-
19.	4/9 - 9/9	2.45	9-10	2-5	6-10	-	-
20.	11/9 - 16/9	2.38	9-10	3-5	7-10	-	-
21.	18/9 - 23/9	2.66	9-11	3-5	8-10	-	-
22.	25/9 - 30/9	1.83	9-11	3-5	8-11	-	-
23.	2/10 - 7/10	1.99	9-11	4-6	8-11	-	-
24.	9/10 - 14/10	1.92	-	4-6	9-11	-	-
25.	16/10 - 21/10	2.30	-	4-6	9.50-11	-	-
26.	23/10 - 28/10	2.75	-	4-7	10-12	-	-
27.	30/10 - 4/11	2.38	-	5-7	10-12	-	-
28.	6/11 - 11/11	2.57	-	5-8	11-12	-	-
29.	13/11 - 18/11	3.96	-	9-10	12-15	-	-
30.	20/11 - 25/11	3.74	-	10-11	9-10	-	-
31.	27/11 - 2/12	3.03	-	6-8	9-10	-	-
32.	4/12 - 9/12	2.61	-	6-8	8-9	-	-
33.	11/12 - 16/12	2.25	-	6-8	7.50-9	-	-
34.	18/12 - 23/12	2.23	-	5-7	7.50-9	-	-
35.	25/12 - 30/12	2.03	-	5-7	6-7	-	-
36.	1/1/1978 - 6/1/1978	2.80	-	5-6	5-7	-	-
37.	8/1 - 13/1	2.37	-	5-6	6-7	-	-
38.	15/1 - 20/1	2.23	-	5-6	6-8	-	-
				Nava			
39.	22/1 - 27/1	2.30	3-5	6-8	8-11	-	-
40.	29/1 - 3/2	2.50	4-5	-	9-12	-	-
41.	5/2 - 10/2	2.45	5-6	-	-	-	-
42.	13/2 - 17/2	2.02	5-6	-	-	-	-
43.	19/2 - 24/2	2.55	5-7	-	-	-	-
44.	26/2 - 3/3	1.91	4-5	-	-	-	Nava 3-5
45.	5/3 - 10/3	1.78	4-5	-	-	-	3-5
46.	12/3 - 17/3	2.48	5-6	-	-	-	3-6
47.	19/3 - 24/3	2.08	5-6	-	-	-	4-6
48.	26/3 - 31/3	2.70	5-7	-	-	-	4-7
49.	2/4 - 7/4	2.36	5-7	-	-	-	5-7
50.	9/4 - 14/4	2.91	5-8	-	-	-	5-7
51.	16/4 - 21/4	2.90	6-8	-	-	-	5-8
52.	23/4 - 28/4	3.19	7-9	-	-	-	6-8
						6-9	

Difficult to Find Separate Gradewise Wholesale Prices Comes in Boxes -

Table 5.6 : Weekly Wholesale and Retail Prices (Per Dozen) at Pune Market, 1977-78
MOSAMBI : Grades I and II

Date	Grade I			Grade II			Average Retail	
	Whole-sale	Retail		Whole-sale	Retail		Grade I	Grade II
		Season I	Season II		Season I	Season II		
		(Nava Bahar)	(Juna bahar)		(Nava)			
1. 1/5/77 - 6/5/77	4.80	7-9	10-12	3.65	5-7	8-10	9.50	7.50
2. 8/5 - 13/5	4.21	8-9	10-12	3.76	6-8	8-10	9.75	8.00
3. 15/5 - 20/5	5.02	8-9	10-12	3.93	6-8	8-10	9.75	8.00
4. 22/5 - 27/5	4.54	9-10	10-12	3.28	7-8	8-10	10.00	8.00
		(Juna)						
5. 29/5 - 3/6	5.33	10-12	12-14	4.00	7-9	10-12	11.25	8.75
6. 5/6 - 10/6	6.00	12-14	-	3.75	8-10	-	13.00	9.00
7. 12/6 - 17/6	6.33	12-14	-	4.50	8-10	-	13.00	9.00
8. 19/6 - 24/6	6.11	14-16	-	4.04	10-12	-	15.00	11.00
9. 26/6 - 1/7	6.41	14-16	-	4.08	10-12	-	15.00	11.00
10. 3/7 - 8/7	6.22	14-16	-	4.00	10-12	-	15.00	11.00
11. 10/7 - 15/7	6.56	14-16	(Nava)	4.13	10-12	(Nava)	15.00	11.00
12. 17/7 - 22/7	5.78	14-18	5-7	3.67	12-14	4-6	13.50	11.00
13. 24/7 - 29/7	5.39	14-18	5-7	3.87	13-15	4-6	11.00	9.50
14. 31/7 - 5/8	4.17	16-18	6-8	3.96	14-16	5-6	9.50	7.89
15. 7/8 - 12/8	3.08	-	7-8	2.19	-	5-7	7.50	6.00
16. 14/8 - 19/8	3.33	-	7-8	2.28	-	5-7	7.50	6.00
17. 21/8 - 26/8	3.39	-	7-8	2.46	-	5-7	7.50	6.00
18. 28/8 - 2/9	3.22	-	7-8	2.33	-	5-7	7.50	6.00
19. 4/9 - 9/9	3.39	-	7-9	2.42	-	5-7	8.00	6.00
20. 11/9 - 16/9	2.89	-	7-9	2.42	-	5-7	8.00	6.00
21. 18/9 - 23/9	3.06	-	7-9	2.46	-	5-7	8.00	6.00
22. 25/9 - 30/9	2.87	-	7-9	2.40	-	5-7	8.00	6.00
23. 2/10 - 7/10	2.94	-	7-9	2.21	-	5-7	8.00	6.00
24. 9/10 - 14/10	3.06	-	7-9	2.63	-	6-7	8.00	6.50
25. 16/10 - 21/10	3.67	-	8-9	2.83	-	6-8	8.50	7.00
26. 23/10 - 28/10	3.80	-	8-9	3.00	-	6-8	8.50	7.00
27. 30/10 - 4/11	3.94	-	8-9	2.75	-	6-8	8.50	7.00
28. 6/11 - 11/11	4.00	-	9-10	3.50	-	7-8	9.50	7.50
29. 13/11 - 18/11	3.56	-	8-10	2.96	-	7-8	9.00	7.50
30. 20/11 - 25/11	4.11	-	8-10	3.25	-	7-8	9.00	7.50
31. 27/11 - 2/12	4.17	-	8-10	3.35	-	7-8	9.00	7.50
32. 4/12 - 9/12	4.17	-	8-10	3.54	-	7-8	9.00	7.50
33. 11/12 - 16/12	4.67	-	8-10	3.33	-	7-8	9.00	7.50
		(Nava)			(Nava)			
34. 18/12 - 23/12	3.72	-	5-6	1.97	-	3-5	5.50	4.00
35. 25/12 - 30/12	3.67	-	6-7	2.05	-	4-6	6.50	5.00
36. 1/1/78 - 6/1/78	3.83	-	7-8	2.98	-	5-6	7.50	5.50
37. 8/1 - 13/1	3.67	-	8-9	2.58	-	5-7	8.50	6.00
38. 15/1 - 20/1	3.50	-	8-9	2.63	-	5-7	8.50	6.00
39. 22/1 - 27/1	3.06	-	8-9	2.31	-	5-7	8.50	6.00
40. 29/1 - 3/2	3.33	-	8-9	2.63	-	5-7	8.50	6.00
41. 5/2 - 10/2	3.78	-	8-9	2.25	-	5-7	8.50	6.00
42. 12/2 - 17/2	4.07	-	8-10	2.55	-	5-8	9.00	6.50
43. 19/2 - 24/2	4.06	-	8-10	2.54	-	5-8	9.00	6.50
44. 26/2 - 3/3	4.17	-	9-10	2.83	-	6-8	9.50	7.00
45. 5/3 - 10/3	3.87	-	9-10	2.50	-	6-8	9.50	7.00
46. 12/3 - 17/3	4.22	-	10-12	3.21	-	7-9	11.00	8.00
47. 19/3 - 24/3	4.44	-	10-12	3.70	-	7-9	11.00	8.00
48. 26/3 - 31/3	4.21	-	10-12	3.79	-	8-10	11.00	9.00
		(Nava)			(Nava)			
49. 2/4 - 7/4	3.50	5-6	9-10	2.04	3-5	7-9	8.50	7.00
50. 9/4 - 14/4	3.72	5-7	8-10	2.17	4-5	7-9	8.00	6.85
51. 16/4 - 21/4	3.56	6-7	8-10	2.88	4-6	8-9	8.17	7.35
52. 23/4 - 28/4	3.67	6-8	8-10	2.21	5-6	8-9	8.00	7.00

Table 5.7: Weekly Wholesale and Retail Prices (Per Dozen) at the Pune Market, 1977-78

GUAVA (LUCKNOW 49)

Date	Grade I		Grade II	
	Whole-sale	Retail	Whole-sale	Retail
1. 1/5/1977 - 6/5/1977	1.99	3- 5	0.95	2- 4
2. 8/5 - 13/5	1.84	3- 5	1.00	2- 4
3. 15/5 - 20/5	1.75	3- 5	0.91	2- 4
4. 22/5 - 27/5	1.90	3- 5	0.82	2- 3
5. 29/5 - 3/6	1.80	3- 5	0.67	1.50-2.50
6. 5/6 - 10/6	1.33	3- 4	0.75	1.50-2.50
7. 12/6 - 17/6	1.00	3- 4	0.65	1.50-2.50
8. 19/6 - 24/6	1.20	3- 4	0.81	1.50-2.50
9. 26/6 - 1/7	1.08	3- 4	0.67	1.50-2.50
10. 3/7 - 8/7	1.11	3- 4	0.58	1.50-2.50
11. 10/7 - 15/7	1.22	3- 4	0.67	1.50-2.50
12. 17/7 - 22/7	1.11	2- 4	0.50	1.50-2.50
13. 24/7 - 29/7	1.02	2- 4	0.58	1.50-2.50
14. 31/7 - 5/8	1.23	2.50-4	0.56	1.50-2.50
15. 7/8 - 12/8	1.33	3- 4	0.63	1.50-2.50
16. 14/8 - 19/8	1.20	3- 4	0.61	1.50-2.50
17. 21/8 - 26/8	1.18	3- 4	0.71	1.50-2.50
18. 28/8 - 2/9	1.10	2.50-4	0.64	1.50-2
19. 4/9 - 9/9	1.28	2.50-4	0.68	1.50-2
20. 11/9 - 16/9	1.17	3- 4	0.67	1.50-2
21. 18/9 - 23/9	1.00	3- 4	0.79	1.50-2
22. 25/9 - 30/9	1.05	3- 4	0.80	1.50-2
23. 2/10 - 7/10	0.89	3- 4	0.60	1.50-2
24. 9/10 - 14/10	1.12	3- 4	0.71	1.50-2
25. 16/10 - 21/10	1.28	3- 4	0.71	1.50-2
26. 23/10 - 28/10	1.20	3- 4	0.74	1.50-2
27. 30/10 - 4/11	1.22	3- 4	0.86	1.50-3
28. 6/11 - 11/11	1.43	3- 4	1.06	1.50-3

(continued)

Table 5.7: (continued)

Date	Grade I		Grade II	
	Whole-sale	Retail	Whole-sale	Retail
29. 13/11 - 18/11	1.21	3- 4	0.80	1.50-3
30. 20/11 - 25/11	1.20	3- 4	0.80	1.50-3
31. 27/11 - 2/12	1.18	3- 4	0.83	1.50-3
32. 4/12 - 9/12	1.59	3- 4	1.04	2- 3
33. 11/12 - 16/12	1.73	3- 4	0.96	2- 3
34. 18/12 - 23/12	1.75	3- 4	0.88	2- 3
35. 25/12 - 30/12	1.81	3- 4	1.10	2- 3
36. 1/1/1978 - 6/1/1978	1.90	3- 5	0.96	2- 3
37. 8/1 - 13/1	2.01	3- 5	0.83	2- 3
38. 15/1 - 20/1	1.43	3- 5	1.12	2- 3
39. 22/1 - 27/1	1.49	3- 5	0.96	2- 3
40. 29/1 - 3/2	1.82	4- 5	1.21	2- 3
41. 5/2 - 10/2	2.20	4- 6	1.29	2- 3
42. 12/2 - 17/2	2.25	4- 6	1.13	2- 3
43. 19/2 - 24/2	2.23	4- 6	1.07	2- 3
44. 26/2 - 3/3	2.00	4- 6	1.00	2- 4
45. 5/3 - 10/3	2.12	4- 6	1.25	2- 4
46. 12/3 - 17/3	2.14	4- 6	1.25	2- 4
47. 19/3 - 24/3	2.08	4- 6	1.19	2- 4
48. 26/3 - 31/3	2.02	4- 5	0.81	2- 3
49. 2/4 - 7/4	1.93	3- 5	1.02	2-2.50
50. 9/4 - 14/4	1.74	3- 5	0.89	1.50-2.50
51. 16/4 - 21/4	1.85	3- 5	0.95	1.50-2
52. 23/4 - 28/4	2.00	3- 5	0.85	1.50-2

Table 5.8 : Weekly Wholesale and Retail Prices (Per Kg.) at Pune Market, 1977-78

FIG

Date	Grade I		Grade II
	Whole-sale	Retail	Retail
1. 1/5/1977-6/5/1977	4.85	9-11	6- 8
2. 8/5 - 13/5	4.54	8-10	5- 7
3. 15/5 - 20/5	4.56	8-10	5- 7
4. 22/5 - 27/5	4.35	8-10	5- 7
5. 29/5 - 3/6	4.2	8-10	5- 7
6. 5/6 - 10/6	4	8-10	5- 7
7. 12/6 - 17/6	4.50	8-10	5- 7
8. 19/6 - 24/6	3.67	7- 8	4- 6
9. 26/6 - 1/7	2.83	6- 7	3- 5
10. 3/7 - 8/7	2.50	6- 7	3- 5
41. 5/2/1978 - 10/2/1978	4	7- 9	4- 6
42. 12/2 - 17/2	3	6- 8	4- 6
43. 19/2 - 24/2	2.83	6- 8	4- 6
44. 26/2 - 3/3	3.5	7- 9	5- 6
45. 5/3 - 10/3	4.4	8-10	5- 7
46. 12/3 - 17/3	4	8-10	6- 8
47. 19/3 - 24/3	4.6	10-12	7- 9
48. 26/3 - 31/3	5.2	11-12	8-10
49. 2/4 - 7/4	5.83	11-12	8-10
50. 9/4 - 14/4	6.5	12-14	9-11
51. 16/4 - 21/4	6	12-14	9-11
52. 23/4 - 28/4	6.83	12-14	9-11

Table 5.9 : Weekly Wholesale and Retail Prices (Per 10 kg.) at Pune Market, 1977-78

