

**ECONOMICS OF POULTRY DEVELOPMENT AND  
ROLE OF UNORGANIZED SECTOR  
(A STUDY OF MAHARASHTRA)**

**BY SANGEETA SHROFF**

**AGRO ECONOMIC RESEARCH CENTRE  
GOKHALE INSTITUTE OF POLITICS AND ECONOMICS,  
(DEEMED-TO BE A UNIVERSITY)  
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## **Poultry Sector in India : Growth and Importance**

### **Introduction**

India's roots lie in agriculture and presently the agricultural sector accounts for about 30 per cent of the Gross Domestic Product and supports two-third of the labour force. The overriding objective of our Agricultural Price Policy is to achieve food self-sufficiency (i.e. availability of adequate food-grains from domestic production) so that the state can ensure food security for its population. Thus, although food-grains fulfil the basic need of feeding the population, focus must also be directed towards quality diet by enhancing the intake of animal proteins such as eggs and meat. Arising mainly out of this need, the poultry sector is now gaining importance in the country. Poultry products can also be an important source of export earnings for the country.

#### **1.1 Importance of Poultry Sector:**

Poultry eggs and meat are important sources of high quality protein minerals and vitamins to balance human diet. Poultry farming is also an integral part of our agricultural economy and contributes to rural development. Depending on the farm-size, layers (for eggs) and broilers (for meat) can be the main source of family income or can provide subsidiary income and gainful employment to farmers throughout the year.

A notable aspect about poultry is that it is an efficient converter of low-fibre feed stuffs, unfit for human consumption, into highly nutritive animal protein food. A dozen eggs can be produced on 2 kgs. of feed. Also, poultry house litter accumulated over a period of 9-12 months, is a balanced organic fertilizer, containing 3 per cent nitrogen, 2 per

cent phosphorus and 2 per cent potash. It has been estimated that 40 birds kept on deep litter for about a year, produce about 1 tone of manure, which provide the full fertilizer needs of one hectare of paddy or maize, two hectares of sorghum or half a hectare of intensive vegetable cultivation.<sup>1</sup>

Poultry to-day also offers promising prospects for exports. The basis for this optimism is India's entry into processing and further processing of poultry and eggs. There is also a growing preference for ethnic chicken delicacies in international market.

### **1.2 Growth of Poultry Industry in India :**

Commercial poultry production in India is about 30 years old. Table 1.1 gives us an idea about the growth of Poultry Industry in India. It can be observed from Table 1 that egg production which was 2881 million in 1961, increased to 23,300 million in 1990 i.e. eight times, making poultry the fastest growing sector of Indian agriculture. India is now the sixth largest producer of eggs in the world. This egg production comes from 74 million hybrid layers and 76 million desi layers.

The rearing of broilers has also made much headway, from a negligible output of 4 million in 1971 to 30 million in 1980 and 190 million in 1990. Thus while the seventies saw a spurt in egg production, in the eighties there was a manifold increase in broiler production. The nineties promise to be that of poultry processing.

However, as mentioned earlier that, although India is the world's sixth largest egg producer, it's per capita consumption (availability) is poor-less than 30 eggs per year. The situation is worse still for poultry meat – about half a kilogram. Even if we aim at a modest target like the nutritional standard, recommended by the Indian Council of Medical



Research, of consumption of 180 eggs and 11 kg meat per person, per year, the industry needs to grow at the rate of 25 per cent in the layer segment and 50 per cent in the broiler segment to attain this level of consumption standard, by the end of this century<sup>3</sup>. However, this is only for domestic purposes. For exploiting the export market, the growth rate will have to be higher.

Further, egg consumption has hardly made any significant inroads in the rural areas. As a matter of fact, more than 75 per cent of eggs and meat produced are consumed by only ¼ of the population, residing in the urban areas of the country. Typically, the per capita per annum consumption of eggs in Bombay is 210 in number and in Calcutta 250 in number as against a national average of about 26. In a typically Indian village, the number is not more than 10. The availability and affordability both are limiting factors in consumption of eggs in rural areas.

**Table 1.1 : Growth of Poultry Industry in India**

Year	Layers (in Millions)			Eggs (in million)			Broilers (in million)	Eggs (per person)	Poultry Meat (per person gms)
	Deshi	Impro ved	Total	Deshi	Impro ved	Total			
1961	63	1	64	2961	20	2881	0	7	188
1971	50	12	62	2280	3060	5340	4	10	220
1980	64	37	101	2875	9625	12500	30	18	266
1985	72	50	122	3325	12903	16128	75	22	365
1990	78	76	154	3495	19805	23300	190	28	498
1992	76	74	150	3411	18328	22740	210	26	493
1996 (proje- cted)	73	103	176	3300	26700	30000	400	32	707

Source : Indian Poultry Industry Yearbook, 1994.

The overall picture, however, that emerges from a glance of the poultry sector in India is that poultry production has made a spectacular progress evolving from a backyard venture to full-fledged commercial agro-business. This change has been made possible through a complete sophistication in the fields of production, breeding, quality feeds, pharmaceuticals, modern poultry vaccines and equipment's. Egg productivity which was of the range of 90 to 100 eggs per bird, has reached a level of 250 to 280 eggs per bird. The average live weight of broilers of 8 weeks has increased from 1 kg. to 1.7 kg.

To provide further impetus to the poultry sector, the Government removed the import of grand parent stocks from the negative list of imports and reduced the duty on their imports from 110 per cent to 30 per cent. In the 1989-90 budget, it exempted from tea, 33.33% of the profits of poultry farming and breeding. The Union Government also identified poultry development as one of the thrust areas in the 8<sup>th</sup> Five Year Plan .

### 1.3 State-wise Distribution of Poultry Population:

Table 1.2 presented below indicates the regional distribution of poultry population in the country.

**Table 1.2 : Regional Distribution of Hybrid Layer and Broiler Chicks (1994) ( million )**

	Southern	Western	Northern	Eastern- Central	Total
Layers	44.5	13.00	19.5	12.0	89
Broilers	105	59	72	39	275

Source : Indian Poultry Industry Yearbook, 1994.

It can be observed from Table 1.2 that the Southern region dominates the poultry scene in case of both, broilers and layers and in the Southern belt the state of Andhra Pradesh reals first in layer and broiler population. The Northern region has the second largest poultry population which is mainly concentrated in Punjab and Haryana. In the Western belt. 75 per cent of layer population and nearly 80 per cent of broiler population is concentrated in Maharashtra.

Besides, eggs being produced by hybrid layers, even desi birds add to the egg production but their productivity is of course substantially lower. Thus, while hybrid layers produce about 260 eggs per bird in one cycle, the indigenous bird hardly lays 40 eggs in one cycle. Table 1.3 below shows the egg production from hybrid layers and indigenous birds for 1994.

**Table 1.3 : Egg Production from Different Categories of Chicken (1994)**

89 million improved layers	23,140 million eggs
70 million desi hens, 8 million ducks	3,150 million eggs
<b>Total</b>	<b>26,290 million eggs</b>

**Source :** Indian Poultry Industry Yearbook, 1994.

Thus, 88 per cent of the egg production comes from hybrid layers although their population is about half the total layer population.

Table 1.4 indicates the state-wise egg and broiler production.

**Table 1.4 : Annual Table Egg and Broiler Production (State-wise) 1994 ( million )**

State	Egg Production	Percentage to all India	Broiler Production	Percentage to all India
Andhra Pradesh	6420	24.4	49	17.82
Arunachal Pradesh	35	0.13	-	-
Assam	700	2.66	7	2.54
Bihar	1224	4.65	-	-
Delhi	138	0.53	4	1.45
Goa	230	0.87	5	1.82
Gujarat	608	2.31	7	2.5
Haryana	1480	5.62	18	6.5
Himachal Pradesh	168	0.64	-	-
Jammu and Kashmir	143	0.54	9	3.3
Karnataka	1015	3.86	24	8.72
Kerala	899	3.42	9	3.27
Madhya Pradesh	1316	5.01	4	1.45
Maharashtra	2 850	10.84	47	17.09
Manipur	85	0.32	-	-
Maghalaya	74	0.28	-	-
Mizoram	2	0.01	-	-
Nanded	34	0.13	-	-
Orissa	580	1.20	-	-
Punjab	1589	6.00	24	8.7
Rajasthan	581	2.21	4	1.45
Sikkim	19	0.07	-	-
Tamil Nadu	3510	13.35	21	7.6
Tripura	40	0.15	-	-
U.P.	1040	4.00	9	3.27
West Bengal	1261	4.80	24	8.7
Others (Union Territories)	251	0.95	10	3.6
<b>Total All India</b>	<b>26290</b>		<b>275</b>	

Source : Indian Poultry Industry Yearbook, 1994.

From Table 1.4, it can be observed that, among all the states in India, Andhra Pradesh ranked 1st in production of eggs, followed by Tamil Nadu and Maharashtra. In fact these three states together, contribute to nearly half the egg production in the country. Again with respect to broiler production Andhra Pradesh ranks 1st, followed closely by Maharashtra. Both these states together contribute to 35 per cent of the country's broiler production. Karnataka, Punjab and West Bengal, each contribute to 8.7 per cent Of the country's broiler production, while Tamil Nadu's contribution is 7.6 per cent.

The overall conclusions that emerge from Table 1.4 is that while Andhra Pradesh predominates in both egg production as well as broiler production, Tamil Nadu ranks second in egg production while Maharashtra ranks second in broiler production.

### **1.3 Poultry Management :**

A state-wise analysis of the poultry sector, indicated its growth and importance in different parts of the country. In states such as Andhra Pradesh and Maharashtra, it is better developed because of higher demand for poultry products, greater availability of poultry feed ingredients, satisfactory government support and relatively better enterprisership of farmers to try and diversify their agriculture.

Poultry farms, as is well known are set up for production of eggs and poultry meat (broilers). In the case of layers, chicks reach maturity after 20 weeks when they begin to lay eggs and continue to do so for the next one year. Broilers also occupy an important place in poultry industry. The broiler production is a fast growing segment and popular segment due to minimum capital investment and space requirement and quick returns as chicks are ready for market in seven to eight weeks. In the case of broilers, the rate at

which the feed is converted into meat is an important measure of efficiency. The factors affecting efficiency of feed utilization are environmental temperature, genetic potential for growth, nutritional adequacy and diseases. The factors that affect the profitability of a broiler operation are : feed conversion ratio, live body weight, mortality and rate per kg.of live weight.

Presently, birds are reared mainly under deep litter system, cage system or controlled environment housing system.

Chicks up-to 8 weeks require 45 sq. inches of cage floor space. Growers upto 16 weeks require 54 sq. inches of cage floor space. In case of overcrowding, birds are likely to get diseases. Laying birds require 72-75 sq. inches of cage floor space.

In the deep litter system, birds are reared on floor with litter material such as rice straw, rice husk or saw dust which remains in the poultry house for a fairly long period of time. Litter is also a poor conductor of heat and on deep litter the birds feel cool in summer and warm in winter. Deep litter is a method of saving the labour to clean sheds and providing efficient room for birds.

However, the practice of housing birds in deep litter is being replaced by cage system because of certain advantages. Firstly, double the number of birds can be accommodated and hence the shed size would be reduced to half; there is virtually total elimination of deep litter diseases like Coccidiosis. Experiments have also shown that birds in cages consume less feed per day, while laying efficiency is also increased as farmers often achieve up-to 2 to 3 extra eggs hen-housed.

Besides deep litter and cage system, there are also environment controlled houses, where constant temperature can be maintained for bird's comforts. Environment control, if used, can save a lot of space for raising poultry. For example, one can almost double the number of broilers produced in an environment controlled house than in a conventional house. Environment controlled houses are especially useful during hot weather. When the temperature exceeds 30 degrees C and above. However, cost-effectiveness of environment control for commercial poultry has yet to be established.

#### **1.4 Automation In Poultry Farming :**

Good poultry husbandry and management are conducive for better egg and meat production. Flocks that are continuously subjected to severe management deficiencies cannot attain their performance goals.

In India, in the early eighties, as the poultry sector gathered momentum, in some of the big farms, the need was felt to install mechanical devices, which could help to increase productivity.

The first system to be mechanized was feeding, followed by watering. To-day one sees nipple drinkers and automatic pan feeding systems on broiler farms and chain or hopper feeding systems on layer farms. With the use of automatic feed system, the feed wastage is eliminated. All birds get feed at the same time. Feeding can be put on a time clock, so that birds can get fresh feed. Automatic feeding also helps birds to convert feed better. Similarly, with automatic watering, birds have access to fresh water which contributes to their balanced growth and production. The automatic feeding system, has distinct advantages over manual feeding and watering. Manual feeding takes too long to

make feed available to birds at the same time, resulting in uneven growth, poor development of birds, less of production in layers and poor weight gain in broilers. Further, feed wastage while filling feeders is there and feed is expensive . Water can also be one of the major sources of disease transmission. If manually provided, birds can get into the water resulting in contamination.

Automatic feeding and watering systems are the two most essential features in the modernization of poultry houses. The other areas of automation are:

- (a) Drinking
- (b) dosing of disinfectants/medication
- (c) lighting
- (d) feeding
- (e) vaccination
- (f) egg collection
- (g) egg grading
- (h) control of environment
- (i) removal of litter
- (j) bird weighing
- (k) bird catching
- (l) equipment to monitor the above

Further equipment is also available for 'brooding' the chicks. The term brooding means 'to heat'. Brooding refers to the rearing of day-old-chicks to an age of 6 to 8 weeks, protecting them from chilled weather and giving them a good growing start by inducing in



protecting them from chilled weather and giving them a good growing start by inducing in them a power of adjustability to new environment. Brooding again can be natural or artificial. Natural brooding is the natural process of rearing of chicks by a hen. This method is in practise in villages where poultry is raised in the form of backyard poultry. Desi hens provide warmth to their chicks by keeping them under their wing and protect them from chilling. This method needs no investment and very little care by the farmer. This method is however, not feasible in case of large-scale operation. Further, if a hen is sick, the disease may get transmitted to the chicks.

In case of artificial brooding, chicks are reared without the hen and instead brooding equipment is resorted to. The objective of brooding equipment is to provide a suitable temperature to chicks from the day-old stage up-to the time they are able to adapt and regulate themselves to the environment. Brooding equipment exists in the form of heaters or thermometers which provide warmth to the room. Good brooder temperature results in better growth.