JUNNAR BANANAS* : Grade I 25%; Grade II 35%; Grade III

Date	Whole-sale	Retail			Date	Whole-sale	Retail		
		Grade I	Grade II	Grade III			Grade I	Grade II	Grade III
1. 1/5/77 - 6/5/77					31. 27/11 - 2/12	5.63	16.66	10.35	6.40
2. 8/5 - 13/5					32. 4/12 - 9/12	5.61	16.66	10.35	6.40
3. 15/5 - 20/5					33. 11/12 - 16/12	5.38	16.66	10.35	6.40
4. 22/5 - 27/5					34. 18/12 - 23/12	5.48	16.66	10.35	6.40
5. 29/5 - 3/6					35. 25/12 - 30/12	5.41	16.66	10.35	6.40
6. 5/6 - 10/6					36. 1/1/78 - 6/1/78	5.43	16.66	10.35	6.40
7. 12/6 - 17/6					37. 8/1 - 13/1	5.50	16.66	10.35	6.40
8. 19/6 - 24/6					38. 15/1 - 20/1	5.66	16.66	10.35	6.40
9. 26/6 - 1/7	4.44	12.50	8.28	5.10	39. 22/1 - 27/1	5.53	16.66	10.35	6.40
10. 3/7 - 8/7	5.36	12.50	8.28	5.10	40. 29/1 - 3/2	5.57	16.66	10.35	6.40
11. 10/7 - 15/7	4.67	12.50	8.28	5.10	41. 5/2 - 10/2	5.86	16.66	10.35	6.40
12. 17/7 - 22/7	4.71	11.25	7.60	4.70	42. 12/2 - 17/2	5.61	16.66	10.35	6.40
13. 24/7 - 29/7	4.65	11.25	7.60	4.70	43. 19/2 - 24/2	5.10	16.66	10.35	6.40
14. 31/7 - 5/8	5.48	11.25	7.60	4.70	44. 26/2 - 3/3	4.60	16.66	10.35	6.40
15. 7/8 - 12/8	5.73	11.25	7.60	4.70	45. 5/3 - 10/3	5.68	16.66	10.35	6.40
16. 14/8 - 19/8	7.13	11.25	7.60	4.70	46. 12/3 - 17/3	5.82	16.66	10.35	6.40
17. 21/8 - 26/8	6.59	12.50	8.28	5.10	47. 19/3 - 24/3	6.22	16.66	10.35	6.40
18. 28/8 - 2/9	5.78	12.50	8.28	5.10	48. 26/3 - 31/3	6.30	16.66	10.35	6.40
19. 4/9 - 9/9	5.58	12.50	8.28	5.10	49. 2/4 - 7/4				
20. 11/9 - 16/9	5.65	12.50	8.28	5.10	50. 9/4 - 14/4				
21. 18/9 - 23/9	5.50	12.50	8.28	5.10	51. 16/4 - 21/4				
22. 25/9 - 30/9	5.06	12.50	8.28	5.10	52. 23/4 - 28/4				
23. 2/10 - 7/10	4.98	12.50	8.28	5.10					
24. 9/10 - 14/10	5.35	12.50	8.28	5.10	Arithmetic Mean	5.62	14.42	9.22	
25. 16/10 - 21/10	5.44	10.00	6.90	4.28	Standard Deviation	0.67	.52	.8	
26. 23/10 - 28/10	5.67	10.00	6.90	4.28	Coefficient of Variation	11.92%	1. %	1. %	
27. 30/10 - 4/11	5.87	10.00	6.90	4.28					
28. 6/11 - 11/11	5.58	10.00	6.90	4.28					
29. 13/11 - 18/11	5.61	12.50	8.28	5.10					
32. 20/11 - 25/11	5.40	16.66	10.35	6.40					

Note I : Junnar Bananas : 8% arrival of Poona market. 40% from Junnar comes to Pune. 60% goes to Bombay.

Note II : The stem of the banana bunch is 9% of the total weight. Therefore the wholesale weight is for 9.10 kg and not 10 kg of bananas.

Note III : Six average sized bananas weigh 600 gms, six large ones weigh 700-750 gms, and six very large bananas weigh from 800 to 850 gms. Each bunch of a banana has 6 smaller bunches of about 18 bananas each. Therefore a complete banana bunch should vary in weight between 10.8 kg and 15.44 kg, generally. Most bunches will have bananas of mixed sizes.

*Note IV : Both large and medium bananas come from the Junnar taluka. The Jalgaon variety of banana is being popularly cultivated in the Junnar taluka. Therefore, there is no clear price differentiation between the bananas from the Junnar taluka and the Jalgaon area any more.

Note V : Conversion formula [from dozen to kilogram]

To convert price per dozen to price per 10 kg,

1 dozen medium bananas = 1200 gms, therefore the price for 10 kg (10,000 gms) can be obtained by multiplying the price per dozen by $\frac{10000}{1200}$ or 8.33. This would be the retail price per 10 kg for Grade II Junnar bananas.

Similarly, large bananas which make up Grade I are taken as 1 dozen = 1400-1500 gms, or to convert the price per dozen into the price per 10 kgs, the retail price per dozen is multiplied by $\frac{1000}{1450}$ or 6.9. Grade III is taken to comprise of all the remaining qualities, except for the residual termed "beet".

*Note VI : SEASONALITY: The seasonality of the Junnar bananas is primarily from July to March, with major concentration of arrival between August and February. Some enterprising banana cultivators were re-arranging their planting and care to obtain off-season crops, May through August.

Table 5.10: Weekly Wholesale and Retail Prices (Per Kg.) at the Pune Market, 1977-78

GRAPES (THOMPSON SEEDLESS)

Date	Whole- sale	Retail	Date	Whole- sale	Retail
1. 1/1/77-6/5/77	-	-	29. 13/11 - 18/11	-	-
2. 8/5 - 13/5	-	-	30. 20/11 - 25/11	-	-
3. 15/5 - 20/5	-	-	31. 27/11 - 2/12	4.50	6- 8
4. 22/5 - 27/5	-	-	32. 4/12 - 9/12	4.10	6- 8
5. 29/5 - 3/6	-	-	33. 11/12 - 16/12	3.88	6- 8
6. 5/6 - 10/6	-	-	34. 18/12 - 23/12	4.46	7- 9
7. 12/6 - 17/6	-	-	35. 25/12 - 30/12	4.04	7- 9
8. 19/6 - 24/6	-	-	36. 1/1/78-6/1/78	4.63	7- 9
9. 26/6 - 1/7	-	-	37. 8/1 - 13/1	4.50	7- 9
10. 3/7 - 8/7	-	-	38. 15/1 - 20/1	4.33	7- 9
11. 10/7 - 15/7	-	-	39. 22/1 - 27/1	4.31	7- 8
12. 17/7 - 22/7	-	-	40. 29/1 - 3/2	4.58	7- 8
13. 24/7 - 29/7	-	-	41. 5/2 - 10/2	4.25	7- 8
14. 31/7 - 5/8	-	-	42. 12/2 - 17/2	4.47	7- 9
15. 7/8 - 12/8	-	-	43. 19/2 - 24/2	4.32	7- 9
16. 14/8 - 19/8	-	-	44. 26/2 - 3/3	3.81	7- 9
17. 21/8 - 26/8	-	-	45. 5/3 - 10/3	4.19	7- 9
18. 28/8 - 2/9	-	-	46. 12/3 - 17/3	4.23	7- 9
19. 4/9 - 9/9	-	-	47. 19/3 - 24/3	4.69	7- 9
20. 11/9 - 16/9	-	-	48. 26/3 - 31/3	5.69	8-10
21. 18/9 - 23/9	-	-	49. 2/4 - 7/4	5.77	10-12
22. 25/9 - 30/9	-	12*	50. 9/4 - 14/4	6.00	10-12
23. 2/10 - 7/10	-	12*	51. 16/4 - 21/4	6.75	12-14
24. 9/10 - 14/10	-	12*	52. 23/4 - 28/4	-	-
25. 16/10 - 21/10	6	15			
26. 23/10 - 28/10	-	-			
27. 30/10 - 4/11	-	-			
28. 6/11 - 11/11	-	-			

* These are a few cases of isolated direct retail purchases from neighbouring villages which bypass the wholesale market.

bahar commands about a third of the price of the juna bahar. It takes about 6 to 8 weeks for a nava bahar to acquire the full development of the juna bahar. The price of the second grade is usually between 70 and 80 per cent of the price of topmost grade or Grade I. There are several other lesser grades available in the retail market.

For any calculation of market margins and price spread the third and lesser grade must also be included in the calculations. The lesser grades can be aggregated into an approximate third grade which commands between 65 and 80 per cent of the price of the second grade. Some of the seasons in these tables are longer than the seasonality pattern described earlier. This is so because many cultivators these days try to differ the treatments of fertilizer and water to their crops and thereby there able to begin and the season of their orchard at a different point of time than the main season.

5.4.4 MONTHLY WHOLESALE PRICE VARIATIONS OF THE SELECTED FRUIT

The wholesale price variations at Poona are shown in Table 5.11. Wholesale prices are quite stable at the Poona market when examined on a monthly basis. The price is higher at the beginning of the season and often also during the peak season for that fruit. During the summer months prices are higher for oranges, mosambis and figs. Guava prices are higher in the months December through April. Banana prices are more or less stable through the year, and grape prices

**Table 5.11 : Monthly Wholesale Prices for Selected Fruit
at the Poona Market, 1977-78**

Month/Year	Oranges (Poona- Nagar) Price/ Kg.	Mosambi (Pune- Jalna) Price/ Kg.	Guava (Kalmi) (Pune) Price/ Kg.	Fig (Pune) Price/ Kg.	Banana Price/ Kg.	Grapes (Thompson Seedless) Price/ Kg.
<u>1977-78</u>						
May	1.98	2.02	0.64	4.55	-	-
June	2.08	1.99	0.47	3.60	-	-
July	1.85	2.43	0.46	-	4.62	-
August	1.59	1.35	0.43	-	6.09	-
September	1.36	1.30	0.44	-	5.52	-
October	1.29	1.29	0.44	-	5.28	-
November	1.84	1.65	0.49	-	5.56	-
December	1.89	1.76	0.63	-	5.55	4.27
January	1.37	1.47	0.65	-	5.53	4.42
February	1.30	1.45	0.81	3.72	5.60	4.36
March	1.38	1.80	0.79	4.59	5.71	5.02
April	1.96	1.16	0.64	6.24	-	6.18

are highest at the end of the season. Some this price pattern may be examined along with the arrival pattern for 1977-78 illustrated in Table 5.1 in which the peak seasons may be identified. The wholesale prices by themselves do not tell a great deal more than the pattern of seasonality. In fact, the wholesale prices reproduced here do not always clearly reflect the pattern of arrival in Table . This is because a multiplicity of factors and not just the arrival of that variety of fruit influence these wholesale prices. Since very few wholesale price figures are available in the Gadgil report detailed comparative analysis for the two periods is not possible. In the following section certain important factors such as the coefficients of price variation and the wholesale-retail relationship are examined.

5.4.5 RELATIONSHIP BETWEEN WHOLESALE AND RETAIL PRICES (1930-31 AND 1977-78)

Various aspects of the wholesale and retail price behaviour in the Gadgil survey and the current study are illustrated in Table 5.12. The first difference between the two periods may be noted in the reduction of wholesale and retail price variations as indicated by the respective coefficients of variation. Fluctuation in the retail price for oranges has reduced from 41 per cent in the 1930s, to around 16 per cent. The corresponding decline in wholesale price variations for the other fruits for which comparable data is available in the Gadgil study is a 23 per cent from 70 per cent for mosambis. For other fruits adequate data

Table 5.12 : A Comparative Study of the Arithmetic Mean, Standard Deviation and Coefficient of Variation: Wholesale and Retail Prices of the Selected Fruits at Poona (1930-31 and 1977-78)

	1930-31		1977-78	
	Whole-sale price	Retail price	Whole-sale price	Retail price
<u>Oranges (Dozens)</u>				
Arithmetic Mean	-	1.00	3.30	7.05*
Standard Deviation	-	0.41	0.66	0.97
Coefficient of Variation	-	41.00%	20.00%	13.76%
<u>Mosambis (Dozens)</u>				
Arithmetic Mean	0.34	0.84	3.47	6.73*
Standard Deviation	0.24	0.29	0.83	1.62
Coefficient of Variation	70.61%	34.04%	23.92%	19.66%
<u>Guavas (Kilograms)</u>				
Arithmetic Mean	-	0.29	0.76	1.60
Standard Deviation	-	0.05	0.14	0.23
Coefficient of Variation	-	16.30%	25.32%	16.41%
<u>Figs (Kilograms)</u>				
Arithmetic Mean	-	0.72 [@]	4.39	7.28
Standard Deviation	-	0.24	1.13	1.81
Coefficient of Variation	-	34.20%	25.74%	23.28%

(Continued)

Table 5.12 : (Continued)

	1930-31		1977-78	
	Whole- sale price	Retail price	Whole- sale price	Retail price
<u>Bananas</u> (Kilograms)				
Arithmetic Mean	-	-	5.62	11.3*
Standard Deviation	-	-	0.67	1.20
Coefficient of Variation	-	-	11.92%	10.62%
<u>Grapes</u> (Kilograms)				
Arithmetic Mean	-	-	4.64	8.30*
Standard Deviation	-	-	0.70	1.24
Coefficient of Variation	-	-	15.08%	14.94%

* The retail prices for 1977-78 reproduced for the measurement include the weighted averages of Grades I, II and III. The third and lesser grade must be included in the retail price for a more accurate calculation of retailers' mark-ups.

@ The prices of the poor quality figs that continue to come into the market after the main season is over have not been included here in order to ensure comparability with the 1977-78 prices.

is not available from the 1930s. The comparison of the retail price variations between the two periods indicates a consistent pattern of declining price fluctuation for oranges, mosambis and figs, and for guavas the variation appears to be about the same for both periods.

There is greater fluctuation in the wholesale prices than in the retail prices as is evident from the coefficients of price variation illustrated in Table 5.3. The difference between wholesale and retail price variations appears to be higher for the more sturdier fruit such as mosambi and less for more perishable fruits such as grapes.

The ratio of fruit prices during the Gadgil survey and the current study is in the range of 1:7 for oranges and mosambis, and 1:5 for guavas. Fig prices have risen ten times the level of the Gadgil study. The latter is a reflection of the dropping supply of figs in the Poona district in recent years (as discussed in Chapter III).

The wholesale-retail ratio of prices has improved since the Gadgil survey. Wholesale prices for mosambi are reported to be forty per cent of the retail price. The current study has indicated that the wholesale price is now around fifty per cent of the retail price and the mark-up is now about 90 to 100 per cent of the wholesale price. In the Gadgil survey this mark-up was around 150 per cent of the wholesale price.

5.5.1 ESTIMATION OF FRUIT SPOILAGE IN POONA

Fruits, as perishable crops, are faced with the additional problems of spoilage. Such spoilage takes place in transport, handling and keeping and causes cultivators to receive lower net returns and the retailers to raise their prices to cover this additional cost of marketing.

The initial survey of fruit marketing in the district gave an indication that the spoilage of fruits was probably quite significant. Although relatively little damage or loss in transit between the Poona villages and the Poona city was reported, such loss was occurring at various stages of fruit handling. In order to obtain spoilage data for this study several sellers were asked to keep records of all their fruit spoilage. In addition, as a matter of routine this information was collected from all fruit sellers contacted in the city of Pune. As expected, not all the sellers approached kept the records that they had promised. Nor were all the records complete. However, at the end of the survey a total of 273 data points had been collected for the six fruits being studied here and 615 data points for all fruits taken together. The absence of continuity in the data makes it impossible to comment upon the seasonal nature of the spoilage. The spoilage statistics that have been presented in the following pages offer projections of loss of value in spoilage and enables the computations of realistic costs of retailing.