It can therefore be observed that automation in poultry industry has shown progress. Of-course, any automation on the farm will naturally require well-trained personal. The main constraint to automation besides high cost however is its reliability on power supply which is quite erratic. However, a one time investment in automation has the following advantages:

- a) dependence on labour is avoided;
- b) labour costs are reduced considerably;

- c) provides round the clock fresh water and feed, leading to better feed intake, bird health and consequently higher production;
- d) reduction in wastage of feed and water.

### **1.5 Approach To Poultry Development :**

As mentioned earlier, poultry farming helps to close the 'protein gap' and meet nutritional standards of the population. Poultry development is thus important to any country, whether it is a developed or a developing nation. Also, poultry development can be promoted through a wider range of strategies, depending upon the resources that a country possesses. This has led to the development and existence of two types of industries. Like in most other fields, in poultry industry too, there are two types of poultry farming. The industrialized and the primitive or the traditional which can also be known as Commercial vs backyard poultry. Industrialized poultry is generally characterized by practices like environmentally controlled housing and automation while traditional poultry farming is labour-intensive and less adaptive to modern innovations. The strategy adopted by each country, depends upon its socio-economic conditions, needs and problems which vary from country to country. For example, controlled housing may be a necessity in areas where extreme climatic conditions prevail, like North America and Middle East. But in parts such as Asia where the climate is more or less equitable., this could be drain on scarce resources. Similarly, complete automation cannot be avoided in countries where human labour is in short supply and expensive. But in developing countries which are normally over populated, and where poultry farming is not just a means of mass food production but an important source of mass employment, automation can only have a

limited role, to the extent that it does not take away one's source of livelihood. The world's poultry industry thus accommodates both types of farming – the industrialized and the traditional. The very sophisticated industries cater to the needs of urban areas and export markets and low capital-intensive and labour-intensive industries cater to rural markets and more importantly generate employment opportunities. Thus, we have the example of an underdeveloped nation such as Bangla Desh, which is yet at the stage of backyard farming. This village-based poultry production in Bangla Desh is considered sustainable as most of the basic feed stems from scavenging, and the feed supplements which are needed for increased production are mostly home-grown grains and by-products. Also, this strategy provides high quality protein and cash income to the rural poor families. On the whole, most of the poultry production in Bangala Desh is from indigenous birds which have an average egg production of around 35-45 eggs per year. The other extreme example with complete automation in poultry farming is USA. In the USA, with a layer population of 240 million in 1988, there were just 1,668 farms. About 64 per cent of the birds were owned by 58 companies. It is also estimated that by 2000 AD, 80 per cent of the birds will be owned by just 25 or fewer firms. As against this, India, with a layer population of 150 million and broiler population of 210 million (1992) has 1 lakh poultry farms and employs nearly 7 lakh people. By the year 2000 AD, we expect the employment potential to go up to nearly 3 million. Again, in Bangla Desh, out of a total of 40 million layers, barely 200 farms are classified as commercial enterprises having flock strengths ranging from 500 to 25,000 birds, which means that the majority of the production comes from backyard farms, having less than 500 birds.<sup>3</sup>

The point that emerges from the above discussion is that – it is good to have an industry that provides food to millions, But it is, better to have an industry which does the same thing and at the same time provides employment to millions of people. It is in this content that traditional poultry farming continues to have relevance in the developing world. The China, the largest egg producing country in the world, is again an example of traditional poultry farming, where 80 per cent of the birds belong to local breeds and only 20 per cent to improved breads. The yield per layer of local eggs is merely 120 eggs per year. Thailand, is again an example where 98 per cent of the poultry-producing units are small traditional farms.

The overall picture with respect to the world poultry scene is that both industrialized as well as traditional poultry co-exist and are complementary to each other.

#### **1.6 Approach To Poultry Development In India :**

As in most of the developing world, the poultry sector in India continues to be dual in character; the backyard small farms which are the extensive small scale sector and highly labour intensive, where poultry production represents not only a source of revenue but also a saving that can be readily mobilized. In this system, poultry birds usually scavenge around the owner's house or in food-crop fields. Besides, there is also the intensive or large-scale sector, where the poultry production units are highly automated and conducted on commercial scale. However, the extensive small scale units assume importance in India in view of our socio-economic conditions viz. Providing supplementary income and employment in rural areas especially to marginal and landless farmers.

Since traditional poultry farming has relevance in India, the Government of India has placed enormous emphasis on the development of the small sector and has treated poultry farming as one of the “thrust areas” in the country’s five year plans. Further, in the eighth five-year plan, the major allocation to-wards poultry was to be utilized for promoting small production units under the Integrated Rural Development programme. These small production units normally have capacities as low as 100-200 birds almost in the backyard of the entrepreneur and looked after by himself or his family. These small traditional units function in complete contrast to the intensive sector which have a high degree of technical competence and have established breeding farms of international standards, vaccine production units, high tech incubators, ultra-modern processing units etc. Most of these developments have come about through private enterprise.

Thus, while poultry farming has achieved technical competence in India, it is still the traditional sector which is pre-dominant. While a part of the poultry sector is organized and has assumed the dimension of industrial production in terms of scale, it is the unorganized sector which consists of thousands of small farms scattered all over the country with small scale of operation which characterize the Indian poultry scene. Even though the scale of operation of each unit is small, their collective contribution is very significant at national level to the poultry industry.

Keeping in view the fact that, traditional poultry and backyard farming which fall in the unorganized sector of the poultry industry, is still prominent in India, a study has been undertaken dealing with this aspect i.e. the role of unorganized sector in poultry development and its economics.

As mentioned earlier, in India the poultry industry is dual in character comprising of highly automated units as well as backyard farms. Another way to describe this dual characteristic is to classify the poultry sector into the 'organized sector' and the 'unorganized sector'. In this context it would perhaps be relevant to define the unorganized sector. The concept of the unorganized sector is however a debatable issue. It is sometimes defined as the sector which is not recorded under any factory legislation. It can be noted that "the establishments which employ 10 or more workers and use power and the establishment which employ 20 or more workers without using power, are required to register themselves under the Factories Act, 1948. They are hence known as factories and fall under the 'organized sector' and come under the coverage of the Annual Survey of industries. The rest of the establishments come under the "unorganized sector"<sup>4</sup>. The unorganized sector consists of 'unregistered units with unpublished data base.

A more meaningful use of the concept of unorganized sector is its identification with pre-capitalist structure of production while organized sector is related to capitalist structure. In this sense, the unorganized sector is comprised of own account workers, and also casual labour employed in establishments. The latter do not have access to the benefits of social security. The unorganized sector is also characterized by low capital intensity, low level of productivity, low level of formal schooling, intermediate technology, preponderance of family labour etc.<sup>5</sup>

As mentioned earlier, in India the traditional poultry sector still assumes importance and keeping this in mind, we have undertaken a study on "Economics of

**Poultry Development and Role of Unorganized sector". Our study would be with reference to the state of Maharashtra.**

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  - 5. Unorganized Sector and Structural Adjustment – G. Parthsarthy, EPW Vol. XXXI, No.28, July 13, 1996).**

## **Chapter II**

### **Status of Poultry Sector In Maharashtra**

It was observed in the previous chapter, that among all the states in India, Maharashtra ranked second in broiler production and was close to Andhra Pradesh which had highest broiler production. In other words, Maharashtra's contribution to the broiler production of the country was 17.09 per cent, while the contribution of Andhra Pradesh was slightly higher i.e. 17.82 per cent. Most of the other states lagged far behind these two states in broiler production. Again, with respect to egg production, compared to other states, Maharashtra was in the forefront and ranked third in the country.

From the above, the importance of Maharashtra, to the poultry sector of the economy can be understood.

#### **2.1 Poultry Population in Maharashtra : (With special reference to Layers)**

The state of Maharashtra has 40 hatcheries, out of which 34 are in the private sector while 6 are in the Government sector. Further, in the private sector, 8 are layer hatcheries while 26 are broiler hatcheries.<sup>1</sup> The Department of Animal Husbandry, Government of Maharashtra, collects data on poultry population in Maharashtra. The total number of poultry households surveyed, in order to estimate the poultry population was 24870, as per the 1992 Livestock Census.<sup>2</sup> In the Livestock Census, data are available for each district (taluka-wise) on total poultry birds i.e. cocks, hens and chicks. This data is available separately for deshi and improved birds. Further, as the number of layers is estimated and average number of eggs laid per layer per year collected, the annual egg production is accordingly estimated.



The Livestock Census does not clearly specify the broiler production. The production of broilers is a relatively recent phenomenon, started as a novelty in early seventies, with the introduction of hybrid strains from poultry breeding farms in other countries. Broilers are specially bred birds for table purposes and are produced on a commercial scale by hatcheries. In order to obtain the figures on estimated production of broilers, which are produced by commercial hatcheries we have referred to other sources.

### 2.1.1 Growth of Poultry Population In Maharashtra :

The poultry Population in Maharashtra is showing an increasing trend and can be observed from the Table I.

**Table I : Poultry Fowls In Maharashtra ( In 000 )**

<b>1. Poultry Fowls</b>	<b>1982</b>	<b>1987</b>	<b>1992</b>
i) Deshi	16340	18306	22715
ii) Improved	3428	6471	9393
iii) Total (i+ii)	19768	24777	32108
<b>2. Total Poultry Layers</b>	<b>9104</b>	<b>11908</b>	<b>14460</b>
i) Deshi Layers	7145	8261	10486
ii) Improved Layers	1959	3646	3975

**Source : Fourteenth and Fifteenth All India Livestock and Farm Equipment Census, 1992, Maharashtra State**

From Table I, it can be observed that there has been a phenomenal increase in poultry population during the period 1982 to 1992 and the increase was of the order of 39 per cent. The same was the case with layers and the layer population increased by 59 per cent during the period 1982 to 1992. The noteworthy feature regarding the poultry population is that over the years the share of deshi fowls is decreasing and that of improved birds is increasing. While the share of deshi birds in the total poultry population was 82.6 per cent in 1982, its share came down to 71 per cent in 1992. There was 174 per

cent increase in improved poultry fowl between 1982 to 1992 and 103 per cent increase in improved layers during the same period. In fact this trend can be observed since 1961 and is shown in Graph I. In 1961 while deshi birds constituted 98.32 per cent of poultry population, its share declined to 71 per cent in 1992. All this goes to say that backyard poultry raising though still common to-day is being accompanied by improved varieties.

Backyard rural poultry units still have an important role to play as these semi-intensive units produce eggs at an insignificant cost. Perhaps, the cheapest egg that is produced is the one laid in the backyard by a hen feeding on nothing specific. However, backyard poultry does not result in as many eggs as the intensive system. While the laying percentage is 31.24 per cent in case of deshi layers, it is 72.13 per cent in case of improved layers. Thus while intensive poultry units can produce as much as 270 eggs per layer per year, the village poultry units may be expected to yield, atleast 60-70 eggs per bird, per year. But, as already mentioned, this method is still popular, because the cost of production is virtually negligible as the birds are not fed with specially formulated feeds for higher production.

### **2.1.2 District-wise Poultry Population In Maharashtra :**

After looking at the growth of poultry population in Maharashtra, a look at its district-wise share would perhaps be useful, in order to observe the poultry pockets of the state .

In Table II we have shown the district-wise distribution of poultry fowls while Table III shows the percentage share of each district in the state total.

Table II : Poultry Population in Maharashtra (District-wise) 1992

DISTRICTS	COCKS			HENS			CHICKS				
	deshi	improved	total	deshi	improved	total	Deshi for eggs	For meat Improved for	For meat for eggs		
Greater Bombay	23256	13440	36676	61365	15139	76504	39138	26311	1063155	3523	1102293
Thane	354067	26012	380079	506170	23316	529486	375936	208451	25252	205896	401188
Raigad	193772	55906	249678	437999	43951	481950	295409	85065	33920	323261	329335
Ratnagiri	236335	14716	251051	455646	85107	540753	357931	172865	31763	34279	389694
Sindhudurge	164926	13961	178887	277076	30225	307301	193918	178789	19877	12059	213795
Nasik	132554	25874	158428	466804	228753	695557	368805	116870	183332	413597	552137
Dhule	122662	10693	133355	347052	66251	413303	261797	95153	49196	62391	310993
Jalgaon	94591	11052	105643	279739	36417	316156	205460	38320	13129	34557	218589
Ahmadnagar	245020	13435	258455	1000620	232268	1232888	565896	75870	39318	359740	605214
Pune	246147	29732	275906	1243519	1103022	2346541	457773	55800	149927	757875	607700
Satara	221150	12074	233224	917039	250275	1167314	349627	18500	64933	19167	414560
Sangli	156212	9701	165913	660588	746899	1407487	285267	18399	269047	33204	554314
Solapur	176792	12700	189492	794886	498523	1293409	322352	15055	274364	12265	596716
Kolhapur	131120	3829	124949	433088	285771	718859	320154	26376	148998	33461	469152
Aurangabad	57572	3654	61226	185148	39508	234656	129944	17872	17130	45592	147074
Jalna	48648	1697	50345	137498	3503	141001	101436	24097	1795	644	103231
Parbhani	54407	5484	59891	146081	24214	170295	102090	38781	13933	1343	116023
Beed	88226	6995	95221	259039	36211	295250	142701	32374	24568	12247	167269
Nanded	65600	3615	69215	151925	19116	171041	117843	51807	12294	4722	130137
Ornatnabad	42427	7484	49911	150750	15351	166101	62197	14363	7162	4171	69359
Latur	33919	1932	35851	99170	4319	103489	64824	8878	1757	10986	66581
Buldhana	41657	3560	45217	119601	6849	126450	99265	7719	5705	4230	104970
Akola	42457	2454	44911	147871	7433	155304	131905	17210	5271	5772	137176
Amravati	40671	2589	43260	119638	14657	134295	106038	8919	5974	8892	112012
Yavatmal	69961	2422	72382	242305	6791	249096	248829	77754	6044	5402	254873
Wardha	30999	1774	32773	80215	4048	84263	71459	19717	1964	7856	73423
Nagpur	53264	21944	75208	137147	75505	212652	131639	62947	35766	72862	167405
Bhandara	113099	13866	126965	237647	35859	293506	180012	211717	31049	27909	211061
Chandrapur	88397	4839	93236	233844	9618	243462	1197489	313548	4257	7932	201746
Gadchiroli	79849	2095	81944	156213	5891	162104	150564	302380	6854	4831	157418
Total	3426501	326089	3733316	10424318	3939651	14393969	6398560	2315596	1484579	2527243	7883145

Source : Fifteenth All India Livestock And Farm Fumishment Census 1007 Government of Maharashtra