The first step in the collection of spoilage data was the definition of "spoilage" for the purposes of this study. This determined the nature of data required from the fruit sellers. While the general meaning of the term spoilage is seldom misunderstood, the term must be given a specific statistical concept that will permit analysis. Spoilage in this study is being defined as the percentage loss in total fruit value on account of damage caused by keeping, transportation or improper packing, handling, etc. The records that fruit sellers were asked to maintain for this research were,

- (1) the date of purchase of each variety of fruit;
- (2) the amount purchased;
- (3) the market price;
- (4) the spoilage amount or the amount sold at below the market price for quality deterioration; and,
- (5) the price at which each quantity of spoiled fruit were sold.

The formula we used to calculate the spoilage was thus:

Let x_1 be the original amount purchased

and p_1 the normal market price,

let x_2 be the amount spoiled,

and p_2 be the price at which the spoiled fruit was sold.

Then,

$$\text{spoilage} = \frac{(P_1 - P_2)x_2}{x_1 P_1} \times 100$$

With this formula the following spoilage figures have been calculated. These figures are shown in Table 5.13.

Table 5.13 : Fruit Spoilage (Stall-holders and Cart-holders* Only): Value Lost (due to Fruit Damage) as a Percentage of Retail Price

	Orange	Mosambi	Guava	Fig	Banana	Grape
Average spoilage	10.45	8.00	6.20	11.80	14.80	15.60
Standard deviation	1.61	1.36	0.65	2.37	3.84	6.28
Coefficient of variation	15.41	17.00	10.48	20.08	25.95	40.26

* Almost all the cart-holders included here were banana sellers. Cart-holders that sold grape not included here.

Table 5.13 concentrates mostly on stall-holders and the spoilage statistics quoted by them.

From the above Table it may be gathered that fruit spoilage in the post-regulation period is quite high. There are no earlier (pre-regulation) comparable estimates to permit meaningful comparison. However, in the next section when storage aspects in fruit marketing are examined the shortcomings of cold storage in general, and the MAFCO cold storage facilities in particular, in the matter of resolving the problem of fruit spoilage in keeping, will be outlined.

Some of this 'spoilt' fruit is marketed in the form a residual category known as the beet. The market for this grade of fruit lies in the low income groups.

5.5.2 POTENTIAL OF COST STORAGE AS A SOLUTION FOR FRUIT SPOILAGE

Fruit is a delicate produce and fruit in Poona occurs at various stages of marketing. It has been a tradition in fruit marketing at Poona market for commission agents and traders to use their rented market space for the overnight storage of unsold fruit. Such storage is at normal room temperature and humidity. It is inexpensive, as it simply involves the services of an overnight watchman. The watchman is generally one of the men hired by the commission agent on a fixed monthly salary. At the new location at Gultekadi the spaces are larger and there is further storage space for fruit and containers above the agent's space.

In 1961, the Directory of Cold Storages in India made the following comment:

Perishable commodities like fruits, vegetables, eggs, fish, meat, etc., show very high fluctuations in regard to supply and prices. This may be mainly attributed to lack of adequate cold storage facilities which causes considerable wastage of these commodities. Lack of cold storage facilities also causes glut in the market in the peak period of supply depressing the prices very considerably. In order to avoid this, it is essential to have cold storage facilities for these commodities so as to eliminate possibility of avoidable wastage as also to enable the producer to work out a phased programme of supplies to the market. 10/

But even in 1961, the idea was not a new one. The possibility of cold storage had been considered even as

10 Directory of Cold Storages in India. Directorate of Marketing and Inspection, Government of India, 1961, p. 1.

early as in the 1930s when the 1937 Report on the Cold Storage and Transport of Perishable Produce in Delhi, the second of the marketing series reports of AMI discussed the issue. It has been easier to implement cold storages in the larger terminal markets such as Delhi and Bombay where the arrival of large quantities of perishable produce create a demand for cold storage facilities.

5.5.3 COLD STORAGE FACILITIES AT THE POONA MARKET YARD

The growth in the meat and poultry industry may be considered to be chiefly responsible for the construction of cold storage facilities in the Poona city. With the regulation of the Poona market and the construction of the new Market Yard at Gultekadi, the PAPMC has provided cold storage facilities near the market yard. This is provided with the assistance of MAFCO, an independent Maharashtra State undertaking. To encourage cultivators to use the cold storage facilities an addition was made to the then existing services and terms offered by MAFCO to cultivators and their agents. As a result of this change cultivators can acquire financing to the extent of 80 per cent of the average value of their produce from any nationalized bank. The annual interest for this financing is a minimal 6-8 per cent. The necessary condition that the produce was placed

11 Among fruits, cold storage facilities have been generally used for apples. By 1983, only 8 per cent of the total capacity of the non-deep freeze section was used for apple storage.

either in the cold storage (perishables) or in the government warehouse (non-perishables).¹²

In spite of all these efforts the utilization of the MAFCO cold storage units for fresh fruit had dropped to zero in September 1985.¹³ Individual traders and commission agents had preferred to use Bombay cold storage units even for their apple arrivals,¹⁴ in favour of the MAFCO facilities.

The rates of space rental prior to April 1979 and the rates thereafter at the MAFCO Cold Storage unit are given in Table 5.14.

Table 5.14 : Statement Showing the Rent System of the Cold Storage on Space Area Basis (Rate per cft Per Month) and Revised Rates from 1-4-1979

Space Hired	One year		Six months	
	Old Rate (Paise)	Revised Rate (Paise)	Old Rate (Paise)	Revised Rate (Paise)
Full Floor	25	30	28	35
2000 cft and above	31	35	35	40
1000 cft and above	35	40	38	45
500 cft and above	38	45	42	50

Note : Maximum load permissible will be 1 tonne/125 cft.

Source: MAFCO, Gultekadi.

¹² Maharashtra Agriculture and Fertilizer Corporation.

¹³ This information was provided by B.B. Boob, Deputy Secretary of the Poona Market Committee.

¹⁴ The chageman and technician of the Gultekadi MAFCO Unit, S.N. Kundalkar, supplied this information.

The space rent in 1985 October was 35 paise per cubic foot per month for a minimum period of one year, and 40 paise per cubic foot per month for a minimum of six months. Apart from the space charge there is an additional charge of Rs. 4 per month for every 20 kilograms stored to pay for the refrigeration. This is to say, cold storage charge is greater than Rs. 20 per quintal for a one month period.

There are two MAFCO units in Poona city. There is one at Gultekadi, and the other is in Janawadi. Of these, only the one at Gultekadi offers space for the storage of fresh fruits. This is being emphasized because the temperature and humidity requirements for the storage of fresh fruit is different from those of processed fruit. Processed fruit requires the deep freeze or temperatures below freezing. Fresh fruit deteriorates if frozen and requires temperatures between 2°C and 5°C or about 34°F and 38°F and controlled humidity. The Gultekadi unit has eleven rooms, of which as many as eight are deep freeze rooms (temperature -10°C to -20°C). In terms of storage space, out of a total capacity of two thousand tonnes, two rooms of 500 tonnes and one of 200 tonnes capacity, or sixty per cent of the capacity, is available for produce not requiring the deep freeze conditions. This total capacity is ample to meet the needs as demonstrated by the 50 per cent capacity utilization figures given to us by the MAFCO personnel. The utilization of fruit is from non-local sources. Failing to interest the local traders and commission agents the MAFCO units reached

out to the growing areas such as Ratnagiri (Maharashtra) and Bulsar (Gujarat) for mangoes and to Himachal Pradesh and assembling centres like Delhi for apples. The fruit was directly purchased by MAFCO representatives from these places and processed in their units.

Fresh fruit is not being stored in cold storage in Poona for several reasons. First, and most importantly, the common experience of traders using the cold storage units of MAFCO (at Poona) has been that the fruit deteriorates at a tremendous rate once removed from the storage unit. Moreover, some users have even experienced fruit damage while the fruit is still in cold storage. The likely reason for this, the MAFCO organizers feel, is that the MAFCO storage centre has no humidifier. Fresh fruit will not store well without dehumidification and excess water formation is held responsible for the quick deterioration. The purchase of a dehumidifier is not among the present plans of the MAFCO cold storage centres of Poona and the estimated purchase price of the smallest dehumidifier is over Rs. 1 lakh. At any case, even if such a purchase is conducted by MAFCO, the new expense would only add to the unit cost of storage. Higher cost of storage would be a further deterrent to the use of the cold storage facilities.

It must be emphasized, however, that even if MAFCO is able to provide humidification at reasonable cost under some subsidy programme, the method of cold storage is not really suited to fruit storage in Poona. In the U.S. and other

Western countries where cold storage is commonly used for fruit, the process of keeping fruit under cooler temperatures does not end at the cold storage. All retail grocery stores in the U.S. are air-conditioned and the fruit once removed from the cold temperature is not exposed to the heat of the tropical sun, as is the case in Poona and elsewhere in India. Further, all homes in the U.S. have some form of refrigeration to pick up the temperature maintained storage process from where fruits leave the retailing units. In Poona the conditions are quite different. The retailer is a small independent business unit with relatively little capital (as compared to the corporate chains that own most of the retail business in the U.S.). Refrigeration of fruit at the retail unit is not possible in India at this time. Therefore, cold storages are not really a suitable form of fruit storage under the conditions existing in Poona.

5.6.1 FRUIT PRESERVATION IN POONA

Fruit preservation (and the storage of fruit in a processed form) offers the problem of spoilage. Fresh fruits spoil easier than fruit in some processed form such as canned fruit slices, jams, jellies, dehydrated fruit, etc. The conversion of fresh fruit into a processed form would spare cultivators the reduced net earnings, and perhaps even encourage retailers to reduce their price mark-ups.

Organizations such as MAFCO have preferred to first transform the fresh fruit into pulp or juice, and then

market these processed units to the Middle Eastern Markets. Some information regarding the economics of some of their efforts at fruit preservation and export is being reproduced here.

The idea of exporting fresh or processed agricultural products is impractical for the Indian cultivators as the international market for processed fruit is dominated by large corporations who are very well capitalized.

5.6.2 EXPERIMENTS WITH FRUIT PRESERVATION AND EXPORTS IN POONA

Some enterprising members and administrators of the Poona Agricultural Produce Markets Committee have been looking into the possibilities of fruit preservation to what appears as yet an unprepared audience. Even these efforts have been sporadic and without any real determination. Their proposal to set up a Rs.40 lakh banana powdering unit from the USSR died an early death. A raisin manufacturing (dehydrating) machine proposal by a local entrepreneur (Bhagwat) was good humouredly entertained but never backed with financial or other cooperation by any organization or individual. MAFCO, a better financed government organization, has been able to follow up the hunches of some far-sighted administrators and have explored this virgin territory. Here are some of the results of the experiments with fruit preservation and exports.

5.6.21 SMALL SCALE RAISIN MANUFACTURING¹⁵

The results promised by the local manufacturer of a raisin producing machine, though yet to be tested by others, appear to be encouraging. Raisin manufacturing from grapes is a simple process of grape dehydration. Fresh grape may be purchased at the average price of Rs. 7 a kilogram. The manufacturing machine has been priced at about Rs. 5,000. The life of the machine is expected to be about ten years. The total cost of operating the machine at 1984 prices is Rs. 15 per eight hours' of daily operation. The machine can process 1 kg of grapes in 1 hour. The total estimated loss in weight as a result of the dehydration process is 50 per cent. Therefore, an hour of operation will produce half a kilogram of raisins from 1 kilogram of grapes. The expected actual operation in an 8 hour day would be about 5 hours. Therefore, an 8 hour day may be expected to process 5 kilograms of grapes to produce $2\frac{1}{2}$ kilograms of raisins. The estimated cost of producing a quintal of raisins would then be:

	<u>For 5 kgs.</u>
5 kgs of grape @ Rs. 7 a kg x 250	Rs. 35
Total cost of operation per 8 hours	<u>Rs. 15</u>
Estimated total cost per 5 kgs.	Rs. 50

Therefore, estimated cost per quintal is approximately Rs. 1,000.

¹⁵ Deputy Secretary PAMPC, B.B. Boob has the details of this proposal.

The market price for raisins is about Rs. 80 a kg or Rs. 8,000 a quintal, retail, promises a fair margin of profit.

5.6.22 MAFCO'S EXPERIMENTS¹⁶

MAFCO's experiments with the processing and export of packaged mango pulp have been reasonably successful even against the tough price competition from the Latin American countries. Five MAFCO factories have each been handling about 1200 tonnes of mango annually. Mango is purchased in bulk directly from Ratnagiri, Belgaum, Bangalore and Bulsar, though Alphonso and Totapuri were the two principal varieties handled. Besides mango, such preservation efforts have been made for pineapple, fig, guava and banana. Efforts with oranges were left to NOGA and NOGA does not have a unit in the Poona district.¹⁷

The following is a summary of the economics of fruit preservation and marketing, as experienced by MAFCO.¹⁸ Since only a few fruits have been experimented with, the results of all the major experiments are being included here.

¹⁶ These details were acquired from Mr. Marwaha, the Production Manager of the MAFCO Gokhalenagar-Janawadi Unit. The information is current upto October 1985.

¹⁷ Nagpur Orange Growers Association.

¹⁸ The source of information in this section is the Production Manager, Mr. Marwaha of the Gokhalenagar Unit of MAFCO.

I. MANGO(a) Purchase Price

Ratnagiri	Belgaum	Bangalore	Bulsar
Rs.6/kg	Rs.5.50/kg	Rs.5.50/kg	Rs.6.30/kg

MAFCO representatives go and purchase the Ratnagiri mangoes personally from the cultivators. In addition to the price, they therefore also incur a transportation cost of Rs. 0.25/kg. Mango from the other areas is purchased from contractors and therefore include the cost of transportation.

(b) Processing Cost:

Labour	Electricity	Storing Charges	Total
Rs.1/kg of pulp	Rs.0.25/kg of pulp	Rs.0.75/kg of pulp	Rs.2/kg of pulp

The yield for mango pulp after a 25 per cent shrinkage and spoilage, and another 25 per cent for processing waste, is estimated at about 50 per cent. Thus at the average price of Rs.6 a kg of mango, 1 kg of pulp will require Rs. 12 of mango.

(c) Packing:

Mango pulp is packed in half kilogram polythene bags for export as well as domestic marketing. The cost of the polythene bags plus the cartons in which these are packed is Rs. 1.50/kg of pulp. These are transported in non-refrigerated, insulated vans both to local centres as well as to exporting outlets like Bombay.

(d) TransportationPoona to Bombay

Rs.0.25/kg of pulp

Within Poona

Rs.0.15/kg of pulp

Bombay to the Middle Eastern Countries:

Rs.2.50-Rs.3.00 a kg depending upon the time of the year and the shipping company (average Rs.2.75/kg).

(e) Total Cost per 1 kg of Pulp:

Rs.18.50/kg.