Table III : Poultry Population In Maharashtra (Districtwise percentage) 1992

DISTRICTS	COCKS			HENS			DESHI		IMPROVED		TOTAL
	deshi	improved	total	deshi	improved	total	for eggs	for meat	for eggs	for meat	for eggs
Greater Bombay	0.68	4.12	0.98	0.59	0.38	0.53	0.61	1.14	71.61	0.14	13.98
Thane	10.33	7.98	10.18	4.86	0.59	3.68	5.88	9.00	1.70	8.15	5.09
Raigad	5.66	17.14	6.69	4.20	1.12	3.35	4.62	3.67	2.28	12.79	4.18
Ratnagiri	6.90	4.51	6.72	4.37	2.16	3.76	5.59	7.47	2.14	1.36	4.94
Sindhurge	4.81	4.28	4.79	2.66	0.77	2.13	3.03	7.72	1.34	0.48	2.71
Nasik	3.87	7.93	4.24	4.48	5.81	4.83	5.76	5.05	12.35	16.37	7.00
Dhule	3.58	3.28	3.57	3.33	1.68	2.87	4.09	4.11	3.31	2.47	3.95
Jalgaon	2.76	3.39	2.83	2.68	0.92	2.20	3.21	1.65	0.88	1.37	2.77
Ahamadnagar	7.15	4.12	6.92	9.60	5.90	8.57	8.84	3.28	2.65	14.23	7.68
Pune	7.18	9.12	7.39	11.93	28.00	16.30	7.15	2.41	10.10	29.99	7.71
Satara	6.45	3.70	6.25	8.80	6.35	8.11	5.46	0.80	4.37	0.76	5.26
Sangli	4.56	2.97	4.44	6.34	18.96	9.78	4.46	0.79	18.12	1.31	7.03
Solapur	5.16	3.89	5.08	7.63	12.65	8.99	5.04	0.65	18.48	0.49	7.57
Kolhapur	3.83	1.17	3.35	4.15	7.25	4.99	5.00	1.14	10.04	1.32	5.95
Aurangabad	1.68	1.12	1.64	1.78	1.00	1.63	2.03	0.77	1.15	1.81	1.87
Jalana	1.42	0.52	1.35	1.32	0.09	0.98	1.59	1.04	0.12	0.03	1.31
Parbhani	1.59	1.68	1.60	1.40	0.61	1.18	1.60	1.67	0.94	0.05	1.47
Beed	2.57	2.15	2.55	2.48	0.92	2.05	2.23	1.40	1.65	0.48	2.12
Nanded	1.91	1.11	1.85	1.46	0.49	1.19	1.84	2.24	0.83	0.19	1.65
Oamanabad	1.24	2.30	1.10	1.45	0.39	1.15	0.97	0.62	0.48	0.17	0.88
Latur	0.99	0.59	0.96	0.95	0.11	0.72	1.01	0.38	0.12	0.43	0.84
BULDHANA	1.22	1.09	1.21	1.15	0.17	0.88	1.55	0.33	0.38	0.17	1.33
Akola	1.24	0.75	1.20	1.42	0.19	1.08	2.06	0.74	0.36	0.23	1.74
Amravati	1.19	0.79	1.16	1.15	0.37	0.93	1.66	0.39	0.40	0.35	1.42
Yavatmal	2.04	0.74	1.94	2.32	0.17	1.73	3.89	3.36	0.41	0.21	3.23
Wardha	0.90	0.54	0.88	0.77	0.10	0.59	1.12	0.85	0.13	0.31	0.93
Nagpur	1.55	6.73	2.01	1.32	1.92	1.48	2.06	2.72	2.41	2.88	2.12
Bhandara	3.30	4.25	3.40	2.28	0.91	2.04	2.81	9.14	2.09	1.10	2.68
Chandrapur	2.58	1.48	2.50	2.24	0.24	1.69	3.09	13.54	0.29	0.31	2.56
Gadchiroli	2.33	0.64	2.19	1.50	0.15	1.13	2.35	13.06	0.46	0.19	2.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Derived from Table II.

From Table III, it can be observed that maximum poultry concentration is in Pune district and is of the order of 12.59 per cent. Followed by Pune is Ahmednagar with a relatively less poultry population and accounts for 7.89 per cent of the state total. Nasik, Sangli and Solapur account for 6 to 7 per cent of the state's poultry fowls. In most other districts, the poultry population is less than 6 per cent.

In case of layer population again, Pune's share is relatively higher and accounts for 16.22 per cent of the layer population in the state. The other districts i.e., Satara, Sangli, Solapur which follow Pune have a layer population ranging between 8 to 9 per cent. In most other districts it is 3 per cent or less. The same trend is observed with respect to deshi and improved layers.

Therefore the main conclusion that emerges from the district-wise data on poultry population in Maharashtra is that Pune has a maximum share in the poultry sector of the state and its share is significantly higher than that in other districts.

### 2.1.3 Egg Production In Maharashtra State :

As mentioned earlier, Maharashtra rank's third in the country's egg production and almost 11 per cent of the egg production of the economy comes from Maharashtra.

Table IV indicates the egg production in Maharashtra since the last eight years.

**Table IV : Egg Production in Maharashtra State (lakhs)**

Year	Deshi	Improved	Total
1988-89	9270	8722	17992
1989-90	9540	10026	19566
1990-91	9840	11138	20978
1991-92	10042	11410	21452
1992-93	10168	12741	22909
1993-94	10618	12763	23381
1994-95	11389	13621	25010
1995-96	11876	14153	26029

Source : Government of Maharashtra, Department of Animal Husbandry, Pune.

From the above table it can be observed that the total egg production has increased by 45 per cent. While the production of deshi eggs increased by 28 per cent, that of improved eggs increased by 62 per cent. As we have already discussed, this is because improved layers have a much higher laying percentage than deshi birds. Also, the share of deshi eggs which was 51 per cent in total egg production in 1988-89, came down to 46 per cent in 1995-96.

The increasing trend in egg production by improved layers can also be observed in Graph II. While the contribution from deshi layers was 45.6 per cent, that of improved birds was 54.4 per cent in 1995-96.

#### **2.2.1 District-wise Egg Production in Maharashtra State:**

After studying the contribution of Maharashtra state to the egg production of the economy, the district-wise study on egg production would enable us to observe the main egg producing districts. Of-course, we have already observed the district-wise poultry population in Table II and III. Naturally, the districts having higher layer population would be the major producers of eggs. This can be observed from Table V.

From Table V, it can be observed that out of a total production of 26028.77 eggs in Maharashtra in 1995-96 the share of Pune region is 14950.14 eggs which means that Pune again contributes 57.4 per cent to the state's egg production. Again in Pune region, it is Pune district which has maximum production of eggs. Pune district alone contributes 20.27 per cent to the state's egg production while its share in the Pune region is 35.3 per cent, followed by Sangli which has a relatively lower share of 23.2 per cent.

**Table V: Egg Production in Maharashtra State During the Year 1995-96. (in lakhs)**

Sr. No.	District	Deshi Poultry Egg Produced	Improved Poultry Egg Produced	Total Egg Production
<b>MUMBAI REGION</b>				
1.	Brihan Mumbai	71.13	53.78	123.91
2.	Thane	616.81	83.50	700.31
3.	Raigad	533.73	155.69	689.42
4.	Ratnagiri	581.04	302.87	883.91
5.	Sindhudurg	353.32	107.56	460.88
<b>TOTAL</b>		<b>2155.03</b>	<b>703.40</b>	<b>2858.43</b>
<b>NASIK REGION</b>				
6.	Nashik	458.07	813.80	1271.87
7.	Dhule	340.56	236.35	576.91
8.	Jalgaon	274.51	130.21	404.72
9.	Ahmednagar	1085.45	826.54	1911.99
<b>TOTAL</b>		<b>2158.59</b>	<b>2006.90</b>	<b>4165.49</b>
<b>PUNE REGION</b>				
10.	Pune	1348.94	3927.46	5276.40
11.	Satara	1131.03	891.64	2022.67
12.	Sangli	814.73	2659.35	3474.08
13.	Solapur	850.46	1774.78	2625.24
14.	Kolhapur	534.15	1017.60	1551.75
<b>Total</b>		<b>4679.31</b>	<b>10270.83</b>	<b>14950.14</b>
<b>AURANGABAD REGION</b>				
15.	Aurangabad	177.68	140.12	317.80
16.	Jalna	131.95	12.74	144.69
17.	Parbhani	145.63	86.33	231.96
18.	Beed	277.15	128.79	405.94
19.	Nanded	151.45	67.93	219.38
20.	Osmanabad	161.29	55.20	216.49
21.	Latur	106.10	15.57	121.67
<b>TOTAL</b>		<b>1151.25</b>	<b>506.68</b>	<b>1657.93</b>
<b>AMARAVATI REGION</b>				
22.	Buldhana	114.79	24.06	138.83
23.	Akola	173.63	26.89	200.52
24.	Amaravati	140.48	52.37	192.85
25.	Yavatmal	284.51	24.06	308.57
<b>TOTAL</b>		<b>713.41</b>	<b>127.38</b>	<b>840.79</b>
<b>NAGPUR REGION</b>				
26.	Wardha	97.11	14.15	111.26
27.	Nagpur	166.03	268.90	434.93
28.	Bhandara	287.70	199.57	487.26
29.	Chandrapur	280.18	33.97	314.15
30.	Gadchiroli	187.16	21.23	208.39
<b>TOTAL</b>		<b>1018.18</b>	<b>537.81</b>	<b>1555.99</b>
<b>STATE TOTAL</b>		<b>11875.77</b>	<b>14153.00</b>	<b>26028.77</b>

**Source: Department of Animal Husbandry, Government of Maharashtra**

After Pune region, it can be observed that Nasik region ranks second in egg production and contributes to 16 per cent of the state's egg production. Although Nasik again occupies the second rank, its production, as observed is much lower than that of Pune region. The contribution of Mumbai region is 11 per cent while Aurangabad and Nagpur region each contribute 6 per cent to egg production. Amravati region has the lowest share and only 3.2 per cent of the egg production comes from this region.

Out of the total layers in the state, 66 per cent are deshi and they contribute to 45.6 per cent of egg production. The improved birds which are 34 per cent i.e. half the population of deshi birds contribute to 54.4 per cent of the eggs.

## **2.2 Broiler Production In Maharashtra :**

The contribution of broilers to the poultry sector has been rising more rapidly than that from eggs for the economy as a whole. The production of broilers which was virtually negligible in 1971 (about 4 million) increased to 275 million in 1994 and the state of Maharashtra has a major role to play in the contribution towards of broiler production.

As we already know Andhra Pradesh and Maharashtra are the two main states in the country where broiler production is concentrated. Both the states have a parent-stock of 465 million.

As in the case of egg production, even in case of broiler production, Pune region seems to have maximum concentration of broilers. While the district-wise data on broiler production is not available, the data is available region wise and is presented in Table VI.



**Table VI : Estimated Placement of Commercial Broilers In Major Pockets of Poultry in Maharashtra (1994)**

(In Thousands)

Bombay-Panvel-Alibag-Thane	14,000
Nasik	13,000
Pune-Vadgaon-Mawal	15,000
Ahmednagar	500
Total Maharashtra	47,000

Source : Indian Poultry Industry Year-book 1994.

Table VI indicates that broiler production is concentrated in Pune and Bombay. Perhaps, this is true because almost the entire stock of broilers produced are consumed in cities and towns, leaving the vast demand in rural areas to be met by desi birds.

### **2.3 Poultry Population In Pune District :**

In the preceding sections we studied the share of Maharashtra in the poultry sector of the economy and observed that its contribution is quite significant. Further, in terms of layers and broilers Pune district in Maharashtra has a leading share. Again in Pune district, layer and broiler farms are concentrated only in a few talukas.

Table VII indicates the poultry population of Pune District as per 1992 livestock census. It can be observed that Mawal taluka has maximum poultry population and 28.4 per cent of Pune's poultry is in Mawal taluka. Next in rank is Haveli which has a share of 15.50 percent. In case of a few talukas such as Indapur, Daund, Junnar and Purandhar, the share ranged between 5 to 9 per cent while in case of other talukas it was less than 3 per cent.

Recognizing the importance of poultry in Maharashtra, a study has been undertaken to study the economic viability of these poultry units. The sample of our study is focussed on Pune District, which as we observed is a major poultry pocket in Maharashtra.

Table VII : Poultry Population In Pune District

DISTRICTS	COCKS			HENS			CHICKS				
	deshi	improved	total	Deshi	Improved	total	deshi	Improved	to		
Pune city	4090	186	4276	12246	434115	55661	7391	9237	17607	1332	24998
Haveli	18311	9269	27580	295434	137171	432605	34187	10113	34995	87364	69182
Khed	16148	216	16364	75642	633	76275	32175	5110	548	13002	32723
Ambezaon	12122	950	13072	47611	4938	52549	18621	820	3203	15495	21824
Junner	13728	5616	19344	64997	1791	66788	23209	5340	3022	97046	26231
Shirur	15354	308	15662	73075	2107	75182	34868	1531	15613	627	50481
Daund	20967	4856	25823	121558	59068	180626	51958	7259	15630	81857	67588
Indapur	39621	1420	41041	148124	76652	224776	65043	6231	33294	189	98337
Baramati	35007	450	35457	127927	46892	174819	53492	2774	9180	252	62672
Purandar	23887	1858	25745	99642	8187	107829	31562	751	1623	24081	33188
Bhor	11652	1594	13246	53420	3354	56774	38264	1106	3147	38434	41411
Velhe	12451	88	12539	31393	116	31509	17229	1982	145	21	17374
Mulshi	10650	239	10889	41628	27888	69516	25779	2866	1367	39857	27146
Maval	12186	2682	14868	50822	690810	741632	23992	680	10553	358318	34545
Total	246174	29732	275906	1243519	1103022	2346541	457773	55800	149927	757875	607700

Source : Fifteenth Livestock and Farm Equipment Census (All India) Department of Animal Husbandry, Government of Maharashtra