(f) Market Price:

Rs.19 to Rs.20/kg

(g) Government incentive at 10% of value of the agricultural produce being exported:

10% of Rs.20 = Rs.2.00.

(h) Net Profit Per Kilogram of Pulp being exported:

Rs. 20.00 - Rs. 18.50 = Rs. 1.50/kg

Plus Government
Incentive

Rs. 2.00

Rs. 3.50/kg
-----II. GUAVA

Guava of the Lucknow 31 variety only was purchased from Poona, Jalna, etc., at the average price of Rs.1/kg. The processing costs of guava pulp was Rs.0.60/kg for labour and Rs.1.75/kg of pulp for materials. The packing cost is Rs.1.60 a kilogram. All other costs are the same as for mango. Fruit loss in the processing is only 20 per cent for guava. Two MAFCO units together produced 50 tonnes of

guava pulp in 1983-84. They narrowly broke even with the 10 per cent export incentive.

III. BANANA

The experiment was conducted with 1 tonne of banana purchased from the Poona wholesale market. The total processing cost (especially the cost of the citric acid required for banana to prevent blackening of banana pulp) was too high to make this project feasible. The processing cost alone was Rs.4/kg, whereas the prevailing price at the international market was in the range of Rs. 7 to Rs. 8 a kilogram.

These initial efforts to touch the foreign market have not produced the most encouraging results. The chief reason for this is that the Middle Eastern markets are receiving both fresh and processed fruits of good quality from the Latin American countries. The Latin American fruit industry has a corporate structure that permits it to profitably supply the fruit at lower costs and consequently charges much lower prices.

One of the problems that the Indian fruit industry faces in this regard is the high capital cost and the low productivity permitted by the technology currently being used. The initial investment for such a plant which has a capacity of producing 1 tonne pulp a day is Rs. 10 lakhs at 1984 prices. The smallest available compressor for the purpose is of 30 tonnes. The operating cost of smallest compressor is:

Electricity	Rs.200/a day
Furnace/Boiler	Rs.400-Rs.500 a day
Labour (including administration)	Rs.1 a kilogram of pulp (minimum)
Depreciation is at 10% and interest on capital at about 12%.	

Besides the reduction of fruit spoilage price variation can be reduced by the availability of reliable marketing intelligence. The following discussion is about the availability of market intelligence at the Poona market.

5.7.1 THE ROLE AND IMPORTANCE OF MARKET INTELLIGENCE

Well-informed market operators provide for a more efficient marketing system. The availability of quick and reliable market information also enables cultivators to respond more quickly and rationally to market indicators. It is to be expected, therefore, that the provision of market intelligence on matters such as prices, arrivals, market facilities, credit rates, weather conditions, crop forecasts, market expectations, etc., makes it possible for cultivators to plan ahead more efficiently. Better planning on the part of the cultivators should ensure them higher returns from agricultural production.

The 1972 Bulletin of Market Intelligence describes the role of market intelligence accurately in the following quote:

The role of market intelligence, in whatever sphere it is organised, is to provide a running commentary on the various economic forces operating in the markets or

elsewhere which influence market behaviour with a view to enabling a better understanding of the market economy as it is and as it may be in the foreseeable future. In an economy like ours market mechanism and price incentives play a valuable part in promoting the flow of resources in the planned channels. Market information enables us to know the effectiveness of market mechanism and to devise ways and means for making it more effective. Market intelligence is also a prerequisite for formulating a proper price policy, watching its execution, discovering the trends and deciding further action. Market intelligence has to be studied along with other general information having a bearing on prices, sales, wages and incomes including the order of development outlay, money supply with public, credit extended by various sources, propensity to consume and to stock, demand estimates based on population growth, extent of urbanisation, changes in levels of incomes and consumption pattern, etc. .19/

'Market Intelligence', therefore, implies more than the mere collection and presentation of statistics on prices, production, arrivals and sales. The purpose and utility of market intelligence is considerably wider than that. It includes not only the provision of current market information or "market news" but also scientifically computed market projections regarding the market expectations, which is generally called "Outlook Information". The presentation of both reliable current market information as well as reasonably dependable projections regarding the future expectations in the areas of interest to agricultural

19 The Ministry of Agriculture's June 1972 Bulletin on Market Intelligence in India, Vol. I, published by the Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi, June 1972, p. 1.

producers, market intelligence performs an essential marketing service. The utility of market intelligence will be evident in several ways. It will aid in better planning in matters related to the farm business as a whole. Market intelligence could guide cultivators in the selection of the crops to produce, the best times for planting and harvesting based upon climatic projections, and in the management of crop and livestock enterprises. By providing information regarding actual and potential supplies in the market, the periodicity of arrivals of various commodities and actual and expected price fluctuations, market intelligence could enable the cultivators to make the most profitable choices in the time of sale and the selection of markets.

In fact, market intelligence can provide such guidance and information as can serve beyond the immediate needs of the cultivators. Long-term output and price projections could enable producers to re-adjust production in a manner that gluts and price depressions may be averted. Information regarding cooperatives formation and the availability of extension services could offer the more enterprising cultivators' new and broader options. With increased commercialization in agriculture, adequate knowledge of existing market conditions and projections of expected trends become crucial tools for efficient functioning and future planning.

To borrow from the 1972 Bulletin on Market Intelligence in India one more time:

The Government (and the cultivators)²⁰ need detailed information on these items, so that economic policy evolved by them may apply to realistic conditions rather than to assumed conditions. To serve a useful purpose in policy formulation, market intelligence has to provide at least a rough clue to the probable behaviour of the forces likely to influence the market in the near future. For instance, the final estimates of crop production in our country become available only after the crop has been harvested and the larger part of it even marketed, but the market prices begin to be influenced by the prospects of the crop even before it is harvested or it actually starts flowing into the market. It is the role of market intelligence to provide regularly periodical information on the prospects of standing crops before precise quantitative estimates of their actual outturn become available and thereby provide a valuable clue to price behaviour in the present and in the immediate future. 21/

The powers of adequate and reliable market intelligence are, therefore, undeniable. Still, it should be cautioned that much of the utility of such market intelligence depends upon the two key words "adequate" and "reliable". Market intelligence provided by the Market Committee, for instance, will be meaningful only if the cultivators find the market records maintained by the Committee to be accurate, and the projections to be reliable. Careful maintenance of accurate records is, thus, essential for the acceptability of the market intelligence supplied

20 The words in the parentheses have been added by this researcher.

21 Bulletin on Market Intelligence in India, Vol. I, op.cit., p. 10.

"SAKAL" , 9th December 1986.

गावपान १२/१४, दुधी भोपळा गावपान ६/२२, काकडी खिरा १६/३०, तळेगाव ५०/८०, कारली हिरवी २६/३०, पावठी २६/३०, झंगार ८/२२, पापडी हिरवी १४/४०, पडवळ २५, फ्लॉवर नं. १ २०/३०, नं. २ १०/१६, कोबी गावपान १०/३२, बागी चमेली ५/१०, वैशाली ३/८, काठी २०/२५, मांजरगोटा १०/१२, सुण हेंदणवाट १६/२२, झोंगरी २५/३०, नवलकोल ६/८, ढोबळी मिरची कायमीरी २५/६०, तोंडली कच्ची १६/२२, जाडी १०/१२, पावटा २५/३८, रोवगा गावपान ३०/३२, डबल बी ३५/४५, गाजर गावपान

बाजारभाव

६/२५, गाजर दिल्ली १५/२०, ताळी कऱ्हाड ३/८, बालवर १८/४५, बोट ८/१२, कोहळा ८/१६, आरवी २०/२५, केरी ३०/६० हाभरा भाजी ३०/४०

पालेभाजी दर १०० जुड्यांचे

कोथवीर १०/३५, मेथी १६/४५, रोपू ५०, कोदा पात १२/२८, चवळय ३०, मुळे २०/६०, जुका २५, पालक २२/३०, मका सफेद हयमॉड २५, कडीपत्ता ७०, पुदीणा ४०.

फळाबाजार

सफरचंद रॉयल डेलिशस १६ किलो पेटी ५०/१२०, महाराजा १६ किलो पेटी ५०/१००, अर्मीकन १६ किलो ४०/८०, सीताफळ डींग ४/४०, बोट ४/२८, पोपई नामा ५/३०, बोट १/४२, फेक गावपान ४ डझन पाटी रु. ४/१३, बोट ४/२२, डाळिव गणेश ३ डझन पाटी ४८/६५, बोट ४/१७, अननस १ डझन २५/५०, चिक्कू पाटी १०/५५, मोसंबी सातापा ३ डझन पाटी ३०, ४/५ डझन पाटी १५/२५, ८ डझन गोणी ७०, संत्रा तळेगाव मोठी साइज ३ डझन पाटी १२/२५, ४ डझन पाटी १२/१४, ६ ते १० डझन पेटी ३०/१२०, लिंबू गावपान गोणी ७/६०, बोंबे १० किलोस १८/३७, केळी १० किलोस १२/१५, ७५, ट्रासे जोटा ३०/४५, हाग १० किलो १२५/१००.

फुलांचे दर

(बी.बी.बनकर याजकडून ४४३४२१) भाव दर किलोस रुपयात बिजली ४.००, गुलछडी ६.००, पिक्की शेंवती ५.००, झेंडू ३.००, गुलटोक ५०

(कृषि उत्पादन बाजार समिति, पुणे)

कांदा फुसुगी किंवटल १४०५, जुना नं. १ १५/२०, नवीन नं. १ १४/१७, नं. २ ८/१३, नं. ३ ४/८, बटाटा तळेगाव किंवटल ४८५ नं. १ ३२/३८, नं. २ २८/३२, नं. ३ २०/२८, जालंदर २०/२५, लसूण गावपान नं. १ २६०/२९०, नं. २ २४०/२६०, आले सातारी किंवटल ४० ४५/५०.

फळाभाजी दर १० किलोचे

मेंढी गुप्तासवनी नं. १ ३०/३५, नं. २ २५/३०; गावार, गावपान २८/३५, सुली ४०/४५, रोमटो वैशाली १६/२५ रुपया २५/२८, सिटर २८/३५, गावपान ५/१०, रश्मी २५/३५, चमेली १०/१६, मटार सिमला ५०/६०, इंदूर १०/३८, पेंवडा-श्रावणी २५/३०, खाकी १२/२०, दोडका गावपान २५/४५, मिरची ज्वाला १८/२५,

पेसे, तोरडा ४.०० ऑस्टर १.००, १.२५, गुलाब गडडी ३.००, गलाड्या (शेकडा) ८० पेसे, लिप्ली बंडल १.५०, मुंबई कागडा पुडी २.००, नारायणगाव कागडा पुडी १.५०, राजा शेंवती ६.००, अंडी -कोबडी बाजारभाव ए. एफ. सी. सी. इंग्लिश अंडी शेकडा ६१.००, डझन ८.००, एका अंड्यास ७० पेसे, गावठी अंडी चारशेला ३४०.००, शेकडा १००.००, डझन १२.००, एका अंड्यास १.०० रुपया, गावठी कोबडी (किलो) ३०.००, इंग्लिश कोबडी (किलो) २०.००.

सांगली हळद बाजार

सुलता ६८४.००, बाबून ६९२.५०, घटन ६८१.५०, बंद ६९०.५०.

Price Quotes For Fruit in
A Regional Newspaper

by Market Committees. Therefore, extreme care must be taken on these accounts.

5.8.1 CONCLUDING REMARKS ON PRICE VARIATIONS OF FRUITS AT POONA

In the final analysis of prices at the Poona market certain patterns emerge in the wholesale and retail price behaviour. First, wholesale fluctuations are found to exceed the fluctuations in retail prices. A comparison with the Gadgil Report indicates that such a wholesale-retail behaviour was evidenced also in the 1930s. A difference to be noted, however, is that price fluctuations are much less in the post-regulatory phase of fruit marketing at Poona than during the time of the Gadgil Report. The retailer's mark-up is about 100 per cent of the wholesale price for each of the six fruits examined in this study.

Some of the retailer mark-up is attributable to frequent fruit spoilage experienced in transit and handling. Spoilage eats into the farmers' returns as spoilt fruit is sold as beet at very low prices. The problem of spoilage has not been solved by the cold storage unit constructed at the Poona market. Fruits produced in the Poona district spoil easily once when removed from cold storage unit. This factor and the high costs of cold storage keeping, discourage the use of cold storage facilities for fruit storage. Consequently other solutions to fruit spoilage have been looked into in this chapter. One possible solution is fruit preservation. Another method of improving marketing and

the farmer's share in the consumer's rupee is cooperative marketing. Market information of a good quality would offer a certain fillip to steadier prices and better returns to cultivators. The next chapter takes an overview of fruit marketing in Poona and examines the extent to which the structure has improved since the 1930s. Certain recommendations will also be offered in the following chapter.

APPENDIX TO CHAPTER V

In order to test the magnitude the mark-up between the wholesaler's price and the retailer's certain consignments were followed from the point of wholesale to the point of retail. First, ten tender sales were observed at the Gultekadi market for oranges, mosambi and chickoo. The copies of sales slips prepared for the cultivators and retailers by the commission agents were collected from the PAPMC and compared for inaccuracies. The selected consignments were then followed up to the points of retail. At this point persons unknown to the retailers were sent to these retail units to purchase the same varieties of fruits from the lots purchased that day. These retail prices were then compared with wholesale prices of those very consignments. The retail-wholesale mark-up was found to be quite high, and the retail prices were between ninety and a hundred per cent of the wholesale prices. This effort at cross-checking the retailer's margin ensures this research of the accuracy of the margins quoted in Chapter IV of this text.

CHAPTER VI

CONCLUSION : AN APPRAISAL OF FRUIT MARKETING
IN POONA IN THE POST-REGULATORY PERIOD6.1.1 AN INTRODUCTORY NOTE

The concluding chapter provides a researcher with an opportunity to make the final assessments and comments upon the subject of research. For this study, this is the time to examine the degree to which the fruit marketing structure in the Poona district has increased in efficiency during the post-regulatory period.

The effectiveness of a regulated market in the provision of complete package in improved marketing structure has been a subject of some doubt even among the earlier appraisals of market regulation such as the 1951 enquiry by M. L. Dantwala. In this report¹ Dantwala points out that the best that market legislation can do by itself is to equalise bargaining power and create conditions more conducive to more perfect competition. He goes on to add:

This would necessitate strengthening the organization for market intelligence, storage, grading, pooling and adequate credit and finance, to mention a few important items, ... The point to be

1 Report of the Enquiry into Regulated Markets in the Bombay State, Printed at the Government Central Press, Bombay, 1951, pp. 4-5.

noted is that unless the attack is from all key points, even the best isolated piece of legislation may not yield the desired result. ^{2/}

The assessment of the performance and achievement of the regulated fruit market of Poona must also assess the extent to which these "auxiliaries of good marketing", as Dantwala puts it, (the infrastructural requirements of good marketing) have been made available.