Sr. No.	Name of the District/ Tahsil/ Block	Poultry-fowls					
		Fowls					
		Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>GREATER BOMBAY</b>							
	<b>Total ...</b>	<b>23256</b>	<b>13440</b>	<b>36696</b>	<b>61365</b>	<b>15139</b>	<b>7650</b>
<b>DISTRICT THANE</b>							
1	Thane ...	8563	6942	15505	14641	1782	1642
2	Vasai ...	22147	2810	24957	70418	7035	7745
3	Palghar ...	24111	1982	26093	80237	3043	8328
4	Dahanu ...	20340	432	20772	56016	2491	5850
5	Talasari ...	8989	0	8989	25038	82	2512
6	Jawhar ...	24199	231	24430	45152	284	4543
7	Mokhada ...	4287	28	4315	17993	73	1806
8	Vada ...	10651	220	10871	26824	430	2725
9	Bhivandi ...	25503	271	25774	48707	1200	4990
10	Shahapur ...	20754	896	21650	58463	879	5934
11	Murbad ...	170068	4872	174940	28485	1934	3041
12	Kalyan ...	8427	3552	11979	21355	1934	2328
13	Ulhasnagar ...	6028	3776	9804	12841	2149	1499
	<b>District Total ...</b>	<b>354067</b>	<b>26012</b>	<b>380079</b>	<b>506170</b>	<b>23316</b>	<b>52948</b>
	<b>Rural ...</b>	<b>331402</b>	<b>13026</b>	<b>344428</b>	<b>453709</b>	<b>15434</b>	<b>46914</b>
	<b>Urban ...</b>	<b>22665</b>	<b>12986</b>	<b>35651</b>	<b>52461</b>	<b>7882</b>	<b>6034</b>
<b>DISTRICT RAIGAD</b>							
1	Alibag ...	16542	29574	46116	56891	4121	61012
2	Uran ...	6444	620	7064	19521	2280	21801
3	Panvel ...	11426	2524	13950	22585	12525	35110
4	Karjat ...	12523	566	13089	27494	1404	28898
5	Khalapur ...	10800	19725	30525	14572	9537	24109
6	Pen ...	8145	171	8316	65924	3265	69189
7	Sudhagad (Pali) ...	7879	822	8701	17031	8263	25294
8	Roha ...	13739	523	14262	22471	218	22689
9	Mangaon ...	31783	252	32035	55206	414	55620
10	Mahad ...	28855	559	29414	59086	1343	60429
11	Poladpur ...	12594	321	12915	18822	392	19214
12	Mhasala ...	1523	0	1523	2383	0	2383
13	Shrivardhan ...	15406	122	15528	24566	91	24657
14	Murud ...	16113	127	16240	31447	98	31545
	<b>District Total ...</b>	<b>193772</b>	<b>55906</b>	<b>249678</b>	<b>437999</b>	<b>43951</b>	<b>481950</b>
	<b>Rural ...</b>	<b>184140</b>	<b>54571</b>	<b>238711</b>	<b>410106</b>	<b>37892</b>	<b>447998</b>
	<b>Urban ...</b>	<b>9632</b>	<b>1335</b>	<b>10967</b>	<b>27893</b>	<b>6059</b>	<b>33952</b>

Poultry-fowls

Fowls									
Chicken (Below 5 months)						Total Chicken	Total Poultry-fowls		
Deshi		Improved		Total			Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)	(15)	(16)	(17)	(18)
39138	26311	1063155	3523	1102293	29834	1132127	160070	1095257	1245327
8866	11853	2375	18362	11241	30215	41456	43923	29461	73384
39445	5376	7113	86531	46558	91907	138465	137386	103489	240875
84807	34121	7844	36660	92651	70761	163432	223276	49529	272805
56370	23013	2498	3154	58868	26167	85035	155739	8575	164314
20179	3568	73	16	20252	3584	23836	57774	171	57945
27847	46511	84	1133	27931	47644	75575	143709	1732	145441
4608	4441	0	6011	4608	10452	15060	31329	6112	37441
17287	21119	340	134	17627	21253	38880	75881	1124	77005
31906	11060	170	889	32076	11949	44025	117176	2530	119706
44570	29659	834	3907	45404	33566	78970	153446	6516	159962
13520	6621	1095	1827	14615	8446	23063	218694	9728	228422
13520	6621	1095	1827	14615	8446	23063	49923	8408	56331
13011	4488	1731	45445	14742	49933	64675	36368	53101	89469
375936	208451	25252	205896	401188	414347	815535	1444624	280476	1725100
336910	188239	18953	177691	355663	365930	721793	1310260	225104	1535364
39026	20212	6299	28205	45325	48417	93742	134364	55372	189736
40017	2399	2489	133100	42506	135499	178005	115849	169284	285133
9361	8230	1545	4430	10906	12660	23566	43556	8875	52431
13979	4521	13827	21806	27806	26327	54133	52511	50682	103193
27947	9072	1601	7933	29548	17005	46553	77036	11504	88540
15294	11564	5734	42705	21028	54269	75297	52230	77701	129931
1686	1610	1240	64015	2926	65625	68551	77365	68691	146056
13971	7278	4872	8718	18843	15996	34839	46159	22675	66834
19821	16156	487	10993	20308	27149	47457	72187	12221	84408
73520	5723	629	422	74149	6145	80294	166232	1717	167949
2705	4945	204	24404	2909	29349	32258	95591	26510	122101
23652	0	588	200	24240	200	24440	55068	1501	56569
2344	3667	0	0	2344	3667	6011	9917	0	9917
27156	9900	710	4535	27866	14435	42301	77028	5458	82486
23956	0	0	0	23956	0	23956	71516	225	71741
295409	85065	33926	323261	329335	408326	737661	1012245	457044	1469289
275715	73938	31499	306893	307214	380831	688045	943899	430855	1374754
19694	11127	2427	16368	22121	27495	49616	68346	26189	94535

Qa 4397-11a

Sr. No.	Name of the District/ Tahsil/ Block	Poultry-fowls					
		Fowls					
		Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>DISTRICT RATNAGIRI</b>							
1	Ratnagiri	30811	1720	32531	45791	7151	5294
2	Guhagar	13350	392	13742	33503	4727	3823
3	Dapoli	31796	2922	34718	64299	9664	7396
4	Mandangad	11889	530	12419	19813	1564	2137
5	Khed	25821	1054	26875	80025	11188	9121
6	Chiplun	40740	5379	46119	79338	18027	9736
7	Sangmeshwar	33534	1258	34792	60309	15060	7536
8	Lanja	20911	697	21608	31530	15721	4725
9	Rajapur	27483	764	28247	41038	2005	4304
	<b>District Total</b>	<b>236335</b>	<b>14716</b>	<b>251051</b>	<b>455646</b>	<b>85107</b>	<b>54075</b>
	<b>Rural</b>	<b>227884</b>	<b>12357</b>	<b>240241</b>	<b>443601</b>	<b>81504</b>	<b>52510</b>
	<b>Urban</b>	<b>8451</b>	<b>2359</b>	<b>10810</b>	<b>12045</b>	<b>3603</b>	<b>1564</b>
<b>DISTRICT SINDHUDURG</b>							
1	Kudal	28405	1759	30164	53734	1440	5517
2	Malvan	24235	2734	26969	37659	3032	4069
3	Devgad	23052	280	23332	37073	5930	4300
4	Vaibhavwadi	9582	1053	10635	31123	3601	3472
5	Kanakawali	27738	2613	30351	40934	10070	5100
6	Sawantwadi	33016	4597	37613	49959	4412	5437
7	Vengurla	18898	925	19823	26594	1740	2833
	<b>District Total</b>	<b>164926</b>	<b>13961</b>	<b>178887</b>	<b>277076</b>	<b>30225</b>	<b>30730</b>
	<b>Rural</b>	<b>161873</b>	<b>13772</b>	<b>175645</b>	<b>271326</b>	<b>30037</b>	<b>30136</b>
	<b>Urban</b>	<b>3053</b>	<b>189</b>	<b>3242</b>	<b>5750</b>	<b>188</b>	<b>593</b>
<b>BOMBAY DIVISION</b>							
	<b>Total</b>	<b>972356</b>	<b>124035</b>	<b>1096391</b>	<b>1738256</b>	<b>107738</b>	<b>193599</b>
	<b>Rural</b>	<b>905299</b>	<b>93726</b>	<b>999025</b>	<b>1578742</b>	<b>104867</b>	<b>174360</b>
	<b>Urban</b>	<b>67057</b>	<b>30309</b>	<b>97366</b>	<b>159514</b>	<b>32871</b>	<b>19238</b>
<b>DISTRICT NASHIK</b>							
1	Nashik	5467	98	5565	20724	336	2106
2	Peth	12705	36	12741	44825	96	4492
3	Dindori	4234	295	4529	23715	161324	18503
4	Surgana	12561	23	12584	36120	248	3636
5	Kalvan	12400	1352	13752	57087	2442	5952
6	Baglan	14082	1151	15233	40209	5247	4545
7	Malegaon	20612	6822	27434	51276	11633	6290
8	Chandvad	7627	984	8611	25684	1418	2710
9	Nandgaon	6433	780	7213	25706	1623	2732
10	Yevla	5216	1011	6227	26791	1962	2875
11	Niphad	8086	1347	9433	37319	8198	4551
12	Sinnar	6933	934	7867	33821	2197	3601
13	Igatpuri	16198	11041	27239	43527	32029	7555
	<b>District Total</b>	<b>132554</b>	<b>25874</b>	<b>158428</b>	<b>466804</b>	<b>228753</b>	<b>69555</b>
	<b>Rural</b>	<b>122223</b>	<b>20078</b>	<b>142301</b>	<b>441934</b>	<b>220424</b>	<b>66235</b>
	<b>Urban</b>	<b>10331</b>	<b>5796</b>	<b>16127</b>	<b>24870</b>	<b>8329</b>	<b>3319</b>

Livestock and Poultry—contd.

Poultry-fowls									
Fowls									
Chicken (Below 5 months)						Total Chicken	Total Poultry-fowls		
Deshi		Improved		Total			Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)	(15)	(16)	(17)	(18)
38953	8623	3146	2227	42099	10850	52949	124178	14244	138422
35876	11054	504	240	36380	11294	47674	93783	5863	99646
31055	21066	4361	5707	35416	26773	62189	148216	22654	170870
19396	12378	950	700	20346	13078	33424	63476	3744	67220
43959	18138	3523	6471	47482	24609	72091	167943	22236	190179
55978	38128	4961	9458	60939	47586	108525	214184	37825	252009
63253	15958	2996	3329	66249	19287	85536	173054	22643	195697
18388	24225	10448	3697	28836	27922	56758	95054	30563	125617
51073	23295	874	2450	51947	25745	77692	142889	6093	148982
357931	172865	31763	34279	389694	207144	596838	1222777	165865	1388642
351200	169762	27341	30506	378541	200268	578809	1192447	151708	1344155
6731	3103	4422	3773	11153	6876	18029	30330	14157	44487
36926	24785	1120	2857	38046	27642	65688	143850	7176	151026
25070	10313	8592	2172	33662	12485	46147	97277	16530	113807
42994	43960	299	128	43293	44088	87381	147079	6637	153716
14140	3410	675	38	14815	3448	18263	58255	5367	63622
21734	61766	6650	3888	28384	65654	94038	152172	23221	175393
34436	21995	1321	1698	35757	23693	59450	139406	12028	151434
18618	12560	1220	1278	19838	13838	33676	76670	5163	81833
193918	178789	19877	12059	213795	190848	404643	814709	76122	890831
191802	178317	19792	11864	211594	190181	401775	803318	75465	878783
2116	472	85	195	2201	667	2868	11391	657	12048
1262332	671481	1173973	579018	2436305	1250499	3686804	4644425	2074764	6719189
1155627	610256	97585	526954	1253212	1137210	2390422	4249924	883132	5133056
106705	61225	1076388	52064	1183093	113289	1296382	394501	1191632	1586133
2107	8864	18316	373555	20423	382419	402842	37162	392305	429467
76153	2884	248	40	76401	2924	79325	136567	420	136987
16972	3961	135750	546	152722	4507	157229	48882	297915	346797
49226	30125	97	27	49323	30152	79475	128032	395	128427
34722	13630	244	0	34966	13630	48596	117839	4038	121877
30303	4163	2918	4045	33221	8208	41429	88757	13361	102118
41856	28089	1966	4431	43822	32520	76342	141833	24852	166685
18774	2902	1357	4707	20131	7603	27740	54987	8466	63453
21717	5228	1649	355	23366	5583	28949	59084	4407	63491
5507	6501	135	15544	5642	22045	27687	44015	18652	62667
18008	4367	3674	853	21682	5220	26902	67780	14072	81852
9947	745	1856	5528	11803	6273	18076	51446	10515	61961
43513	5411	15122	3966	58635	9377	68012	108649	62158	170807
368805	116870	183332	413597	552137	530467	1082604	1085033	851556	1936589
353816	112146	179363	407183	533179	519329	1052508	1030119	827048	1857167
14989	4724	3969	6414	18958	11138	30096	54914	24508	79422

## Poultry-fowls

Sr. No.	Name of the District/ Tahsil/ Block	Fowls					
		Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>DISTRICT DHULE</b>							
1	Dhule	12203	3552	15755	47127	19328	66455
2	Sakri	25107	1615	26722	37766	1239	39005
3	Nawapur	26934	4539	31473	59004	42773	101777
4	Nandurbar	4949	498	5447	31778	1008	32786
5	Talode	4153	43	4196	10726	42	10768
6	Akkalkuwa	13746	8	13754	32233	4	32237
7	Akrani	5150	0	5150	22475	0	22475
8	Shahada	9099	102	9201	31441	187	31628
9	Shirpur	9253	198	9451	38300	520	38820
10	Sindkheda	12068	138	12206	36202	1150	37352
	<b>District Total</b>	<b>122662</b>	<b>10693</b>	<b>133355</b>	<b>347052</b>	<b>66251</b>	<b>413303</b>
	<b>Rural</b>	<b>120390</b>	<b>3167</b>	<b>123557</b>	<b>340321</b>	<b>43846</b>	<b>384167</b>
	<b>Urban</b>	<b>2272</b>	<b>7526</b>	<b>9798</b>	<b>6731</b>	<b>22405</b>	<b>29136</b>
<b>DISTRICT JALGAON</b>							
1	Jalgaon	4863	234	5097	18240	222	18462
2	Chopada	5502	226	5728	15348	296	15644
3	Yawal	6924	241	7165	22639	250	22889
4	Raver	8379	151	8530	23702	229	23931
5	Edalabad	4833	252	5085	16168	310	16478
6	Bhusawal	9296	1099	10395	26561	30584	57145
7	Jamner	8585	121	8706	24993	152	25145
8	Pachora	10005	1000	11005	24202	400	24602
9	Chalisgaon	9465	3846	13311	29958	1633	31591
10	Bhadgaon	3142	63	3205	8636	144	8780
11	Parola	4093	144	4237	20875	277	21152
12	Erandol	12095	2874	14969	30736	492	31228
13	Amalner	7409	801	8210	17681	1428	19109
	<b>District Total</b>	<b>94591</b>	<b>11052</b>	<b>105643</b>	<b>279739</b>	<b>36417</b>	<b>316156</b>
	<b>Rural</b>	<b>85560</b>	<b>6560</b>	<b>92120</b>	<b>261214</b>	<b>33828</b>	<b>295042</b>
	<b>Urban</b>	<b>9031</b>	<b>4492</b>	<b>13523</b>	<b>18525</b>	<b>2589</b>	<b>21114</b>
<b>DISTRICT AHMEDNAGAR</b>							
1	Ahmednagar	21757	650	22407	94288	148494	242782
2	Rahuri	34287	1212	35499	86963	5078	92041
3	Shrirampur	10728	2161	12889	63306	8474	71780
4	Newasa	18457	809	19266	63332	1741	65073
5	Shevgaon	10351	368	10719	31673	887	32560
6	Pathardi	12916	1014	13930	46874	2192	49066
7	Jamkhed	4866	0	4866	21746	0	21746
8	Karjat	20208	383	20591	103816	1013	104829
9	Shrigonda	27234	799	28033	141686	2833	144519
10	Parner	25103	234	25337	136247	2369	138616
11	Akola	16246	242	16488	54259	697	54956
12	Sangamner	31569	1794	33363	117083	8672	125755
13	Kopegaon	11298	3769	15067	39347	49818	89165
	<b>District Total</b>	<b>245020</b>	<b>13435</b>	<b>258455</b>	<b>1000620</b>	<b>232268</b>	<b>1232888</b>
	<b>Rural</b>	<b>236709</b>	<b>11101</b>	<b>247810</b>	<b>937722</b>	<b>225069</b>	<b>1162791</b>
	<b>Urban</b>	<b>8311</b>	<b>2334</b>	<b>10645</b>	<b>62898</b>	<b>7199</b>	<b>70097</b>



Poultry-fowls

Fowls									
Chicken (Below 5 months)						Total Chicken (15)	Total Poultry-fowls		
Desi		Improved		Total			Desi (16)	Improved (17)	Total (18)
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)				
24512	10310	36649	24026	61161	34336	95497	94152	83555	177707
34632	14021	1160	1212	35792	15233	51025	111526	5226	116752
37504	29444	10480	17207	47984	46651	94635	152886	74999	227885
16476	3980	185	1700	16661	5680	22341	57183	3391	60574
9864	4715	199	319	10063	5034	15097	29458	603	30061
24911	7396	4	9	24915	7405	32320	78286	25	78311
17417	0	0	0	17417	0	17417	45042	0	45042
37583	13358	38	1803	37621	15161	52782	91481	2130	93611
31236	3018	410	3539	31646	6557	38203	81807	4667	86474
27662	8911	71	12576	27733	21487	49220	84843	13935	98778
261797	95153	49196	62391	310993	157544	468537	826664	188531	1015195
258609	83165	41390	33948	299999	117113	417112	802485	122351	924836
3188	11988	7806	28443	10994	40431	51425	24179	66180	90359
8323	1716	1827	469	10150	2185	12335	33142	2752	35894
7591	2260	359	669	7950	2929	10879	30701	1550	32251
14239	1874	177	70	14416	1944	16360	45676	738	46414
27213	3077	132	16	27345	3093	30438	62371	528	62899
6942	5161	76	0	7018	5161	12179	33104	638	33742
16580	5650	1182	6126	17762	11776	29538	56087	38991	97078
26385	623	1374	607	27759	1230	28989	60586	2254	62840
18269	353	1200	20497	19469	20850	40319	52829	23097	75926
22922	3134	2434	3624	25356	6758	32114	65479	11537	77016
7012	937	23	21	7035	958	7993	19727	251	19978
10079	6733	115	525	10194	7258	17452	41780	1061	42841
20488	1007	1616	531	22104	1538	23642	64326	5513	69839
19417	5795	2614	1402	22031	7197	29228	50302	6245	56547
205460	38320	13129	34557	218589	72877	291466	618110	95155	713265
193095	34187	9180	24582	202275	58769	261044	574056	74150	648206
12365	4133	3949	9975	16314	14108	30422	44054	21005	65059
44438	5978	2095	339736	46533	345714	392247	166461	490975	657436
69751	6011	1879	1663	71630	7674	79304	197012	9832	206844
37937	1230	3507	1548	41444	2778	44222	113201	15690	128891
56029	5396	2645	1396	58674	6792	65466	143214	6591	149805
25547	2320	1171	2137	26718	4457	31175	69891	4563	74454
32216	5999	3416	2933	35632	8932	44564	98005	9555	107560
16800	12955	0	0	16800	12955	29755	56367	0	56367
70666	6425	501	20	71167	6445	77612	201115	1917	203032
53403	6301	1740	353	55143	6654	61797	228624	5725	234349
49519	2683	660	2073	50179	4756	54935	213552	5336	218888
33016	9451	428	81	33444	9532	42976	112972	1448	114420
51231	8116	1648	2957	52879	11073	63952	207999	15071	223070
25343	3005	19628	4843	44971	7848	52819	78993	78058	157051
565896	75870	39318	359740	605214	435610	1040824	1887406	644761	2532167
552409	73013	38233	356601	590642	429614	1020256	1799853	631004	2430857
13487	2857	1085	3139	14572	5996	20568	87553	13757	101310

## Poultry-fowls

Sr. No.	Name of the District/ Tahsil/ Block	Fowls					
		Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>NASHIK DIVISION</b>							
	<b>Total</b> ...	594827	61054	655881	2094215	563689	2657904
	<b>Rural</b> ...	564882	40906	605788	1981191	523167	2504358
	<b>Urban</b> ...	29945	20148	50093	113024	40522	153548
<b>DISTRICT PUNE</b>							
1	Pune City	4090	186	4276	12246	43415	5566
2	Haveli	18311	9269	27580	295434	137171	432605
3	Khed	16148	216	16364	75642	633	76278
4	Ambegaon	12122	950	13072	47611	4938	52549
5	Junnar	13728	5616	19344	64997	1791	66788
6	Shirur	15354	308	15662	73075	2107	75182
7	Daund	20967	4856	25823	121558	59068	180626
8	Indapur	39621	1420	41041	148124	76652	224776
9	Baramati	35007	450	35457	127927	46892	174819
10	Purandhar	23887	1858	25745	99642	8187	107829
11	Bhor	11652	1594	13246	53420	3354	56774
12	Velhe	12451	88	12539	31393	116	31509
13	Mulshi	10650	239	10889	41628	27888	69516
14	Mawal	12186	2682	14868	50822	690810	741632
	<b>District Total</b> ...	246174	29732	275906	1243519	1103022	2346541
	<b>Rural</b> ...	230855	24606	255461	1193463	1047418	2240881
	<b>Urban</b> ...	15319	5126	20445	50056	55604	105660
<b>DISTRICT SATARA</b>							
1	Satara	27687	2311	29998	110841	8250	119091
2	Wai	7843	3635	11478	40034	14698	54732
3	Khandala	7681	323	8004	32666	2522	35188
4	Koregaon	13951	282	14233	49853	18168	68021
5	Phaltan	29009	1741	30750	118256	9699	127955
6	Man	18560	140	18700	112582	27579	140161
7	Khatav	19104	979	20083	76663	6754	83417
8	Kurad	46000	997	46997	180675	149492	330167
9	Patan	33386	236	33622	119228	5033	124261
10	Javali	14898	1153	16051	65232	7545	72777
11	Mahabaleshwar	3031	277	3308	11009	535	11544
	<b>District Total</b> ...	221150	12074	233224	917039	250275	1167314
	<b>Rural</b> ...	214783	10931	225714	889521	226802	1116323
	<b>Urban</b> ...	6367	1143	7510	27518	23473	50991

Livestock and Poultry—contd.

Poultry-fowls									
Fowls									
Chicken (Below 5 months)						Total Chicken	Total Poultry-fowls		
Deshi		Improved		Total			Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)	(15)	(16)	(17)	(18)
1401958	326213	284975	870285	1686933	1196498	2883431	4417213	1780003	6197216
1357929	302511	268166	822314	1626095	1124825	2750920	4206513	1654553	5861066
44029	23702	16809	47971	60838	71673	132511	210700	125450	336150
7391	9237	17607	1332	24998	10569	35567	32964	62540	95504
34187	10113	34995	87364	69182	97477	166659	358045	268799	626844
32175	5110	548	13002	32723	18112	50835	129075	14399	143474
18621	820	3203	15495	21824	16315	38139	79174	24586	103760
23209	5340	3022	97046	26231	102386	128617	107274	107475	214749
34868	1531	15613	627	50481	2158	52639	124828	18655	143483
51958	7259	15630	81857	67588	89116	156704	201742	161411	363153
65043	6231	33294	189	98337	6420	104757	259019	111555	370574
53492	2774	9180	252	62672	3026	65698	219200	56774	275974
31565	751	1623	24081	33188	24832	58020	155845	35749	191594
38264	1106	3147	38434	41411	39540	80951	104442	46529	150971
17229	1982	145	21	17374	2003	19377	63055	370	63425
25779	2866	1367	39857	27146	42723	69869	80923	69351	150274
23992	680	10553	858318	34545	358998	393543	87680	1062363	1150043
457773	55800	149927	757875	607700	813675	1421375	2003266	2040556	4043822
429835	41962	109199	417174	539034	459136	998170	1896115	1598397	3494512
27938	13838	40728	340701	68666	354539	423205	107151	442159	549310
24043	1702	2941	2056	26984	3758	30742	164273	15558	179831
20986	1616	9025	11423	30011	13039	43050	70479	38781	109260
13187	940	1599	810	14786	1750	16536	54474	5254	59728
27241	1929	1339	97	28580	2026	30606	92974	19886	112860
37275	2556	4785	30	42060	2586	44646	187096	16255	203351
33960	747	7834	0	41794	747	42541	165849	35553	201402
29196	603	13395	2674	42591	3277	45868	125566	23802	149368
61732	1798	20611	332	82343	2130	84473	290205	171432	461637
64453	2643	1144	209	65597	2852	68449	219710	6622	226332
31867	2347	2134	928	34001	3275	37276	114344	11760	126104
5687	1619	126	608	5813	2227	8040	21346	1546	22892
349627	18500	64933	19167	414560	37667	452227	1506316	346449	1852765
342950	17419	59074	18206	402024	35625	437649	1464673	315013	1779686
6677	1081	5859	961	12536	2042	14578	41643	31436	73079

		Poultry-fowls					
		Fowls					
Sr. No.	Name of the District/ Tahsil/ Block	Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>NASHIK DIVISION</b>							
	<b>Total</b> ...	<b>594827</b>	<b>61064</b>	<b>655881</b>	<b>2094215</b>	<b>563689</b>	<b>265790</b>
	<b>Rural</b> ...	<b>564882</b>	<b>40906</b>	<b>605788</b>	<b>1981191</b>	<b>523167</b>	<b>250435</b>
	<b>Urban</b> ...	<b>29945</b>	<b>20148</b>	<b>50093</b>	<b>113024</b>	<b>40522</b>	<b>15354</b>
<b>DISTRICT PUNE</b>							
1	Pune City	4090	186	4276	12246	43415	5566
2	Haveli	18311	9269	27580	295434	137171	43260
3	Khed	16148	216	16364	75642	633	7627
4	Ambegaon	12122	950	13072	47611	4938	5254
5	Junnar	13728	5616	19344	64997	1791	6678
6	Shirur	15354	308	15662	73075	2107	7518
7	Daund	20967	4856	25823	121558	59068	18062
8	Indapur	39621	1420	41041	148124	76652	22477
9	Baramati	35007	450	35457	127927	46892	17481
10	Purandhar	23887	1858	25745	99642	8187	10782
11	Bhor	11652	1594	13246	53420	3354	5677
12	Velhe	12451	88	12539	31393	116	3150
13	Mulshi	10650	239	10889	41628	27888	6951
14	Mawal	12186	2682	14868	50822	690810	74163
	<b>District Total</b> ...	<b>246174</b>	<b>29732</b>	<b>275906</b>	<b>1243519</b>	<b>1103022</b>	<b>234654</b>
	<b>Rural</b> ...	<b>230855</b>	<b>24606</b>	<b>255461</b>	<b>1193463</b>	<b>1047418</b>	<b>224088</b>
	<b>Urban</b> ...	<b>15319</b>	<b>5126</b>	<b>20445</b>	<b>50056</b>	<b>55604</b>	<b>10566</b>
<b>DISTRICT SATARA</b>							
1	Satara	27687	2311	29998	110841	8250	11909
2	Wai	7843	3635	11478	40034	14698	5473
3	Khandala	7681	323	8004	32666	2522	3518
4	Koregaon	13951	282	14233	49853	18168	6802
5	Phaltan	29009	1741	30750	118256	9699	12795
6	Man	18560	140	18700	112582	27579	14016
7	Khatav	19104	979	20083	76663	6754	8341
8	Kurad	46000	997	46997	180675	149492	33016
9	Patan	33386	236	33622	119228	5033	12426
10	Javali	14898	1153	16051	65232	7545	7277
11	Mahabaleshwar	3031	277	3308	11009	535	11544
	<b>District Total</b> ...	<b>221150</b>	<b>12074</b>	<b>233224</b>	<b>917039</b>	<b>250275</b>	<b>1167314</b>
	<b>Rural</b> ...	<b>214783</b>	<b>10931</b>	<b>225714</b>	<b>889521</b>	<b>226802</b>	<b>1116323</b>
	<b>Urban</b> ...	<b>6367</b>	<b>1143</b>	<b>7510</b>	<b>27518</b>	<b>23473</b>	<b>50991</b>

Livestock and Poultry—contd.