6.2.1 FRUIT MARKETING IN POONA : A SUMMARY OF THE SALIENT FACTORS

Since the study of fruit marketing is in essence an examination of how marketing affects the cultivators, certain characteristics of these cultivators have been found to have a direct bearing upon marketing practices. One of the findings of this study is that the average size of an orchard in Poona district is about an acre large. The general pattern of fruit cultivation in this district is one of scattered and small orchards. While it is true that the cultivation of fruits in the Poona district is confined to certain villages in a few talukas, the individual producing units are not consolidated. The pattern of cultivation in the district continues to be more or less traditional. It is indicated in the Gadgil report that fruit cultivators of the 1930's generally relied upon the services of

2 Ibid.

middlemen for the marketing of their fruit. The construction of roads leading to the villages in recent years and the availability of trucking services at most of the producing villages has reduced the cultivators' reliance upon the middlemen's services. One of the findings of this survey is that the middlemen's share in the marketing of fruits (in areas other than Junnar) has dropped to around one-third of total marketable fruit of the district.

Another finding of this research is that the ^{share of} cultivators' ^{net returns} in the consumers' rupee is 33-39 per cent for each of the six fruits being studied here. A comparison with the Gadgil Report of the 1930's indicates that there has been a reduction in the costs of marketing over the years as truck transportation has become available at charges lower than before. Costs at the market are also standardised and reduced since market regulation. Even so, marketing costs are still between a fifth to a fourth of the retail price. The retailer mark-up is almost one hundred per cent of the wholesale price. It is not clear from the Gadgil report as to the exact dimensions of such retailer mark-ups in those time. The specific discussion on the subject of retailer mark-ups³ offers examples of hawkers only. These examples indicate hawker mark-ups of around 73 per cent of the wholesale price, or that the

3 Gadgil Report, pp. 112-114.

wholesale price is about ^{50%} 57 per cent of the retail price,⁴ while in another instance the mark-up is estimated at 23 per cent of the wholesale price. The mark-up for stall holders is much higher.⁵ There was considerable variation in wholesale prices in the 1930's which is now much reduced. Calculations of coefficients of variations for wholesale and retail prices for both periods indicate a much lesser price fluctuation today.

Some of the other changes in the marketing structure since the Gadgil Report are matters such as those related to market regulation. With market regulation all marketing practices at the Poona market are standardised and open auction has replaced the closed auction sales of the Gadgil Report. These changes may be summarised in the findings of the immediately following section.

6.3.1 FRUIT MARKETING IN POONA : AN APPRAISAL OF POST-REGULATORY MARKETING

The post-regulatory structure of fruit marketing in Poona may be evaluated broadly by reviewing the changes in the following aspects of marketing:

- i) Open auction and returns
- ii) Spoilage and storage
- iii) Market arrivals

4 Ibid., p. 113.

5 Ibid., p. 113.

- iv) Price fluctuations
- v) Marketing costs and market channels
- vi) Incidences of self-marketing and the role of middlemen
- vii) Marketing credit, intelligence and other facilities that encourage self-marketing, and,
- viii) Cooperative marketing.

The assessment of market regulation as an instrument of agricultural policy is based upon the objectives that have inspired the introduction and implimentation of the PAPM Act. To what end the findings of this research indicate that market regulation has succeeded in meeting its objectives will be examined in the following paragraphs. The findings of this research are of mixed nature. Some aspects are encouraging and indicate that the fruit marketing structure of Poona is more efficient than it was in the 1930's as reported by the Gadgil Report. Some of these positive changes have occurred gradually over the years. A few of these changes are the direct product of the regulation of the fruit section of the Poona wholesale market yard in late 1976. The major positive changes found by this research are the following:

(a) The marketing costs such as charges for weighment, measurement, unloading, unpacking, grading, the

commission salesmen's services etc. have been regulated. These were standardised under the Poona Agricultural Produce Markets Act and the level of enforcement has increased over the years. Unjustified deductions and miscounting of fruit to the disadvantage of suppliers, practised regularly prior to market regulation, have almost been eliminated.

(b) Truck transportation has replaced other means of transportation of fruit to the Poona market such as railway and bullock transport ^{of} the 1930's, ^{thereby} reducing damage in transit. Truck transportation is quicker, begins close to the orchards, travels during the cool of the nights, and the fruit is covered with tarpolin to protect against rain and wind.

(c) A new fruit section to the wholesale market yard at the Gultekadi location was added in 1979. The new location is much larger than the old market yard in the heart of the most congested part of the city. The new location has ample storage space. There is also more space for trucks to park and unload, and faster unloading of the fruit takes place. Cold storage and banking facilities are available very close to the market yard and both are very easily accessible. Accommodation is now available for farmers at the market yard to enable farmers to frequently visit the market yard. The PAPMC office is situated closeby and there are sympathetic officers available from very early in the

morning till 6 pm to help resolve marketing disputes and provide information.

(d) The PAPMC has been encouraging the grading of fruit. Fruit are generally sold in more grades than reported by the Gadgil Report.

(e) Grapes generally come to the market in corrugated boxes and not in the less protected baskets of the 1930's. The use of these boxes has also introduced a fairly high degree of standardisation in grape marketing.

(f) Since the regulation of the market the PAPMC has accepted responsibility of maintaining records relating to the marketing of all regulated agricultural produce. This encompasses all fruit and other agricultural produce coming to the Poona market. PAPMC collects all sales slips with details of costs at the market. By means of the information from the slips the PAPMC maintains records of daily wholesale prices by each unit of sale and daily arrivals in both units of sale as well as their monetary value.

(g) Wholesale prices at the Poona market are published in some of the major vernacular newspapers of the region.⁶ Prices regarding some of the major agricultural

⁶ Fruit prices are published in Marathi in major newspapers as the Kesari, Sakal and Tarun Bharat.

produce (but not for fruit) are announced in Marathi on the radio as well. These efforts at dissemination of market information have been supplemented with efforts towards the collection of price and arrivals information from other markets of interest to the Poona farmers with the help of the TELEX system of information transmission. By the end of 1986 such a daily intelligence exchange arrangement had been successfully established with the Delhi market, and efforts were in progress to establish similar exchanges with the produce markets at Bombay, Nagpur and Sholapur.

(h) The closed auction system of wholesale that had been the cause of much exploitation of the farmers has been replaced. In some cases the open auction system has replaced the old hatta paddat or secret auction system and in other cases the tender system (also an improvement on the secret auction system) is in use.

(i) There is representation of the cultivators in the marketing board. The representative cultivators are in a position to promote and enforce the cultivators' interests in the marketing structure at the Poona market.

(j) There are commercial and cooperative banks in all taluka headquarters and even in some of the more important villages. Cooperative and land development banks are easily accessible to the fruit growers of Poona. Efforts towards the financing of grape cultivators begun in Bijapur and

Nasik districts provide examples of how fruit farmers in Poona may be adequately financed for both cultivation and marketing with only their orchards as surety.

(k) Roads leading to all the taluka headquarters and the major villages are metalled, even if the quality of the metalling is often poor. This is a vast improvement on the rough katcha roads mentioned in the Gadgil Report.

(l) One serious attempt has been made in the district towards the cooperative marketing of fruit. Although this effort at cooperatively marketing bananas from the Junnar taluka to the Poona market cannot be regarded as a successful attempt, it was the pioneering effort in this direction.

(m) The incidences of self-marketing of (via trucking agency) fruit have increased over the years. (Around 6 per cent of the interned cultivators are not selling fruit to middlemen.) This increase may be attributable chiefly to the construction of metalled roads and the increased availability of truck transportation to the farms at reasonable rates. However, at least a small part of the credit for this change may be due to the implementation of market regulation at Poona.

(n) Efforts towards fruit processing and preservation have been observed in Poona. The MAFCO cold storage units in Poona have processed several fruit, although their

most successful effort so far has been sale of mango pulp made from Ratnagiri mangoes. There have been successful efforts at fruit preservation and processing in the Kulaba district which provide examples of successful conversion residual fruit into profitable and useful products in Western Maharashtra.

At the same time the marketing structure has retained many aspects of the inefficiencies describe in the Gadgil Report of fifty years prior.

(o) Price Fluctuations

A comparison of wholesale and retail prices for the six fruits of interest to this study before and with the findings of the Gadgil Report and the post-regulation Poona market illustrates a decline in the coefficient variation for all six fruits. The additional storage at the Poona market yard and the price information that is published in Marathi newspapers available at various cooperatives and talathis' offices may be at least partially credited for this positive change. There is indication in the price data that price variation for fruit at the Poona market has declined a little after the regulation of the market.

Some of the less encouraging findings of this study are:

(a) The implementation and supervision of the market regulation are not very effective. The commission

agents try to get around the market regulations whenever possible. The large size of the residual categories are partially due to a certain degree of misrepresentation.

(b) The marketing costs are between 11.5 per cent and 22 per cent of the retail price and 30 per cent to 40 per cent of the wholesale price. Of this, costs at the Poona market are about 3.7 per cent ^{to} 5.7 per cent of the retail price (and 7.12 per cent ^{to} 9.83 per cent of the wholesale price).

(c) The Poona orchard growers' net returns range between 33 per cent and 39 per cent of the Poona retail price. Market regulation has made a relatively small increase to this percentage share by reducing irregular charges and deductions at the market. The net returns for the farmers are especially low in view of the short distance of transit involved between the Poona villages and the Poona wholesale market yard.

(d) The tender system of wholesale is being used for the sale of many fruits instead of the open auction system. Under the tender system retailers often whisper their quotes in the commission salesman's ears instead of saying the price aloud. The price settlement process therefore continues to be secret.

(e) Fruit packaging remains the same as before regulation for most fruit. In fact most of the fruit are

still marketed in baskets protected with paper, leaves, and grass. The protective layering is not thick enough to offer adequate protection against fruit bruising through the various processes of marketing. The baskets currently used for packaging figs, guavas and many of the other fruit are about the same as the ones described in the Gadgil Report, with only minor changes. Even some of the grape varieties (other than Thompson Seedless) continue to arrive at the Poona market in baskets. A fairly large part of the Poona mosambi still reaches the Poona market in jute sacks (gonis) with very little protection other than the fact they are picked when still green and hard.

(f) Middlemen continue to play an important role in the marketing of fruit such as oranges, mosambi, banana and grape. The services of the middlemen are still sought though less frequently than before. About a third of the citrus growers of Poona sell their produce to middlemen. Middlemen continue in their critical roles as financiers, sources of market information and even suppliers of inputs. For the services they provide the middlemen charge 10-12 per cent of the retail price as payment.

(g) In spite of the use of middlemen's services, under the existing market structure the net returns accruing to the farmer is not necessarily higher through self-marketing than it is through middlemen marketing. This is

possible because of the substantial economies of scale that middlemen enjoy.

(h) Record keeping by the PAPMC is not very accurate or reliable. Moreover, records are maintained in such overly aggregated form as to conceal the vital detail. Consequently, the farmers are left to continue their dependence for market information largely from middlemen and neighbouring farmers. Moreover, the market information that is announced on radio from Bombay does not as yet include information regarding fruit from Poona. The TELEX method of collecting intelligence from other markets is also as yet in infancy and does not bring information from the markets of specific interest to the Poona farmers, i.e. the Bombay and the Gujarat markets.

(i) The only cooperative marketing effort attempted in the area did not succeed. The faltering progress and the ultimate demise of the cooperative marketing organization was caused by a conflict of personal and cooperative interests of the guiding members. Although the initial effort failed there have been no follow up efforts in the district to attempt cooperative marketing taking care to avoid the pitfalls of the first effort.

(j) Extension work in the villages is of very limited nature where exists at all. The farmers must continue to look for reliable production and marketing information from other farmers and middlemen.

Telex Message with Price Information
Between the Poona & Delhi Markets

POONA APMC OUR RATES DATE 9.12.86

- | | | |
|-------------------------|----------|-----------|
| 1) ONION FURSUNGI NO.1 | 10 KG. | 15 TO 17 |
| | NO.2 | 12 TO 14 |
| 2) POTATO TALEGAON NO.1 | 10 KG. | 35 TO 38 |
| | NO.2 | 30 TO 32 |
| 3) TOMATO SISTER | 10 KG. | 25 TO 30 |
| | GAORAN | 6 TO 14 |
| | VAISHALI | 20 TO 30 |
| | INDAM | 25 TO 33 |
| 4) CABBAGE | 10 KG. | 18 TO 25 |
| 5) FLOWER | 10 KG. | 20 TO 25 |
| 6) BANANA | 10 KG. | 12 TO 15 |
| 7) LEMON 1 GON | 25 TO 70 | |
| 8) APPLE ROYAL | 5 KG. | 40 TO 60 |
| | 15 KG. | 55 TO 145 |
| 9) MUSUMBI 3 DOZ | 30 TO 40 | |
| | 4 | 20 TO 30 |
| 10) ORANGE 3 | 25 TO 30 | |
| | 4 | 20 TO 25 |

DELHI APMC RATE DATE 9.12.86

- | | |
|-----------------------------|-------------------------------------|
| 1. ORANGE NAGPUR 96 PCS BOX | 55 TO 75 |
| | 145 PCS BOX 75 TO 95 |
| | 200 PCS BOX 35 TO 50 |
| 2. LEMON MP/MAHARASTRA | 40 KG BAG 140 TO 160 |
| 3. POTATO SIVKA/PUNJAB | 80 KG BAG 155 TO 165 |
| 4. ONION NASIK N.C. | 40 KG BAG 90 TO 100 |
| 5. TOMATO RAJASTHAN | 20 KG BOX 28 TO 30 |
| | HARYANA /LOCAL 40 KG BKT 130 TO 160 |
| 6. CAULIFLOWER HARYANA | 40 KG BND 25 TO 40 |
| 7. CABBAGE UP | 40 KG BAG 35 TO 40 |

BANANA AND APPLE RATES ARE NOT AVAILABLE
I WILL PASS AFTER SOME TIME PL
THANKS

XXXXXXXXXXXXXXXXXXXX
OK THANK YOU

(k) The problem of fruit spillage, especially in inventory, has not yet been solved. Spoilage increases the costs of retailing on the one hand and the size of the residual category in wholesale on the other. The wide margins at the retail level maintained to allow for fruit spoilage, and the large proportions of fruit sold as beet (waste) are further confirmations of the spoilage projections presented in this research.

Efforts towards fruit preservation and processing are still very limited in Poona district. MAFCO has processed chiefly mango into mango pulp. There have also been some attempts to make banana chips and raisins. But the MAFCO centers, even those situated in Poona, go out of their way to the major producing areas in other districts such as Ratnagiri, Nasik and Jalgaon to make their purchases of fresh fruit. Other than the limited MAFCO efforts, the preservation and processing of fruit has not been attempted commercially at Poona.

6.4.1 RECOMMENDATIONS OF THIS RESEARCH

The corrective solutions to the structural problems relating to fruit marketing in Poona may be tackled both within the framework of market regulation as well by organisationing forces outside the purview of the market regulation. The following recommendations will call upon the participation of the PAPMC as well as other organisations.

The structural problems such as are to be found in fruit marketing in Poona may be addressed more directly if agricultural policies specifically targeted to this end. Market regulation has the potential of performing an effective supportive role in such reform. The following are the recommendations of this research:

(1) Market Reform and Standardisation

In order to make the records maintained by the PAPMC more meaningful it is suggested that price and arrivals data be maintained in greater detail and accuracy. Since prices vary greatly by variety as well as by bahars (seasons) aggregated records such as one finds in the existing price and arrival information maintained and disseminated by the PAPMC distorts the actual price and arrivals variations and the price arrivals relationship. Farmers find such price data of little use and prefer to rely upon the information they receive from middlemen and neighbours. Moreover, at the market substantial variation exists in the sizes and qualities of the units of sale whether that unit is an arranged lot or a basket (often both of which are called by the common name of pati.) When variation in quality and quantity exists the recorded price variations per lot either exaggerate or underestimate the real nature of price variations. For the sturdier fruit such as mosambi grading sieves may be used to standardise and quicken the process.