Poultry-fowls									
Fowls									
Chicken (Below 5 months)						Total Chicken	Total Poultry-fowls		
Deshi		Improved		Total			Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)	(15)	(16)	(17)	(18)
1401958	326213	284975	870285	1686933	1196498	2883431	4417213	1780003	6197216
1357929	302511	268166	822314	1626095	1124825	2750920	4206513	1654553	5861066
44029	23702	16809	47971	60838	71673	132511	210700	125450	336150
7391	9237	17607	1332	24998	10569	35567	32964	62540	95504
34187	10113	34995	87364	69182	97477	166659	358045	268799	626844
32175	5110	548	13002	32723	18112	50835	129075	14399	143474
18621	820	3203	15495	21824	16315	38139	79174	24586	103760
23209	5340	3022	97046	26231	102386	128617	107274	107475	214749
34868	1531	15613	627	50481	2158	52639	124828	18655	143483
51958	7259	15630	81857	67588	89116	156704	201742	161411	363153
65043	6231	33294	189	98337	6420	104757	259019	111555	370574
53492	2774	9180	252	62672	3026	65698	219200	56774	275974
31565	751	1623	24081	33188	24832	58020	155845	35749	191594
38264	1106	3147	38434	41411	39540	80951	104442	46529	150971
17229	1982	145	21	17374	2003	19377	63055	370	63425
25779	2866	1367	39857	27146	42723	69869	80923	69351	150274
23992	680	10553	358318	34545	358998	393543	87680	1062363	1150043
457773	55800	149927	757875	607700	813675	1421375	2003266	2040556	4043822
429835	41962	109199	417174	539034	459136	998170	1896115	1598397	3494512
27938	13838	40728	340701	68666	354539	423205	107151	442159	549310
24043	1702	2941	2056	26984	3758	30742	164273	15558	179831
20986	1616	9025	11423	30011	13039	43050	70479	38781	109260
13187	940	1599	810	14786	1750	16536	54474	5254	59728
27241	1929	1339	97	28580	2026	30606	92974	19886	112860
37275	2556	4785	30	42060	2586	44646	187096	16255	203351
33960	747	7834	0	41794	747	42541	165849	35553	201402
29196	603	13395	2674	42591	3277	45868	125566	23802	149368
61732	1798	20611	332	82343	2130	84473	290205	171432	461637
64453	2643	1144	209	65597	2852	68449	219710	6622	226332
31867	2347	2134	928	34001	3275	37276	114344	11760	126104
5687	1619	126	608	5813	2227	8040	21346	1546	22892
349627	18500	64933	19167	414560	37667	452227	1506316	346449	1852765
342950	17419	59074	18206	402024	35625	437649	1464673	315013	1779686
6677	1081	5859	981	12536	2042	14578	41643	31436	73079

		Poultry-fowls					
		Fowls					
Sr. No.	Name of the District/ Tahsil/ Block	Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>DISTRICT SANGLI</b>							
1	Miraj	11815	2616	14431	48408	190863	239271
2	Tasgaon	18500	1869	20369	81342	106812	188154
3	Khanapur (Vita)	22669	1181	23850	151860	363716	515576
4	Atpadi	20228	121	20349	81399	32015	113414
5	Jath	28012	961	28973	82198	1196	83394
6	Kavthe Mahankal	15280	1812	17092	56285	3929	60214
7	Walva (Islampur)	21676	963	22639	90580	47250	137830
8	Shirala	18032	178	18210	68516	1118	69634
<b>District Total</b>		<b>156212</b>	<b>9701</b>	<b>165913</b>	<b>660588</b>	<b>746899</b>	<b>1407487</b>
<b>Rural</b>		<b>151119</b>	<b>7109</b>	<b>158228</b>	<b>583072</b>	<b>552845</b>	<b>1135917</b>
<b>Urban</b>		<b>5093</b>	<b>2592</b>	<b>7685</b>	<b>77516</b>	<b>194054</b>	<b>271570</b>
<b>DISTRICT SOLAPUR</b>							
1	North Solapur	5211	134	5345	16437	321	16758
2	Barshi	7466	143	7609	48183	1890	50073
3	Akkalkot	9783	166	9949	23013	163	23176
4	South Solapur	6106	907	7013	20871	37041	57912
5	Mohol	12531	542	13073	60300	965	61265
6	Mangalvedha	16897	277	17174	72704	1922	74626
7	Pandharpur	21227	176	21403	97802	1322	99124
8	Sangola	32101	708	32809	164930	1860	166790
9	Malsiras	34428	8347	42775	173031	448667	621698
10	Karamala	16679	245	16924	58651	1594	60245
11	Madha	14363	1055	15418	58964	2778	61742
<b>District Total</b>		<b>176792</b>	<b>12700</b>	<b>189492</b>	<b>794886</b>	<b>498523</b>	<b>1293409</b>
<b>Rural</b>		<b>172213</b>	<b>12496</b>	<b>184709</b>	<b>781310</b>	<b>497676</b>	<b>1278986</b>
<b>Urban</b>		<b>4579</b>	<b>204</b>	<b>4783</b>	<b>13576</b>	<b>847</b>	<b>14423</b>
<b>DISTRICT KOLHAPUR</b>							
1	Karveer	22539	163	22702	76502	3827	80329
2	Panhala	16592	992	17584	54488	68049	122537
3	Hatkanangale	16419	656	17075	48629	177883	226512
4	Shirol	6535	682	7217	26445	5089	31534
5	Kagal	6578	272	6850	23872	19806	43678
6	Gadhinglaj	9440	408	9848	30668	2862	33530
7	Chandgad	8733	302	9035	34344	1810	36154
8	Ajara	5418	82	5500	20522	665	21187
9	Bhudargad	7469	0	7469	27359	998	28357
10	Radhanagari	10787	120	10907	32094	2033	34127
11	Gaganbavada	2219	121	2340	9792	72	9864
12	Shahuwadi	18391	31	18422	48373	2677	51050
<b>District Total</b>		<b>131120</b>	<b>3829</b>	<b>134949</b>	<b>433088</b>	<b>285771</b>	<b>718859</b>
<b>Rural</b>		<b>125374</b>	<b>3765</b>	<b>129139</b>	<b>409636</b>	<b>278148</b>	<b>687784</b>
<b>Urban</b>		<b>5746</b>	<b>64</b>	<b>5810</b>	<b>23452</b>	<b>7623</b>	<b>31075</b>

## Poultry-fowls

## Fowls

## Chicken (Below 5 months)

## Total Poultry-fowls

Deshi		Improved		Total		Total Chicken	Total Poultry-fowls		
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)		(15)	Deshi (16)	Improved (17)
18105	1670	27877	5978	45982	7648	53630	79998	227334	307332
34459	773	7606	1813	42065	2586	44651	135074	118100	253174
45229	924	195971	9254	241200	10178	251378	220682	570122	790804
41399	17	1171	0	42570	17	42587	143043	33307	176350
37087	6788	3367	1504	40454	8292	48746	154085	7028	161113
23806	3853	3887	13487	27693	17340	45033	99224	23115	122339
46012	4122	29134	1168	75146	5290	80436	162390	78515	240905
39170	252	34	0	39204	252	39456	125970	1330	127300
285267	18399	269047	33204	554314	51603	605917	1120466	1058851	2179317
266690	16077	206536	31172	473226	47249	520475	1016958	797662	1814620
18577	2322	62511	2032	81088	4354	85442	103508	261189	364697
7432	62	454	2	7886	64	7950	29142	911	30053
21866	714	2446	29	24312	743	25055	78229	4508	82737
8424	668	22	90	8756	758	9514	41888	751	42639
8462	65	374	2800	8776	2865	11641	35504	41062	76566
13720	1702	321	2151	14041	3853	17894	88253	3979	92232
46707	1424	1443	178	48150	1602	49752	137732	3820	141552
29364	6	300	2	29664	8	29672	148399	1800	150199
59559	702	1811	245	61370	947	62317	257292	4624	261916
71568	7793	265246	6460	336814	14253	351067	286820	728720	1015540
35374	406	435	219	35809	625	36434	111110	2493	113603
19876	1513	1262	89	21138	1602	22740	94716	5184	99900
322352	15055	274364	12265	596716	27320	624036	1309085	797852	2106937
315333	14766	273662	12233	588995	26999	615994	1283622	796067	2079689
7019	289	702	32	7721	321	8042	25463	1785	27248
54366	2676	6013	10430	60379	13106	73485	156083	20433	176516
36841	3527	32593	1561	69434	5088	74522	111448	103195	214643
30861	1588	100118	13436	130979	15024	146003	97497	292093	389590
12488	708	4665	1563	17153	2271	19424	46176	11999	58175
10519	1080	2046	3055	12565	4135	16700	42049	25179	67228
23842	793	1320	1066	25162	1859	27021	64743	5656	70399
27199	1821	384	2114	27583	3935	31518	72097	4610	76707
10674	1580	127	9	10801	1589	12390	38194	883	39077
25078	0	0	0	25078	0	25078	59906	998	60904
27138	11945	1572	98	28710	12043	40753	81964	3823	85787
5468	15	99	29	5567	44	5611	17494	321	17815
55680	643	61	100	55741	743	56484	123087	2869	125956
320154	26376	148998	33461	469152	59837	528989	910738	472059	1382797
305115	24489	134969	23433	440084	47922	488006	864614	440315	1304929
15039	1887	14029	10028	29068	11915	40983	46124	31744	77868

		Poultry-fowls					
		Fowls					
Sr. No.	Name of the District/ Tahsil/ Block	Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>PUNE DIVISION</b>							
	Total ...	931448	68036	999484	4049120	2884490	6933
	Rural ...	894344	58907	953251	3857002	2602889	6455
	Urban ...	37104	9129	46233	192118	281601	478
<b>DISTRICT AURANGABAD</b>							
1	Aurangabad ...	13103	862	13965	39970	5141	45
2	Khultabad ...	2741	128	2869	10696	354	11
3	Kannad ...	6619	292	6911	27031	659	21
4	Soygaon ...	3848	29	3877	12483	87	12
5	Sillod ...	12031	446	12477	35599	783	36
6	Paithan ...	8914	193	9107	26186	549	26
7	Gangapur ...	5990	1371	7361	17577	31224	45
8	Vaijapur ...	4326	333	4659	15606	711	16
	District Total ...	57572	3654	61226	185148	39508	224
	Rural ...	52831	2789	55620	172839	34381	207
	Urban ...	4741	865	5606	12309	5127	17
<b>DISTRICT JALNA</b>							
1	Jalna ...	8782	180	8962	30308	70	30
2	Bhokardan ...	11422	408	11830	32310	1364	33
3	Jafrabad ...	3919	259	4178	18079	905	18
4	Partur ...	11407	654	12061	27458	696	28
5	Ambad ...	13118	196	13314	29343	468	29
	District Total ...	48648	1697	50345	137498	3503	141
	Rural ...	46460	1444	47904	131704	3313	136
	Urban ...	2188	253	2441	5794	190	5
<b>DISTRICT PARABHANI</b>							
1	Parbhani ...	8281	4079	12360	12627	19409	32
2	Jintur ...	6878	307	7185	23174	534	23
3	Hingoli ...	6707	126	6833	22873	191	23
4	Kalamnuri ...	7649	161	7810	23112	333	23
5	Basmath ...	6409	532	6941	18800	2965	21
6	Gangakhed ...	9453	61	9514	27156	148	27
7	Pathri ...	9030	218	9248	18339	634	18
	District Total ...	54407	5484	59891	146081	24214	170
	Rural ...	47645	1848	49493	134236	20187	154
	Urban ...	6762	3636	10398	11845	4027	15



Poultry-fowls

Fowls									
Chicken (Below 5 months)						Total Chicken	Total Poultry-fowls		
Deshi		Improved		Total			Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)	(15)	(16)	(17)	(18)
1735173	134130	907269	855972	2642442	990102	3632544	6849871	4715767	11565638
1659923	114713	783440	502218	2443363	616931	3060294	6525982	3947454	10473436
75250	19417	123829	353754	199079	373171	572250	323889	768313	1092202
28094	4048	2303	17031	30397	21079	51476	85215	25337	110552
7607	341	283	12132	7890	12473	20363	21385	12897	34282
21656	2981	118	6691	21774	9672	31446	58287	7760	66047
8535	561	44	0	8579	561	9140	25427	160	25587
26922	1616	169	159	27091	1775	28866	76168	1557	77725
14027	3261	765	1377	14792	4638	19430	52388	2884	55272
7475	2189	12815	7851	20290	10040	30330	33231	53261	86492
15628	2875	633	451	16261	3326	19587	38435	2128	40563
129944	17872	17130	45692	147074	63564	210638	390536	105984	496520
123694	15418	14951	28046	138645	43464	182109	364782	80167	444949
6250	2454	2179	17646	8429	20100	28529	25754	25817	51571
19995	5825	125	23	20120	5848	25968	64910	398	65308
25065	1216	359	0	25424	1216	26640	70013	2131	72144
13001	264	490	0	13491	264	13755	35263	1654	36917
30026	10297	643	228	30669	10525	41194	79188	2221	81409
13349	6495	178	393	13527	6888	20415	62305	1235	63540
101436	24097	1795	644	103231	24741	127972	311679	7639	319318
94945	24097	1795	644	96740	24741	121481	297206	7196	304402
6491	0	0	0	6491	0	6491	14473	443	14916
9951	4727	11148	330	21099	5057	26156	35586	34966	70552
14621	4176	288	161	14909	4337	19246	48849	1290	50139
17575	8965	208	0	17783	8965	26748	56120	525	56645
16679	5275	971	170	17650	5445	23095	52715	1635	54350
20014	5036	980	123	20994	5159	26153	50259	4600	54859
13779	6125	135	103	13914	6228	20142	56513	447	56960
9471	4477	203	456	9674	4933	14607	41317	1511	42828
102090	38781	13933	1343	116023	40124	156147	341359	44974	386333
95951	36620	12754	1014	108705	37634	146339	314452	35803	350255
6139	2161	1179	329	7318	2490	9808	26907	9171	36078

Sr. No.	Name of the District/ Tahsil/ Block	Poultry-fowls					
		Fowls					
		Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>DISTRICT BEED</b>							
1	Beed	13053	1316	14369	45606	25326	70932
2	Gavarai	7444	316	7760	18792	461	19253
3	Majalgaon	8129	1580	9709	22203	1768	23971
4	Ambejogai	9864	1122	10986	27934	3223	31157
5	Keij	20643	888	21531	45368	2203	47571
6	Patoda	11951	1200	13151	34257	1785	36042
7	Ashti	17142	573	17715	64879	1445	66324
	<b>District Total</b>	<b>88226</b>	<b>6995</b>	<b>95221</b>	<b>259039</b>	<b>36211</b>	<b>295250</b>
	<b>Rural</b>	<b>83605</b>	<b>6467</b>	<b>90072</b>	<b>240278</b>	<b>34304</b>	<b>274582</b>
	<b>Urban</b>	<b>4621</b>	<b>528</b>	<b>5149</b>	<b>18761</b>	<b>1907</b>	<b>20668</b>
<b>DISTRICT NANDED</b>							
1	Nanded	7145	695	7840	16806	4092	20898
2	Hadgaon	6823	346	7169	17367	400	17767
3	Kinwat	11346	96	11442	33756	3314	37070
4	Bhokar	5753	138	5891	11120	189	11309
5	Biloli	11530	1428	12958	21648	1356	23004
6	Dagloor	7264	125	7389	16431	9164	25595
7	Mukhed	4724	58	4782	13722	149	13871
8	Kandhar	11015	729	11744	21075	452	21527
	<b>District Total</b>	<b>65600</b>	<b>3615</b>	<b>69215</b>	<b>151925</b>	<b>19116</b>	<b>171041</b>
	<b>Rural</b>	<b>60461</b>	<b>2856</b>	<b>63317</b>	<b>138583</b>	<b>15122</b>	<b>153705</b>
	<b>Urban</b>	<b>5139</b>	<b>759</b>	<b>5898</b>	<b>13342</b>	<b>3994</b>	<b>17336</b>
<b>DISTRICT OSMANABAD</b>							
1	Osmanabad	7354	1861	9215	24853	5724	30577
2	Kalamb	5653	257	5910	15938	435	16373
3	Umaraga	8037	3567	11604	20512	4207	24719
4	Tuljapur	8654	57	8711	22269	164	22433
5	Paranda	4632	1397	6029	40401	4410	44811
6	Bhum	8097	345	8442	26777	411	27188
	<b>District Total</b>	<b>42427</b>	<b>7484</b>	<b>49911</b>	<b>150750</b>	<b>15351</b>	<b>166101</b>
	<b>Rural</b>	<b>39292</b>	<b>2179</b>	<b>41471</b>	<b>141366</b>	<b>6727</b>	<b>148093</b>
	<b>Urban</b>	<b>3135</b>	<b>5305</b>	<b>8440</b>	<b>9384</b>	<b>8624</b>	<b>18008</b>
<b>DISTRICT LATUR</b>							
1	Latur	5856	381	6237	16296	2528	18824
2	Ahmedpur	7292	107	7399	17690	182	17872
3	Udgir	9281	379	9660	32423	573	32996
4	Nilanga	5001	169	5170	15483	389	15872
5	Ausa	6489	896	7385	17278	647	17925
	<b>District Total</b>	<b>33919</b>	<b>1932</b>	<b>35851</b>	<b>99170</b>	<b>4319</b>	<b>103489</b>
	<b>Rural</b>	<b>31708</b>	<b>1642</b>	<b>33350</b>	<b>93461</b>	<b>3530</b>	<b>96991</b>

Poultry-fowls									
Fowls									
Chicken (Below 5 months)						Total Chicken	Total Poultry-fowls		
Deshi		Improved		Total			Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)		(15)	(16)	(17)
22851	5785	9797	2185	32648	7970	40618	87295	38624	125919
15395	4875	1619	391	17014	5266	22280	46506	2787	49293
13906	6174	847	1475	14753	7649	22402	50412	5670	56082
20006	1714	6438	6644	26444	8358	34802	59518	17427	76945
18705	6130	1585	448	20290	6578	26868	90846	5124	95970
23558	5355	1008	576	24566	5931	30497	75121	4569	79690
28280	2341	3274	528	31554	2869	34423	112642	5820	118462
<b>142701</b>	<b>32374</b>	<b>24568</b>	<b>12247</b>	<b>167269</b>	<b>44621</b>	<b>211890</b>	<b>522340</b>	<b>80021</b>	<b>602361</b>
<b>135577</b>	<b>31906</b>	<b>23123</b>	<b>10976</b>	<b>158700</b>	<b>42882</b>	<b>201582</b>	<b>491366</b>	<b>74870</b>	<b>566236</b>
<b>7124</b>	<b>468</b>	<b>1445</b>	<b>1271</b>	<b>8569</b>	<b>1739</b>	<b>10308</b>	<b>30974</b>	<b>5151</b>	<b>36125</b>
10912	6421	379	758	11291	7179	18470	41284	5924	47208
13960	2167	309	1036	14269	3203	17472	40317	2091	42408
18180	9000	38	59	18218	9059	27277	72282	3507	75789
8074	5791	163	178	8237	5969	14206	30738	668	31406
25537	13565	1460	1818	26997	15383	42380	72280	6062	78342
9896	1420	9174	224	19070	1644	20714	35011	18687	53698
15055	3371	206	103	15261	3474	18735	36872	516	37388
16229	10072	565	546	16794	10618	27412	58391	2292	60683
<b>117843</b>	<b>51807</b>	<b>12294</b>	<b>4722</b>	<b>130137</b>	<b>56529</b>	<b>186666</b>	<b>387175</b>	<b>39747</b>	<b>426922</b>
<b>111024</b>	<b>48657</b>	<b>11764</b>	<b>3904</b>	<b>122788</b>	<b>52561</b>	<b>175349</b>	<b>358725</b>	<b>33646</b>	<b>392371</b>
<b>6819</b>	<b>3150</b>	<b>530</b>	<b>818</b>	<b>7349</b>	<b>3968</b>	<b>11317</b>	<b>28450</b>	<b>6101</b>	<b>34551</b>
14799	717	1575	17	16374	734	17108	47723	9177	56900
8335	1725	190	2521	8525	4246	12771	31651	3403	35054
16383	3535	2866	373	19249	3908	23157	48467	11013	59480
4469	1113	599	89	5068	1202	6270	36505	909	37414
7705	6015	1593	1112	9298	7127	16425	58753	8512	67265
10506	1258	339	59	10845	1317	12162	46638	1154	47792
<b>62197</b>	<b>14363</b>	<b>7162</b>	<b>4171</b>	<b>69359</b>	<b>18534</b>	<b>87893</b>	<b>269737</b>	<b>34168</b>	<b>303905</b>
<b>56158</b>	<b>13146</b>	<b>3571</b>	<b>3549</b>	<b>59729</b>	<b>16695</b>	<b>76424</b>	<b>249962</b>	<b>16026</b>	<b>265988</b>
<b>6039</b>	<b>1217</b>	<b>3591</b>	<b>622</b>	<b>9630</b>	<b>1839</b>	<b>11469</b>	<b>19775</b>	<b>18142</b>	<b>37917</b>
12476	124	709	6913	13185	7037	20222	34752	10531	45283
15153	2948	209	2413	15362	5361	20723	43083	2911	45994
18024	2533	220	1090	18244	3623	21867	62261	2262	64523
10918	1657	96	73	11014	1730	12744	33059	727	33786
8253	1616	523	497	8776	2113	10889	33636	2563	36199
<b>64824</b>	<b>8878</b>	<b>1757</b>	<b>10986</b>	<b>66581</b>	<b>19864</b>	<b>86445</b>	<b>206791</b>	<b>18994</b>	<b>225785</b>
<b>62993</b>	<b>8514</b>	<b>1436</b>	<b>10174</b>	<b>64429</b>	<b>18688</b>	<b>83117</b>	<b>196676</b>	<b>16782</b>	<b>213458</b>
<b>1831</b>	<b>364</b>	<b>321</b>	<b>812</b>	<b>2152</b>	<b>1176</b>	<b>3328</b>	<b>10115</b>	<b>2212</b>	<b>12327</b>

Sr. No.	Name of the District/ Tahsil/ Block	Poultry-fowls					
		Fowls					
		Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>AURANGABAD DIVISION</b>							
	Total ...	390799	30861	421660	1129611	142222	12718
	Rural ...	362002	19225	381227	1052467	117564	11700
	Urban ...	28797	11636	40433	77144	24658	1018
<b>DISTRICT BULDHANA</b>							
1	Buldhana ...	1887	185	2072	6704	663	73
2	Motala ...	2357	20	2377	9542	71	96
3	Malkapur ...	1361	151	1512	5987	248	62
4	Nandura ...	1813	504	2317	6933	307	72
5	Jalgaon Jamod ...	2561	126	2687	13024	269	132
6	Sangrapur ...	1806	233	2039	3543	365	39
7	Shegaon ...	1342	304	1646	5103	634	57
8	Khamgaon ...	2989	163	3152	13077	386	134
9	Chikhali ...	2428	452	2880	7149	505	76
10	Mehkar ...	12360	713	13073	11421	2127	135
11	Lonar ...	2915	51	2966	13109	394	135
12	Sindkhed Raja ...	3246	108	3354	9573	94	96
13	Deulgaon Raja ...	4592	550	5142	14436	786	152
	District Total ...	41657	3560	45217	119601	6849	1264
	Rural ...	38051	2757	40808	109870	5393	1152
	Urban ...	3606	803	4409	9731	1456	111
<b>DISTRICT AKOLA</b>							
1	Akola ...	4276	317	4593	22610	2400	250
2	Akot ...	4497	223	4630	11303	803	121
3	Murtizapur ...	1802	69	1871	7769	269	80
4	Barshi Takli ...	3391	241	3632	8944	444	93
5	Karanja ...	4240	335	4575	14529	978	155
6	Manora ...	3425	27	3452	13083	70	131
7	Mangrulpir ...	6344	162	6506	17715	207	179
8	Washim ...	2362	39	2401	13064	122	131
9	Risod ...	2513	91	2604	11005	482	114
10	Malegaon ...	3158	277	3435	7637	425	80
11	Patur ...	3405	10	3415	8353	13	83
12	Balapur ...	2922	639	3561	11157	1201	123
13	Telhara ...	212	24	236	702	19	7
	District Total ...	42457	2454	44911	147871	7433	1553
	Rural ...	38473	1957	40430	131078	4823	1359
	Urban ...	3984	497	4481	16793	2610	194

## Poultry-fowls

## Fowls

## Chicken (Below 5 months)

## Total Poultry-fowls

Deshi		Improved		Total		Total Chicken	Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)	(15)	(16)	(17)	(18)
721035	188172	78639	79805	799674	267977	1067651	2429617	331527	2761144
680342	178358	69394	58307	749736	236665	986401	2273169	264490	2537659
40693	9814	9245	21498	49938	31312	81250	156448	67037	223485
4852	161	467	470	5319	631	5950	13604	1785	15389
11423	0	201	0	11624	0	11624	23322	292	23614
8379	44	184	0	8563	44	8607	15771	583	16354
7902	759	214	15	8116	774	8890	17407	1040	18447
4075	0	0	0	4075	0	4075	19660	395	20055
2164	477	618	260	2782	737	3519	7990	1476	9466
5934	136	385	83	6319	219	6538	12515	1406	13921
7726	548	217	30	7943	578	8521	24340	796	25136
4132	1893	213	1352	4345	3245	7590	15602	2522	18124
6911	478	1813	1572	8724	2050	10774	31170	6225	37395
12002	735	0	258	12002	993	12995	28761	703	29464
13891	1685	351	164	14242	1849	16091	28395	717	29112
9874	803	1042	26	10916	829	11745	29705	2404	32109
99265	7719	5705	4230	104970	11949	116919	268242	20344	288586
91425	6552	4664	2994	96089	9546	105635	245898	15808	261706
7840	1167	1041	1236	8881	2403	11284	22344	4536	26880
15589	1185	412	0	16001	1185	17186	43660	3129	46789
5646	1600	849	652	6495	2252	8747	22956	2527	25483
5799	146	165	161	5964	307	6271	15515	664	16180
5790	1347	869	444	6659	1791	8450	19472	1998	21470
9228	3800	536	415	9764	4215	13979	31797	2264	34061
22698	0	62	700	22760	700	23460	39206	859	40065
14398	6848	130	125	14528	6973	21501	45305	624	45929
12137	1178	255	94	12392	1272	13664	28741	510	29251
14097	443	1029	1184	15126	1627	16753	28058	2786	30844
9981	0	499	0	10480	0	10480	20776	1201	21977
7835	115	0	6	7835	121	7956	19708	29	19737
8021	411	458	1982	8479	2393	10872	22511	4280	26791
686	137	7	9	693	146	839	1737	59	1796
131905	17210	5271	5772	137176	22982	160158	339443	20930	360373
123182	14626	4229	4188	127411	18814	146225	307359	15197	322556
8723	2584	1042	1584	9765	4168	13933	32084	5733	37817

Sr. No.	Name of the District/ Tahsil/ Block	Poultry-fowls					
		Fowls					
		Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>AURANGABAD DIVISION</b>							
	Total ...	390799	30861	421660	1129611	142222	12718
	Rural ...	362002	19225	381227	1052467	117564	11700
	Urban ...	28797	11636	40433	77144	24658	1018
<b>DISTRICT BULDHANA</b>							
1	Buldhana ...	1887	185	2072	6704	663	73
2	Motala ...	2357	20	2377	9542	71	96
3	Malkapur ...	1361	151	1512	5987	248	62
4	Nandura ...	1813	504	2317	6933	307	72
5	Jalgaon Jamod ...	2561	126	2687	13024	269	132
6	Sangrampur ...	1806	233	2039	3543	365	39
7	Shegaon ...	1342	304	1646	5103	634	57
8	Khamgaon ...	2989	163	3152	13077	386	134
9	Chikhali ...	2428	452	2880	7149	505	76
10	Mehkar ...	12360	713	13073	11421	2127	135
11	Lonar ...	2915	51	2966	13109	394	135
12	Sindkhed Raja ...	3246	108	3354	9573	94	96
13	Deulgaon Raja ...	4592	550	5142	14436	786	152
	District Total ...	41657	3560	45217	119601	6849	1264
	Rural ...	38051	2757	40808	109870	5393	1152
	Urban ...	3606	803	4409	9731	1456	111
<b>DISTRICT AKOLA</b>							
1	Akola ...	4276	317	4593	22610	2400	250
2	Akot ...	4497	223	4630	11303	803	121
3	Murtizapur ...	1802	69	1871	7769	269	80
4	Barshi Takli ...	3391	241	3632	8944	444	93
5	Karanja ...	4240	335	4575	14529	978	155
6	Manora ...	3425	27	3452	13083	70	131
7	Mangrulpir ...	6344	162	6506	17715	207	179
8	Washim ...	2362	39	2401	13064	122	131
9	Risod ...	2513	91	2604	11005	482	114
10	Malegaon ...	3158	277	3435	7637	425	80
11	Patur ...	3405	10	3415	8353	13	83
12	Balapur ...	2922	639	3561	11157	1201	123
13	Telhara ...	212	24	236	702	19	7
	District Total ...	42457	2454	44911	147871	7433	1553
	Rural ...	38473	1957	40430	131078	4823	1359
	Urban ...	3984	497	4481	16793	2610	194