(2) Weighment and Grading at the Farm

It is suggested that cooperatives provide weighment and grading services at the villages in accordance with the PAFMC's standards. This may encourage farmers to grade and weigh their fruit prior to packing the produce for the market. The current practice of unpacking baskets and grading the fruit at the market yard involves additional handling and fruit damage. This further adds to the residual-cum-reject category of beet which so sharply bites into the cultivators net returns.

(3) Market Intelligence

Several suggestions are being made to improve the nature of market intelligence available for the Poona fruit farmers. The market intelligence currently available is inaccurate, overly-aggregative, slow and limited in coverage. The first two issues may be addressed by introducing accurate grading and recording disaggregated data. The remaining two issues may be addressed if greater reliance is placed upon the collection of information from other markets used by the Poona fruit farmers and the quick dissemination of detailed information in ways such that it may be easily accessible to the farmers. The use of the TELEX system to obtain information from the Bombay and the Gujarat markets, most commonly used by the farmers of Poona (other than the Poona market) has been suggested. Local

'TECHNOCRAT,' NOVEMBER 1986, PAGE 24.
WRITTEN BY JULIE CHATTERJEE.

HIGH TECHNOLOGY

Electronic Fruit-Sorting System

■ MAF HAS COME OUT WITH A NEW system for sorting fruit, one that will effectively replace the sorting tables that were used formerly, where the produce had to be sorted by hand. This new system uses the latest in electronics to sort fruit into three different classes.

The coding of the quality of each fruit is carried out through a mere flick of a switch. A conveyor belt displays the fruit, while it is being scanned by an optical-electronic system, using infra-red diodes and a CCD camera that identify the fruit that will have to be rejected.

The collected data is then transmitted to a central management system. A gauge directs the produce to different exits from the conveyor belt. This selection is done according to the various parameters that have been fed into the machine, such as quality, size and colour.

This new product makes it easy to program as well as to control production more effectively. Overloading of collateral conveyors can be avoided, as the spoiled fruit is rejected. In addition, the MAF system automatically sorts the fruit according to its final destination. Once again, this helps to prevent overloading the exits from the conveyor. The bottom line shows a decided, net improvement in the quality of a grower's fruit.



Electronic fruit-sorting system.

and regional newspapers in Marathi can continue to offer market information, but the information must be provided with greater details. Literate farmers with access to market intelligence of this nature, however, question the reliability of the information. The greater flaw in this kind of written market information is that it precludes the illiterate farmers from having independent access to market intelligence.

The radio, on the other hand, needs to be recognised as potentially a powerful instrument for the dissemination of daily market prices, arrivals and other information. As fruit is a perishable crop, fruit prices should receive a greater priority of radio announcement than they have received so far. Till the end of 1986 fruit prices from the Poona market were not being included in the radio announcements of agricultural prices. The prices of the locally cultivated varieties as well as those of the larger growing areas (such as Nagpur oranges and Jalgaon bananas) need be included, and announced by the season (nava or new and juna or old). The daily announcements of accurate prices and price projections on radio will provide an effective supplementary to the fruit prices already reported in the regional newspapers. Not only that, because of the easy availability of radios in most villages, regular announcements of market information for all the major fruit crops locally grown is likely to be a more effective instrument for spreading

market intelligence than the alternatives of newspaper or television. Educational programmes regarding the cultivation and marketing of fruit on Doordarshan would also be an extremely useful tool wherever farmers have access to television sets. Radio and television offer the additional advantage of being intelligible to even the illiterate farmers. The radio and television are therefore recommended as sources to which farmers would turn for market information if the information was found to be current, detailed, and most importantly, reliable.

(4) Fruit Marketing Cooperatives

A marketing cooperative would address the special needs of Poona district orchard growers. The problems that an average Poona fruit cultivator faces is one of small orchards and small volumes of total output. Regardless of the total size of his agricultural holding, if, as is the common pattern in the district, the orchard growers consignments are small (as a result of the small orchard sizes), chances are that he will be cheated on the price.

In spite of the one unsuccessful effort towards cooperative marketing in Poona by the Sahjeevani Phale Kharedi Vikri Sangh this research recommends cooperatives for a more efficient and equitable marketing structure. The obvious obstacle in the path of the formation of a marketing cooperative in Poona have been duly recognised

in the dissertation. However, with the inspiration and organisational support and concessions from the PAPMC such an effort could be initiated.

(5) Preservation and Processing

Much of the fruit spoilage occurs as a result of handling and keeping. Some of this occurs because the commission agents manage wholesale prices through the tender system and maintain them above the market clearance level.

This research recommends the use of such unsold fruit for processing and preservation since semi-damaged fruit can be easily used for that purpose. There is domestic demand for the processed and preserved fruit in the army canteens in particular. MAFCO collection units and processing centers in the Poona city have been recommended for the absorption of the surplus, damaged or otherwise.

Examples of certain costs involved in the processing and preservation of some fruits were discussed in Chapter V. It is indicative therefore that the expenses involved in such processes are likely to be quite reasonable and affordable for the MAFCO and other local organisations. MAFCO could make available mobile collecting units at various collecting points spread around Poona city and retailers could bring over their daily or weekly surpluses for sale to these collection units. Service units for

processing fruits brought in bulk could be started by MAFCO in several parts of the Poona city and made available to wholesalers and farmer's agent's (such as the commission agents) with surpluses. The Market Committee could play a more dynamic role in the protection of the farmers' interests by eliminating the unit of sale called "beet" and by diverting all such beet to the processing units. The processing units should be available to any private entrepreneur that may wish to look for profits in this area and compete with the MAFCO units.

Another possibility would be to encourage the development of processing facilities in smaller towns and rural areas. The processing facilities at Kashale in Karjat taluka, Raigad District, by the Academy of Development Science, has not only offered a solution to the spoilage of fresh produce in agricultural markets in Maharashtra, but has also been a valuable source of employment for Adivasi women. The units process the fruits of the locally grown trees such as mango, guava, awla, jambhul and karwand. These fruits are converted into jams, jellies, pickles, syrups, chatnis and dehydrated fruit, all of which are supplied to the I.I.T., Powai, canteen in the Bombay area.

The demand for processed and preserved fruit has been increasing nationally. There is substantial unmet demand for these in the various canteens of educational institutions and the corporate sector. Moreover, processed

and canned food items accurately meet the needs of the armed forces. Therefore the sale of the processed and preserved fruit should be targeted towards domestic demand. Moreover, the peculiar constitution of the warm region fruits available at the Poona market (especially the six fruits of special interest to this study), and the non-temperature controlled retailing that is available in most parts of India, cause accelerated fruit deterioration once the fruit is recalled from the cold storage. The choice of appropriate solutions is therefore narrowed down to preservation and processing of the fruits.

(6) Provision of Institutional Credit
for Marketing Expenses

Most of the problems of today's fruit marketing, such as high costs of marketing, lower net returns, lack of independent marketing decisions, etc., of the cultivators stem from the power and indispensability of middlemen under the existing system. Efforts such as the A.R.D.C. Project III are so far limited to grape cultivation. For the elimination of the services of the middlemen, the Market Committee could encourage the credit institutions such as nationalised banks and cooperative banks to study this problem. Schemes similar to the A.R.D.C. Project III need to be made available to the cultivators of other fruits. The advantages of such schemes should be available to small

orchard cultivators who form the majority of the Poona fruit growers. The PAPMC could also emphasize to the banks the importance of replacing middlemen as credit institutions. The middlemen have been providing loans for marketing, consumption and social functions. Banks may be encouraged to study seriously the prospects of working out schemes for financing specific marketing and consumer loans. Loan recovery would probably be easier if the lending organisation had some control over the cultivator's potential resources. For this reason other potential lenders could be cooperative marketing organizations and fruit preservative cooperatives. In the matter of loans the existing societal needs cannot be ignored altogether. Middlemen, as lenders, especially tend to these needs. So long as other institutions will not take over this burden, fruit marketing will pivot around various intermediary units.

To better understand the potential of efforts such as the A.R.D.C. Project III as alternatives to intermediary financing, the following paragraphs sketch an outline of the major parameters of the programme.

A.R.D.C. Project III : An Outline

The Agricultural Refinance and Development Corporation Project III (A.R.D.C. Project III, for short) was financed as a part of an International Development Agency-World Bank Scheme. The National Bank for Agricultural and

PART II : LAND UTILIZATION AND CROPPING PATTERN, 1977-78

Total Acreage:

Name of farm	Plot No.	Culti- vable Land	Total Land Tax	Descrip- tion of the Quality of the Soil: Deep/ Medium/ Light/ Sandy/ Clayish etc.	Whether Irrigated: Seasonal or Perennial/ Source of Irrigation/ Nature of Ownership of Source of Irrigation	If cultivating leased land, then rent on the land		Cropping Pattern						Production			
								Kharif		Rabi		Summer		Principal Crop		Subsidiary Crop	
								Crop	Acreage	Crop	Acre- age	Crop	Acre- age	Name of Crop	Production and Value	Name of Crop	Production and Value

A: OWNED

B: LEASED
(In/Out)

C. FALLOW LAND:

(a) How many acres? :

(b) Reason for leaving fallow:

(c) Is it possible to bring the fallow land under cultivation?

If Yes, how so?

If "Yes" answer for (c), then, which crop could be cultivated on this land?

Assessment of the Potential of Orchard
Financing Projects

The success of this project may be assessed in the number of orchard owners benefited by it. An earlier A.R.D.C. project (1979-80) executed at the Bijapur district of Karnataka claimed (in its 1982 report) to have substantially increased the net income of the Thompson Seedless growers of the region. The report compared the net incomes of the Thompson Seedless cultivators who had proceeded with the financial and other assistance from the A.R.D.C. Project with those acquiring financing from other sources (the most likely of which is intermediary financing). An average net income of Rs. 13,600 (including the imputed value of family labour) accrued to the farmers receiving assistance from the project as compared to the net income of Rs. 1,230 per acre for those outside the project.⁸ Since the primary thrust of the A.R.D.C. projects discussed here is the provision of adequate⁹ and timely financing at reasonable interest rates, it may be correctly concluded that the unavailability of such can sharply reduce the size of the net income after paid out cost. A further insight into the impact of

8 'Development of Grape Cultivation in Bijapur District, Karnataka', a report published by the A.R.D.C., Bombay, 1982, p. 37.

9 A loan of Rs. 20,000 per acre would substantially exceed the cost of cultivation (which in the Bijapur project was found to be Rs. 13,850/acre in actual paid out cost). The remaining amount would, therefore, be available for marketing expenses.

intermediary financing upon the farmers' net incomes has already been provided in the Chapter IV of this study.

The shortcomings of the A.R.D.C. projects with regard to the needs of the Poona orchard growers would centre around the confinement of its reach only to grape cultivators. Since the extent of intermediary financing is much greater for banana, orange, mosambi and fruit other than grape, the needs of the Poona orchard growers would not really be served with a project so narrow in scope. The extent of financing (Rs. 20,000 per acre) is reasonable. The surety requirement of choupath (or the financing of one acre for every 4 acres of irrigated cultivable land) may be a little stringent for some of the Poona cultivators. Such limitations notwithstanding, the A.R.D.C. projects are good models to be emulated and adapted to local regional needs. It is being recommended here that similar projects with suitable modifications be tried in the Poona district to allow the orchard growers reprieve from middlemen financing.

(7) Extension Services

Extension services have the potential of providing a valuable adjunct to the overall effort to improve productivity, reduce crop destruction and damage, and increase marketing efficiency. Extension workers can bring to the farmers the results of latest scientific discoveries from the experimental farms which farmers cannot obtain

from their peers or their own experiences. New methods and inputs available in the market that may be used to combat orchard diseases and pests would be a contribution which the Poona orchard growers would be overjoyed to receive. New techniques for better yield are being developed and tried at the agricultural universities in Maharashtra. The extension services could demonstrate these results and the results of other technological advancements, the latest in harvesting and packing techniques etc. to the farmers. The ability of the Poona farmers to maintain high yields more or less consistently would enhance their ability to acquire credit on easier terms as the risks of credit advancement to them diminishes. This would be especially true if orchard credit programmes similar to the A.R.D.C. projects are begun in the Poona district.

6.5.1 CLOSING REMARKS

Market regulation has been an essential force in regulating and standardising the performance of market services at the Poona market. However, it suffers from implementational handicaps. Unaccompanied by certain necessary structural improvements, market regulation has been unable to significantly increase the net returns to the cultivators or the availability of quick dependable and informative market intelligence. However, a properly functioning regulated market has the potential of

significantly improving many facets of fruit marketing in the Poona city. To this end market regulation has had partial success. The effectiveness of market regulation will be vastly enhanced if the State's agricultural policy is redesigned to specifically address the structural problems related to capital availability, communication and the availability of water, fertilizers and other essential requirements to good yields and more assured returns. The structure of marketing has experienced several positive changes since the Gadgil report both because of changes over time as a result of overall development of the district as well as because of market regulation. Unfortunately many of the inefficiencies mentioned in the Gadgil report continue today. The wide range of remedies suggested in the dissertation and summarised above should over time be able to address and eradicate many of these inefficiencies.

APPENDIX

FRUIT CULTIVATION AND MARKETING
IN POONA DISTRICT:
A SOCIO-ECONOMIC SURVEY

PART I: QUESTIONS ADDRESSED TO CULTIVATORS

1. Name :
2. Village:
3. Religion and Caste:
4. Taluka :
5. Questionnaire No. :
6. Date of Interview:
7. Village of Origin:
8. Taluka of Origin:
9. District of Origin:
10. If respondent immigrated from another area, then the timing of and reason for the immigration :
11. How many generations have you lived in this village?
12. Principal occupation :
13. Secondary occupation :
14. What other occupations do the members of your household have?
15. Basic data about members of the households:
 - (i) No. of Adult Males Level of Formal Schooling:
 - (ii) No. of Adult Females
 - (iii) Children
16. Can you? (i) Add (ii) Subtract (iii) Multiply (iv) Divide
17. Regarding Hired Permanent Labour:
 - (i) Number of Male/Female Workers: (ii) Wage
 - 1.
 - 2.
 - 3.

PART II : LAND UTILIZATION AND CROPPING PATTERN, 1977-78

Total Acreage:

Name of farm	Plot No.	Culti- vable Land	Total Land Tax	Descrip- tion of the Soil: Deep/ Medium/ Light/ Sandy/ Clayish etc.	Whether Irrigated: Seasonal or Perennial/ Source of Irrigation/ Nature of Ownership of Source of Irrigation	If cultivating leased land, then rent on the land		Cropping Pattern			Production						
						Land	Rent	Kharif		Rabi		Summer		Principal Crop		Subsidiary Crop	
								Crop	Acreage	Crop	Acre- age	Crop	Acre- age	Name of Crop	Production and Value	Name of Crop	Production and Value

A: OWNED

B: LEASED
(In/Out)

C. FALLOW LAND:

(a) How many acres? :

(b) Reason for leaving fallow:

(c) Is it possible to bring the fallow land under cultivation?

If Yes, how so?

If "Yes" answer for (c), then, which crop could be cultivated on this land?

PART III : FRUIT CULTIVATION AND PRODUCTION (1977-78)

Seq. No.	Survey No. (If there is one)	Acreage (or hectares) of land under fruit cultivation	Number of trees or plants		Where were the plants purchased and for how much?	How much time must pass between planting and fruit bearing? (Gestation period)	Till what age does an orchard continue to bear marketable fruit?	How do you space the plants/trees in your orchard?	Production by Each Crop Season		
			At the time of Planting	At the time of Survey					First Crop From To	Second Crop From To	Third Crop From To
									Output Value	Output Value	Output Value

Q.: How many times before this have you cultivated this fruit? Please explain.

PART IV : QUESTIONS RELATING TO CROPPING METHODS,
USE OF LAND AND CROP PRODUCTION
(Particularly Based on Fruit Crops)

1. Why do you select these crops?
(Give reasons)
2. Has there been any increase or decrease
in area under Fruit crop in your land
during the last 5 to 6 years?
Why ?
3. Was fruit crop production normal last year?
If not, what is normal per acre fruit crop production?

<u>Type of Fruit</u>	<u>Total Production</u>	<u>Value</u>
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4. What recent measures have to be adopted recently
to increase fruit production?
5. Do you experience labour shortage during the
busy seasons?
If Yes, what do you do to solve the problem?
6. Do you experience any difficulty acquiring adequate
quantities of materials required for crop production
(such as water, fertilizers, seed, electricity/oil
i.e. fuel, etc.)?
7. Do you get information about modern methods of
cultivation from Government, organizations, Privately
or from Cooperative Societies?
(Please give detailed information.)
8. Do you take any other crops in-between fruit trees
in your land (inter-cropping)?

Normally, in which month? Area?

A) Area under such crops :

Total Production of such crops:

Total Value:

PART VII : IF ORCHARD IS SOLD TO CROP CONTRACTORS:

1. Do you sell your orchard to contractors?
If yes, which orchard?
Which cropping season?
Give reasons why.
2. At which stage of fruit production do you sell the orchard to the middleman?
3. Terms of contract:
 - (A) To write on Stamp Paper in the presence of a witness at the time of entering into the contract
 - (B) To enter into the contract orally in front of a witness
 - (C) To enter into the contract without witness
 - (D) Any other
4. What types of work do you (the farmer), have to do after the contractor has purchased the orchard?
What types of work does the contract do?
5. How does the contract fix up the value of the yield?
6. When and how do you get the value of produce?
Do you simply trust your memory or do you maintain accounts of your expenses?
7. Do you get all the instalments as per the agreement? Or is there generally a discrepancy?
 - (a) Sometimes it differs
 - (b) Always differs
 - (c) Frequently differs
 - (d) Never differsIf so, what action do you take?

8. Do you know? (i) Addition (ii) Subtraction (iii) Multiplication (iv) Division
9. Do you take an advance of capital funds from the Contractor?
What is the rate of interest?
10. How much of such advance was taken last year?
When was it paid back? How?
11. Do you retain and examine accounts slips and the amounts paid back by you, or do you just believe what the contractor tells you?
Have you been deceived any time?

PART VIII : REGARDING FRUIT MARKETING

1. Which market do you send fruit to?
2. How do you select a particular market?
3. In what proportion is the fruit sent to different markets?
4. What quality of fruit is sent to which markets?
(a) Bombay (b) Pune (c) Ahmedabad (d) Surat
(e) Other (name the market)
5. What is the transport facility to each market?
Is the transport done directly from your orchard or do you have to make some other transport arrangement ?
6. Who makes transport arrangement? How?
(a) How many transport companies are there in your village?
(b) Do you depend only on one transport company or do you have contacts with more than one company?
(Give names of the companies.)
7. What types of responsibilities do the transport companies accept?
8. Is there a metalled road from your village to the market?
If not, what is the length of unmetalled road?
(in miles)

9. What protection does the fruit receive under the following conditions

- (a) Fruit damaged due to bad road conditions
- (b) Fruit damaged due to rain
- (c) Fruit damaged due to Sun
- (d) Fruit damaged due to theft

How many such cases occurred last year?

10. Does your representative accompany the fruit with the truck?

Is there any agreement between you in this connection?
from

Are expenses recovered the person accompanying
the truck? How much?

11. Do you send fruit to one or more commission agents in each market?

Name the commission agents in the Poona Market.

12. How do you contact the commission agents?

13. Does a commission agent give you advances, etc.?

14. What amount does ~~xxx~~ he charge as interest for any such monetary help?

15. Do you receive the Account Slip and Money on the same day you send the goods to market?

16. How do you get the price of the goods?

- (a) Immediately after the sale
- (b) The farmer has to collect the amount every day
- (c) Amount sent by post
- (d) Other (explain)

17. Do you (the farmer) yourself (or your agent) carefully watch the weightment of the goods?
18. Do you often (or ever) notice any instances of cheating?
How? (Please explain.)
19. Do you send fruit duly counted or weighed?
20. Do you have to make any extra payments to the commission agent?
Why and how much?
21. Do you properly preserve the receipts and check the amounts of expenses given by the commission agent?
22. Do you get back the packing material used?
If yes, how many times you re-use them?
23. Do you enter into cooperative activities with your neighbouring farmers in the areas of cultivation or marketing?
If so, in which operations?
24. Are there any Fruit Growers' Organizations in your area?
If yes, give details of that organization.
25. Are you a member of any Fruit Cultivation or Marketing Cooperatives?
If yes, do you sell fruits through this organization?
If not, Why?
26. If you are a member of a fruit marketing cooperative, please give the following:
 - a) The name of the organization
 - b) The name of the central office
 - c) To which markets are the fruits sent through your Association
 - d) The total number of members of the Association
 - e) When was your Association first established
 - f) Any other details.
27. If the fruits do not sell in the market to which they were sent does the commission agent then send that fruit to other markets? If so, then explain in details his methods. (For example, commission agents from Poona sends the unsold product to the commission agent in the Sholapur market. While doing so:
 - a) He himself bears the additional expenses involved
 - b) Recovers the additional expenses by charging more commission than the normal one
 - c) Or through any other source

PART X : PACKING EXPENDITURE

S. No.	Item of Expenditure	No.	Value	Quantity	No. of Fruits packed
1.	Basket				
	Box				
	Bag				
	Gunny Bag				
2.	Rope				
	Nails				
	Metal Sheet				
	Grass				
	Paper				
	Other				
3.	Loading Charges (Upto Railway Station, or S.T., or Truck)				
4.	Transport :				
	A) Truck Charges				
	S.T. Charges				
	Railway Charges				
	B) Octroi				
	C) Other Taxes				
5.	Brokerage (Commission Agents' Charge)				

PART XI : COSTS AND CHARGES AT THE MARKET YARD

	Rate	Total Expenditure (Rs.)
1. Unloading of Goods - Labour Charges		
2. Expenditure involved in storing of Unsold Fruits		
3. Measuring, Weighing and Grading Expenses in Poona		
4. Market Committee Fees (e.g. Cess)		
5. Corporation Fees		
6. Charities and Donations		
7. Postage and Communication		
8. Other Expenditure		

9. Estimated Total Expenditure:		
Estimated total expenditure during the whole year over the entire crop		

PART XII : LOANS TAKEN BY THE FARMER

Agency from whom loan is taken	Total amount of loan taken	When	Reason	Rate of inte- rest	Period	Repayment upto now			Year and month repay- ment done
						From Princ- ipal amount	Inte- rest	Total	
1. Acquaintance, Friend, etc., or 2. Relative									
3. Money-lender									
4. Cooperative Society									
5. Bank									
6. Commission Agent									
7. Pre-Harvest Contractors									
8. Any Other									

PART XIII : INFORMATION ABOUT FRUIT MARKET

1. How do you get information about prices of fruits in different markets?

(Through Commission Agents, Newspapers, Radio, T.V., Neighbours or any other source)
2. What is the current practice of sale of fruits?

In Poona

In Bombay

Other
3. If fruits are sold in Poona:
 - a) Are you aware of the Poona Agricultural Produce Markets Act?
 - b) How and when did you find out about it?
 - c) When was the Poona market regulated ?
 - d) Is it being properly implemented?
4. Are you aware that wholesale market has shifted elsewhere from the Phule Market?
 - a) Where has it been shifted?
 - b) What facilities are being provided at this new place?
 - c) What do you think about this new location of the wholesale market yard?

Will it affect you positive/negatively?
5. Has anybody asked you your opinion about the changes before or after the Market Regulation?

Who and How? (In a meeting, or personally)

What were your comments/suggestions?

PART XIV : ABOUT MARKET REGULATION

1. While selling fruits in the Market:

In 'Hundreds' measure, actually how many fruits do get included in the count? (e.g. 120, 130)

In Poona :

Elsewhere:

2. What was the condition existing before the introduction of Market Regulation?

Have instances of deception been reduced since the application of the Poona Agricultural Produce Markets Act?

3. Do you get the price of your produce sold in the market quicker as a result of the implementation of this Act?

4. Are the Account Receipts more detailed now than before?

5. Are the prices received by you for produce?

(a) more than before

(b) less than before

(c) no change

6. (A) Is it more difficult now than before to get advance from the commission agent ?

(B) If yes, do you depend more than before on banks or other lending agencies?

7. By which method are the produce being sold at Poona?

Open auction/Closed auction

Which do you prefer? Why? Give reason.

8. (a) Do you feel more confident about the sale of the produce since the Poona market has been regulated?

(b) Does the regulation of the Poona market encourage you to sell more of your fruits in Poona market than before?

9. Do you consider the supervision of the Market Committee adequate?
10. Have you ever had any confrontations/disagreements with your commission agent?

Please relate your experience.
11. Did you get any help from the Market Committee on this occasion or with regard to other problems?

SOCIO-ECONOMIC SURVEY OF PRODUCTION AND MARKETING
OF FRUITS IN THE POONA DISTRICT - 1978

Questionnaire for Khotidar

1. Name of the Khotidar: _____ Date: _____
2. Native Place: _____ Taluka: _____ District: _____
- Residence: _____
- Religion: _____ Caste: _____
- i) Reason for leaving the village
 - ii) When did you leave the village?
 - iii) Since when are you a Pre-Harvest Contractor?
Of which fruits?
 - iv) Are you engaged in any other occupation
other than Khotidari?
If yes, name the occupations:
 - v) Give the reasons why you entered Khotidari.
 - vi) What was your occupation prior to Khotidari?
 - vii) Please describe the Khotidari business in fruit
in the district when you entered the business.
 - viii) Presently is this Khotidari occupation your sole
trading concern or in partnership?
 - ix) If it is in partnership, what is the nature
of the partnership?
 - x) What are the occupations of the other members
of your family?
3. Nature of Agreement between the Farmer and Khotidar:
- a) Written Agreement (on stamp-paper and the signature
of witnesses)
 - b) Written Agreement (on stamp-paper but without the
signature of witnesses)

- c) Oral Agreement (In the presence of witnesses)
 - d) Oral Agreement (Without any witness)
 - e) No Specific Agreement.
4. Period of accepting Khoti:
- a) Which blossom/season
 - b) In which month do you make the Khoti purchase?
 - c) During which state of fruit?
5. After the agreement, what is the nature of the responsibilities shared between the farmer and the Khotidar?
6. While selling on Khoti how is the bargain settled?
7. After settling the bargain, manner in which farmers are paid:
- a) The entire amount is paid in lump-sum ^{at} the beginning.
 - b) The entire amount is paid in lump-sum but at the end.
 - c) The payment is made in more than one instalments.
 - d) If paid in more than one instalments, what is the nature of such instalments?
8. What is normally the nature of conflict between the farmer and the Khotidar, if such conflict arises?
9. Is there any specific difference between the agreement regarding Pre-harvest contracts with small farmers, and large farmers?
- If so, what is that?
10. Generally, which are the villages/areas from which you accept orchards on Khoti?
- | | |
|---------|--------|
| Village | Taluka |
|---------|--------|
11. In the region in which you take contracts, are the only Khotidar?
- If there are other Khotidars too, how many others (that you are aware of) are operating in the same area as you?

12. If you are the only Khotidar, what possible reasons could there be for others not accepting Khoti in that region?
13. Normally, how many fruit-trees do you purchase on contract in any season?
How many fruit-trees did you contract last year?
14. If you are offering advances/loans to farmers:
a) When do you extend the loan?
b) For which reasons?
c) What are the terms and conditions?
d) What is the rate of interest?
15. How does the farmer make the repayment?
a) Do you deduct the amount from the sale proceeds?
b) Any other method.
16. What is normally the quality of fruit you contract in?
(Good/Medium/Poor)
17. When you ~~do~~ do the following?
a) Spraying of insecticides/pesticides
b) Harvesting (state of fruit development)
c) Grading of fruits (How many grades are there?)
d) How and where do you store the purchased fruit?
e) What grades of fruit do you select for different markets? (Bombay, Poona, etc.)
What type of packing do you use for each?
Do you sell any of the fruit in the local market?
Why so?

Quality of
Fruit

Market
Place

Type of
Packing

- f) How do you arrange for the transport of the fruit from the orchards?

How do you personally make arrangements for the transport of the fruit to outside markets?

- g) How many transport agencies are there in this region?

Do the trucks come to the orchard to carry fruits?
Or do you have to carry the fruits from the orchard to the place where the truck may be stationed?

18. Expenditure on Harvesting of fruits, Grading and Packing:

- a) No. of family members working

- b) No. of workers engaged on daily wages:

For how many days?

Wages paid to them:

- c) How many are Saldars?

Wages paid to them:

- d) Expenditure on baskets, gunny bags, etc., required for harvesting & of fruits, transport upto the store:

19. Expenses on packing material (For one box/basket)

20. Do you hire separate labour for the packing operation?

Wages paid to them:

Approximately how many boxes/baskets does one worker pack?

21. What is the expenditure on the transport of fruits upto the truck stand?

What labour charges do you pay for the loading of fruit into the truck?

Average per basket/box hamali charges:

22. In each market with how many Commission Agents do you do business?

Name the Commission Agents in Poona that you do business with.

23. How do you protect the fruits against damage during transport (due to sun, rain, theft, etc.)?

Was there any theft of fruit in transport last year?

No. of fruits stolen and price.

24. When you send fruits to the market, does any one accompany the fruit?

How do you collect your proceeds from the Commission Agents?

Do you have to visit the market?

What is the expenditure involved?

25. Do you get help from the Commission Agents? (e.g. in respect of advance, arrangement of transport, insecticides, pesticides, fertilizers, etc.)

Do they charge for such help?

26. Do you get money and account slip on the same day you send fruits to the market?

How do you get money of your goods?

(By Post; Through the servants; or you have to go personally

27. Have you kept carefully with you any of the receipts (account slips) given by the Commission Agent?

28. Do you check the account slips given to you?

Are they correct?

29. Do you get back the boxes/baskets used for fruit packing?

Do you re-use them for packing?

While re-using them what expenditure you have to incur for their repairs?

How many times can you use such boxes/baskets for packing?

30. (A) Of the total value of Pre-harvest contract, what amount do you have to give in advance?
- Do you have to take a loan for that?
- What amount of loan did you take for this last year?
- From whom?
- What is the rate of interest?
- (B) In the expenditure incurred for sending fruits to market, approximately what is the expenditure per 100 units (box or bag)?
- Do you have to take loan for that?
- What amount of loan you have taken for this last year?
- What is the rate of interest?
31. If you are taking loan from the Commission Agent or Money-lender (Sahukar), then why do you not take loan from a Cooperative or Commercial Bank?
32. Does the Commission Agent deduct the market charges at the pre-accepted rates?
- Or, does he make higher, unauthorized deductions as well?
- Do you ever feel that there are unaccounted for deductions, charges and beets in the account slips?

QUESTIONNAIRE

NAME :

DATE :

OCCUPATION: COMMISSION AGENT

PLACE:

1. Place of Origin
2. Religion :
3. Caste
4. Sub-caste
5. Place of residence
6. Father's Occupation
7. The year when your family entered this occupation
(fruit business)
8. Year when respondent entered fruit business
9. Family's earlier occupation
10. Respondent's earlier occupation
11. Reasons for taking up this occupation
12. Number of family members in fruit commissioning business
13. Other occupation of the respondent
14. Other occupation of the respondent's family
(with special emphasis on occupations related to fruit,
such as farming, khotidari, inter-market trading,
retailing, etc.)

Any reasons for choosing Poona market?

15. If the respondent conducts business in any other market as well, then the name of that/those market/markets.

16.

Fruit handled (type and variety) (1)	Place of origin (2)	Season- ality (3)	Mode of transport (4)
i)			
ii)			
iii)			
iv)			
v)			
vi)			
vii)			

17. Whether fruit is graded or not and type of grading:

Fruit (1)	Yes/No (2)	If yes, then basis of grading (3)	Comment on flaws of grading (4)
i)			
ii)			
iii)			
iv)			
v)			
vi)			

18. Do you grade the ungraded fruit? On what basis?

Fruit	Yes/No	If yes, method and basis	Reason (benefit)
i)			
ii)			
iii)			

19. Fruit quality coming to Poona
(approximate gradation in A, B, C, terms)

Fruit	Place of origin	A/B/C	Markets through which the fruit passes before reaching Poona stating whether the fruit market is regulated (R) or unregulated (X) in each of these markets
-----	-----	-----	-----

20. Do you have dealings with farmers (F), khotidars (K), traders (T) or agents (A)?

Fruit	F/K/T/A	Name a few important ones	Their place of residence
(1)	(2)	(3)	(4)
-----	-----	-----	-----

20A. State the different methods you adopt in making contacts with farmers (F), khotidars (K), traders (T) and agents (A).

Fruit and variety	Method															
	Farmers				Khotidars				Traders				Agents			
	a	b	c	d	a	b	c	d	a	b	c	d	a	b	c	d
i)																
ii)																
iii)																

21. With whom is your major (50% or so) trade conducted?

Fruit F/K/T/A

22. Through which of the above-mentioned methods do you conduct most of your trade?

Fruitwise F K T A

Total

23. In case of two comparable methods of making contacts and trading partner (F/K/T/A) which do you prefer and why?

i)
ii)

24. Terms on which conduct trade under each possible circumstance

- (Traders)
- (Khotidars)
- (Farmers)
- (Agents)

"Term" means (A) duties promised; (B) extra favours promised e.g. (a) giving advances, (b) getting khotidars in touch and vice versa, (c) giving market intelligence by periodically dispatching information about prices and arrivals, (d) supplying pesticides and fertilizers, (e) arranging for transportation, (f) storing and caring for the fruit at the Poona mandai free of cost, (g) any other.

25. If you give any of the above mentioned services on payment what are the terms and charges of each of the extra services?

- | | |
|-----|-----|
| (a) | (e) |
| (b) | (f) |
| (c) | (g) |
| (d) | (h) |

26. a) State what functions you perform after the Market Act has become applicable.

b) State what functions you performed before the Market Act was applicable. Point out the changes.

27. Commission Agents' opinion about the existing and likely impact of the New Market Act: (including the open auction system)

- a) On Commission Agents
- b) On farmer
- c) On the market in general

(1) earnings and prices, (2) convenience (trouble and time), (3) Storage, (4) loan repayment, (5) arrivals, (6) costs, (7) any other.

28. What problems do you have with farmers, traders, khotidars and retailers regarding: (a) loan repayment, (b) behaviour, (c) excessive complaints to authorities deterring your work, (d) dissatisfaction with price, (e) bad packing, (f) bad grading, (g) quality of fruit, (h) how they try to cheat you, (i) any other.

29. What is the place and method employed by you for storing different fruits?

(In case a cold storage has been used then the name of the cold storage, its location, rates, capacity, and other related data.)

31. State problems related to present method of storage and suggest improvements. Also state what you think is the ideal method of storing each fruit.
32. Give a general idea of the months during which demand for fruit is high and why it is so.
33. a) Is the farmer aware of market prices and arrivals? What is his source of information?
- b) Does he make any use of this knowledge to earn higher prices by (i) timing the fruit, (ii) improving the quality of fruit, packing methods, grading, (iii) transportation through trucks rather than carts, (iv) choosing the right market or any other information or advice that you give him or he may learn through other sources.
34. a) What do you feel about the wholesale market being shifted to Gultekadi?
- b) Say what you think of the following^{and}/make any suggestions you like:
- i) the section allotted to wholesale trade at Gultekadi
 - ii) hamali charges
 - iii) market charges
 - iv) supervision and weighment
 - v) storage facilities
 - vi) credit facility
 - vii) Other provisions, e.g. time-saving methods of submitting accounts, etc., for facilitating market operations.
35. Monthly Expenditure on Marketing:
- | Item | Quantity | Money spent |
|--|----------|-------------|
| 1. Market space rent | | |
| 2. Storing expenses borne by Commission Agent (C.A.) | | |
| 3. Storing expenses not borne by C.A. | | |
| 4. Electricity | | |
| 5. Servants | | |
| 6. Hamali, if borne by C.A. | | |
| 7. Licence fee | | |
| 8. Office for conducting business | | |
| 9. Spoilage | | |
| 10. Any other | | |
36. Do you have a Commission Agents Association? State name and number. Describe structure and method of entry, activity, uses and drawbacks of the Association.
37. Please give seasonal division of volume of business in actual or percentage terms in real and/or money units.

QUESTIONNAIRE

NAME :

PLACE:

OCCUPATION: RETAILER

DATE :

own/rent shop/cart/basket

1. Place of origin
2. Religion
3. Caste
4. Sub-caste
5. Father's occupation
6. Place of residence
7. Year of starting fruit business by family
8. Year when respondent entered fruit business
9. Earlier occupation of family
10. Earlier occupation of respondent
11. Number of family members in fruit selling business
12. Scale and place of operation, if operating in more than one location, and relation of the person tending to fruit in each place.
13. Other occupations of different family members (including cousins and uncles) and their places of operation
14. Other occupations of respondent and the days and hours spent in each occupation
15. Reason for choosing fruit selling
16. Reason for choosing this particular location
17. Any other family business
18. Number of shops, carts owned by respondent or his family in Poona and other places, naming each place

19.

Fruit and variety handled over the year and approximate volume of each		place of purchase and from whom	Season	Occupation and name of person from whom purchased	Mode of transport from place of purchase
(1)	(2)	(3)	(4)	(5)	
Amount	Whole-sale price	Retail price			

20. a) Do you purchase graded fruit?

b) Do you regrade the fruit? On what basis and into how many grades?

<u>Fruit</u>	<u>No. of Grades</u>
i)	
ii)	
iii)	
iv)	
v)	

21. Are you under obligation to any commission agent, i.e. are you tied to anyone or free to make your purchases from anyone you choose?

22. In case of tie, what is the nature of the tie?

- i) Advances taken from Commission Agent for some purpose such as purchase of cart
- ii) Earlier sum from fruit taken on credit
- iii) Friend or relative
- iv) Some extra^{services} performed by Commission Agent
- v) Some other obligation.

23. If you are free to choose any fruit, on what basis do you choose the fruit?

- i) Knowing that commission agent gives fruit on credit
- ii) Knowing that the commission agent gives loan when needed for other purposes as well
- iii) Knowing that the commission agent is of an amiable disposition
- iv) Good relations with the farmer whose fruit the commission agent handles
- v) Knowing that the commission agent is an honest man and will not charge high rates ~~for~~ of interest and extras

- vi) Knowing that the commission agent handles only good quality fruit
 - vii) The actual quality of the fruits
 - viii) Proximity to the entrance of the market yard
 - ix) The number around the commission agent
 - x) The nature of buyers around the commission agent (well-to-do buyers indicating that the auction price may go up high)
 - xi) No particular reason
 - xii) Some other reason like new fruit, known popularity of the fruit, lesser perishability or any other reason.
24. Do you deal with more than one commission agent?
25. Do you purchase new fruit when more than 50% of the earlier lot of the same fruit/variety is unsold?
26. Give a few examples of how you price your fruit after re-grading them.
27. What methods do you employ to keep your fruits fresh?
28. What methods do you employ to make the fruit appear more attractive to customers?
29. Consumer Behaviour:
- i) Which fruit sells easily?
 - ii) What class of people purchase which fruit and how does each class behave?
 - (a) Rich (car owners)
 - (b) Middle class (well-dressed but no car)
 - (c) Poor
 - iii) When do fruits get sold easily? (naming the festivals and occasions)
 - iv) Do consumers bargain? In what way?
 - v) What problems do you have with consumers?
 - vi) Any further comments on consumer behaviour.
30. i) What is done with daily surpluses?
- ii) What is the method of storage employed?
 - iii) When (which day after purchase) are prices lowered?
 - iv) At around what percentage range of normal price are such spoilt fruit sold?
31. What is the condition of packed fruit received by you?
- (A) Give some instances of spoilt fruit at the time of opening the crate (peti) or basket (preferably in the same week)
- Date: _____ Fruit: _____
- Partial spoilage on opening : less than 10%
 10-25%
 25-50%
 50-75%
- Complete spoilage (unsaleable): More than 75%

(B) Spoilage due to Keeping: Overnight
 2-3 days
 3-7 days
 7-10 days
 More than 10 days

32. (a) What is the normal fruit loss in each season?
 (summer, winter, monsoon - percentage)
- i) fetching 75% or $\frac{3}{4}$ of the normal price
 - ii) fetching at least 50% or $\frac{1}{2}$ of normal price
 - iii) fetching 25% or less price, and
 - iv) totally unsaleable.
- (b) Fruit loss per unit of purchase
- (c) Value lost on account of the spoilage.
33. (a) Among the different methods of packing fruit, from your experience which are the most suitable for each fruit?
- (b) Can you make any suggestions on better packing methods?
34. (A) What is your source of finance?
- i) Personal (percentage share)
 - ii) Commission agent, with name
 - iii) Large trader, with name and location
 - iv) Bank, with name and location and state the purpose for which used
 - v) Cooperative credit society
 - vi) Moneylender
 - vii) Friend or Neighbour
 - viii) Any other.
- (B) Please give:
- i) The rate of interest for each
 - ii) Terms and conditions
 - iii) Period of loan
 - iv) Frequency of loan
 - v) Penalty if debt unpaid
 - vi) Outstanding debt to-date
35. What problems do you experience regarding finance?
- i) high interest rate
 - ii) difficulty of getting fruit on credit
 - iii) difficulty of obtaining loan (Advance)
 - iv) security deposit with lender
 - v) tied to the lender by obligation
 - vi) any other.

36. What problems do you have with commission agents and big traders from whom you purchase fruit? e.g.
- i) refusal to give fruit on credit
 - ii) charge high rate of interest
 - iii) do not permit you to choose your fruit, thereby forcing you to take good and bad fruit lumped together at the same price
 - iv) do not take back any bad fruits that you may have found after checking your lot of fruit
 - v) are rude
 - vi) discriminate against you
 - vii) pester you for loan repayment and even put your name on the non-cooperation board of the commission agents at the market place, without considering some genuine problems you may have had, such as being unable to sell the fruit within the stipulated time or requiring the money for some other important purpose
 - viii) any other.
37. Comparing the open auction system with the closed hatya system of the pre-regulation period, which do you find better and why?
38. Is the New Market Act good or bad and why?
39. Can you read, write and speak Marathi?
40. Do you know basic arithmetic like addition, subtraction, multiplication and division?
41. Do you maintain accounts of daily purchase and sales?
42. Marketing Costs: (Monthly)
- | Item | Rate | Quan-
tity | Money
value |
|--|------|---------------|----------------|
| 1. Licence fees | | | |
| 2. Space charge or rent
(If owned then imputed rent) | | | |
| 3. Servants | | | |
| 4. Insurance | | | |
| 5. Baskets | | | |
| 6. Decorative items for sales promotion
e.g. coloured paper | | | |
| 7. Paper bags | | | |
| 8. String | | | |
| 9. Scales | | | |
| 10. Knife and other accessories needed
for fruit business | | | |
| 11. Electricity | | | |
| 12. Storage | | | |
| 13. Transportation from place of purchase | | | |
| 14. Spoilage | | | |
| 15. Any other | | | |

SPECIAL QUESTIONS FOR BIG TRADERS IMPORTING FROM OTHER MARKETS AND SELLING TO BOTH RETAILERS AND CONSUMERS

1. a) Name the fruits you handle in different seasons.
- b) Markets and source (farmer, agent of farmer, khotidar, dalal, cooperative body, etc.) from where you purchase each fruit and why.
- c) The source of each fruit variety (village, taluka, district, and state)
- d) The markets through which the fruit passed
- e) The modes of transportation in each case
- f) Modes of packing of each fruit from different sources, pointing out any changes in the packing methods that may have been effected after the fruit left the farmer and by whom
- g) The nature of storage at different markets and stages
- h) A brief idea of the functioning of each of the markets through which the fruit may have passed: whether regulated or not, open or closed auction, rules, charges, cleanliness, etc.
- i) The day/time the fruit left the farmer and the day/time the fruit reached Poona market.

2. Marketing Costs from Source:

Item	Itemwise Costs
1. Picking	
2. Packing	
3. Hamali and other labour	
4. Transportation (non-hamali)	
5. Commission to agents	
6. Storage	
7. Octroi	
8. Market charges	
9. Charity and other expenses	
10. Other costs like deductions	
11. Spoilage	
12. Any other	

3. a) What are the other channels of fruit that you handle, from the village of production?
- b) Can you, through your experience, throw some light on market costs from any of these channels?
1. Picking
 2. Packing
 3. Hamali
 4. Non-hamali transportation
 5. Commission agents charges
 6. Octroi
 7. Market charges
 8. Charity and other expenses
 9. Storage charges
 10. Other expenses like deductions, etc.

4. Price Spread:

	1	2	3	4

- 1) Fruit:
 - Cost Price
 - Selling Price
- 2) Fruit:
 - Cost Price
 - Selling Price

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