Poultry-fowls									
Fowls									
Chicken (Below 5 months)						Total Chicken	Total Poultry-fowls		
Deshi		Improved		Total			Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)	(15)	(16)	(17)	(18)
721035	188172	78639	79805	799674	267977	1067651	2429617	331527	2761144
680342	178358	69394	58307	749736	236665	986401	2273169	264490	2537659
40693	9814	9245	21498	49938	31312	81250	156448	67037	223485
4852	161	467	470	5319	631	5950	13604	1785	15389
11423	0	201	0	11624	0	11624	23322	292	23614
8379	44	184	0	8563	44	8607	15771	583	16354
7902	759	214	15	8116	774	8890	17407	1040	18447
4075	0	0	0	4075	0	4075	19660	395	20055
2164	477	618	260	2782	737	3519	7990	1476	9466
5934	136	385	83	6319	219	6538	12515	1406	13921
7726	548	217	30	7943	578	8521	24340	796	25136
4132	1893	213	1352	4345	3245	7590	15602	2522	18124
6911	478	1813	1572	8724	2050	10774	31170	6225	37395
12002	735	0	258	12002	993	12995	28761	703	29464
13891	1685	351	164	14242	1849	16091	28395	717	29112
9874	803	1042	26	10916	829	11745	29705	2404	32109
99265	7719	5705	4230	104970	11949	116919	268242	20344	288586
91425	6552	4664	2994	96089	9546	105635	245898	15808	261706
7840	1167	1041	1236	8881	2403	11284	22344	4536	26880
15589	1185	412	0	16001	1185	17186	43660	3129	46789
5646	1600	849	652	6495	2252	8747	22956	2527	25483
5799	146	165	161	5964	307	6271	15515	664	16180
5790	1347	869	444	6659	1791	8450	19472	1998	21470
9228	3800	536	415	9764	4215	13979	31797	2264	34061
22698	0	62	700	22760	700	23460	39206	859	40065
14398	6848	130	125	14528	6973	21501	45305	624	45929
12137	1178	255	94	12392	1272	13664	28741	510	29251
14097	443	1029	1184	15126	1627	16753	28058	2786	30844
9981	0	499	0	10480	0	10480	20776	1201	21977
7835	115	0	6	7835	121	7956	19708	29	19737
8021	411	458	1982	8479	2393	10872	22511	4280	26791
686	137	7	9	693	146	839	1737	59	1796
131905	17210	5271	5772	137176	22982	160158	339443	20930	360373
123182	14626	4229	4188	127411	18814	146225	307359	15197	322556
8723	2584	1042	1584	9765	4168	13933	32084	5733	37817

Sr. No.	Name of the District/ Tahsil/ Block	Poultry-fowls				
		Fowls				
		Cocks			Hens	
		Deshi	Improved	Total	Deshi	Improved
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>DISTRICT AMARAVATI</b>						
1	Amaravati	4928	515	5443	10716	3462
2	Morshi	2843	149	2992	6820	282
3	Varud	2826	86	2912	9975	556
4	Tiwasa	1637	114	1751	6450	396
5	Chandur Railway	3717	232	3949	13264	2528
6	Nandgaon (K)	5139	50	5189	12978	230
7	Bhatkuli	2082	519	2601	5602	559
8	Daryapur	1416	166	1582	1927	253
9	Anjangaon	1427	387	1814	4062	526
10	Dharni	5120	0	5120	15577	0
11	Chikhaldara	4875	35	4910	16071	83
12	Achalpur	1376	117	1493	5040	3053
13	Chandur Bazar	3285	219	3504	11156	2729
	<b>District Total</b>	<b>40671</b>	<b>2589</b>	<b>43260</b>	<b>119638</b>	<b>14657</b>
	<b>Rural</b>	<b>38059</b>	<b>2306</b>	<b>40365</b>	<b>113571</b>	<b>13152</b>
	<b>Urban</b>	<b>2612</b>	<b>283</b>	<b>2895</b>	<b>6067</b>	<b>1505</b>
<b>DISTRICT YAVATMAL</b>						
1	Yavatmal	4711	147	4858	19594	990
2	Babhulgaon	3219	20	3239	12245	123
3	Kalamb	3767	8	3775	11705	138
4	Ralegaon	4027	273	4300	11786	635
5	Maregaon	6084	22	6106	20927	112
6	Vani	7569	56	7625	25254	351
7	Pandharkavda(K)	4843	110	4953	15702	255
8	Ghatanji	5546	34	5580	20424	172
9	Umarkhed	4140	150	4290	13928	15
10	Mahagaon	3663	68	3731	15069	196
11	Pusad	6869	313	7182	24635	877
12	Digras	5598	1079	6677	22639	2421
13	Darwaha	6259	136	6395	17207	463
14	Ner	3666	6	3672	11190	43
	<b>District Total</b>	<b>69961</b>	<b>2422</b>	<b>72383</b>	<b>242305</b>	<b>6791</b>
	<b>Rural</b>	<b>66664</b>	<b>1942</b>	<b>68606</b>	<b>231923</b>	<b>6285</b>
	<b>Urban</b>	<b>3297</b>	<b>480</b>	<b>3777</b>	<b>10382</b>	<b>506</b>
<b>AMARAVATI DIVISION</b>						
	<b>Total</b>	<b>194746</b>	<b>11025</b>	<b>205771</b>	<b>629415</b>	<b>35730</b>
	<b>Rural</b>	<b>181247</b>	<b>8962</b>	<b>190209</b>	<b>586442</b>	<b>29653</b>
	<b>Urban</b>	<b>13499</b>	<b>2063</b>	<b>15562</b>	<b>42973</b>	<b>6077</b>



Restock and Poultry—contd.

Poultry-fowls									
Fowls									
Chicken (Below 5 months)						Total Chicken	Total Poultry-fowls		
Deshi		Improved		Total			Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)	(15)	(16)	(17)	(18)
6125	1640	833	2535	6958	4175	11133	23409	7345	30754
6836	201	1359	78	8195	279	8474	16700	1868	18568
11019	40	298	990	11317	1030	12347	23860	1930	25790
4836	417	123	77	4959	494	5453	13340	710	14050
7528	1492	195	3045	7723	4537	12260	26001	6000	32001
11105	0	300	600	11405	600	12005	29222	1180	30402
3115	594	1009	329	4124	923	5047	11393	2416	13809
3807	303	218	53	4025	356	4381	7453	690	8143
4337	984	487	202	4824	1186	6010	10810	1602	12412
21861	159	0	0	21861	159	22020	42717	0	42717
14195	2374	205	91	14400	2465	16865	37515	414	37929
2920	44	561	581	3481	625	4106	9390	4312	13692
8354	671	386	311	8740	982	9722	23466	3645	27111
106038	8919	5974	8892	112012	17811	129823	275266	32112	307378
102446	7500	5084	6886	107530	14386	121916	261576	27478	289004
3592	1419	890	2006	4482	3425	7907	13690	4694	18374
18319	1695	151	10	18470	1705	20175	44319	1238	45617
9454	0	30	750	9484	750	10234	24918	923	25841
20359	1333	414	430	20773	1763	22536	37164	990	38154
8397	6238	514	370	8911	6608	15519	30448	1792	32240
28631	15636	221	17	28852	15653	44505	71278	372	71650
23792	21419	387	800	24179	22219	46398	78034	1594	79628
22185	4967	512	21	22697	4988	27685	47697	898	48595
14822	9410	51	5	14873	9415	24288	50202	262	50464
17063	2867	241	573	17304	3440	20744	37998	979	38977
18437	2761	0	100	18437	2861	21298	39930	300	40294
25976	1016	1953	150	27929	1166	29095	58496	3293	61789
18394	5500	1170	157	19564	5657	25221	52131	4827	56958
17015	4666	372	19	17387	4685	22072	45147	990	46137
5985	246	28	2000	6013	2246	8259	21087	2077	23164
248829	77754	6044	5402	254873	83156	338029	638849	20659	659508
242771	74189	5500	4641	248271	78830	327101	615547	18368	633915
6058	3565	544	761	6602	4326	10928	23302	2291	25593
586037	111602	22994	24296	609031	135898	744929	1521800	94045	1615845
559824	102867	19477	18709	579301	121576	700877	1430380	76801	1507181
26213	8735	3517	5587	29730	14322	44052	91420	17244	108664

Sr. No.	Name of the District/ Taluk/ Block	Poultry-flocks				
		Flocks				
		Cocks			Hens	
		Destit	Improved	Total	Destit	Improved
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>DISTRICT AMARAVATI</b>						
1	Amaravati	4828	515	5443	11716	3472
2	Marsia	2443	149	2592	6229	2072
3	Vareal	2225	86	2312	9975	556
4	Towana	1637	124	1751	6450	396
5	Chander Railway	3717	232	3949	13264	2526
6	Nandipani (S)	5129	59	5188	12276	234
7	Bhatkuli	2472	519	2991	5412	579
8	Daryapur	1406	166	1572	1327	253
9	Annapurna	1427	347	1774	4162	524
10	Dhams	5129	0	5129	15577	0
11	Chitoldara	4875	35	4910	17471	49
12	Ashtapur	1376	117	1493	5140	3153
13	Chander Bazar	3215	219	3434	11156	2724
<b>District Total</b>		<b>41671</b>	<b>2589</b>	<b>43260</b>	<b>119626</b>	<b>14657</b>
<b>Rural</b>		<b>38659</b>	<b>2316</b>	<b>40975</b>	<b>113571</b>	<b>13152</b>
<b>Urban</b>		<b>3012</b>	<b>273</b>	<b>3285</b>	<b>6055</b>	<b>1505</b>
<b>DISTRICT YAVATMAL</b>						
1	Yavatmal	4711	147	4858	12624	916
2	Balharajpur	3219	29	3248	12245	123
3	Kalamb	3747	8	3755	11715	138
4	Balegaon	4127	273	4400	11726	635
5	Maregaon	6184	22	6206	21927	112
6	Vani	7549	56	7605	25254	351
7	Pandharpur (S)	4143	110	4253	15712	255
8	Ghatapuri	5646	34	5680	21424	172
9	Umalkhed	4149	150	4299	13423	15
10	Mahagaon	3643	64	3707	15649	146
11	Pasad	6619	313	7132	24625	477
12	Bhuras	5646	1179	6825	23526	2621
13	Darwad	6259	135	6394	17217	443
14	Nar	3646	6	3652	11134	45
<b>District Total</b>		<b>68661</b>	<b>2422</b>	<b>71083</b>	<b>242105</b>	<b>6731</b>
<b>Rural</b>		<b>68651</b>	<b>1942</b>	<b>70593</b>	<b>231223</b>	<b>6285</b>
<b>Urban</b>		<b>1010</b>	<b>480</b>	<b>1490</b>	<b>10882</b>	<b>446</b>
<b>AMARAVATI DIVISION</b>						
<b>Total</b>		<b>150746</b>	<b>11025</b>	<b>161771</b>	<b>622465</b>	<b>15739</b>
<b>Rural</b>		<b>142267</b>	<b>8982</b>	<b>151249</b>	<b>576642</b>	<b>12653</b>
<b>Urban</b>		<b>8479</b>	<b>2043</b>	<b>10522</b>	<b>45823</b>	<b>3086</b>

Livestock and Poultry—contd.

Poultry-fowls									
Fowls									
Chicken (Below 5 months)						Total Poultry-fowls			
Deshi		Improved		Total		Total Chicken	Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)	(15)	(16)	(17)	(18)
6125	1640	833	2535	6958	4175	11133	23409	7345	30754
6836	201	1359	78	8195	279	8474	16700	1868	18568
11019	40	298	990	11317	1030	12347	23860	1930	25790
4836	417	123	77	4959	494	5453	13340	710	14050
7528	1492	195	3045	7723	4537	12260	26001	6000	32001
11105	0	300	600	11405	600	12005	29222	1180	30402
3115	594	1009	329	4124	923	5047	11393	2416	13809
3807	303	218	53	4025	356	4381	7453	690	8143
4337	984	487	202	4824	1186	6010	10810	1602	12412
21861	159	0	0	21861	159	22020	42717	0	42717
14195	2374	205	91	14400	2465	16865	37515	414	37929
2920	44	561	581	3481	625	4106	9380	4312	13692
8354	671	386	311	8740	982	9722	23466	3645	27111
<b>106038</b>	<b>8919</b>	<b>5974</b>	<b>8892</b>	<b>112012</b>	<b>17811</b>	<b>129823</b>	<b>275266</b>	<b>32112</b>	<b>307378</b>
<b>102446</b>	<b>7500</b>	<b>5084</b>	<b>6886</b>	<b>107530</b>	<b>14386</b>	<b>121916</b>	<b>261576</b>	<b>27478</b>	<b>289004</b>
<b>3592</b>	<b>1419</b>	<b>890</b>	<b>2006</b>	<b>4482</b>	<b>3425</b>	<b>7907</b>	<b>13690</b>	<b>4684</b>	<b>18374</b>
18319	1695	151	10	18470	1705	20175	44319	1238	45617
9454	0	30	750	9484	750	10234	24918	923	25841
20359	1333	414	430	20773	1763	22536	37164	990	38154
8397	6238	514	370	8911	6608	15519	30446	1792	32240
28631	15636	221	17	28852	15653	44505	71278	372	71650
23792	21419	387	800	24179	22219	46398	78034	1594	79628
22185	4967	512	21	22697	4988	27685	47697	898	48595
14822	9410	51	5	14873	9415	24268	50202	262	50464
17063	2867	241	573	17304	3440	20744	37998	979	38977
18437	2761	0	100	18437	2861	21298	39930	3	40294
25976	1016	1953	150	27929	1166	29095	58496	3293	61789
18394	5500	1170	157	19564	5657	25221	52131	4827	56958
17015	4666	372	19	17387	4685	22072	45147	990	46137
5985	246	28	2000	6013	2246	8259	21087	2077	23164
<b>248829</b>	<b>77754</b>	<b>6044</b>	<b>5402</b>	<b>254873</b>	<b>83156</b>	<b>338029</b>	<b>638849</b>	<b>20659</b>	<b>659508</b>
<b>242771</b>	<b>74189</b>	<b>5500</b>	<b>4641</b>	<b>248271</b>	<b>78830</b>	<b>327101</b>	<b>615547</b>	<b>18368</b>	<b>633915</b>
<b>6058</b>	<b>3565</b>	<b>544</b>	<b>761</b>	<b>6602</b>	<b>4326</b>	<b>10928</b>	<b>23302</b>	<b>2291</b>	<b>25593</b>
<b>586037</b>	<b>111602</b>	<b>22994</b>	<b>24296</b>	<b>609031</b>	<b>135898</b>	<b>744929</b>	<b>1521800</b>	<b>94045</b>	<b>1615845</b>
<b>559824</b>	<b>102867</b>	<b>19477</b>	<b>18709</b>	<b>579301</b>	<b>121576</b>	<b>700877</b>	<b>1430380</b>	<b>76801</b>	<b>1507181</b>
<b>26213</b>	<b>8735</b>	<b>3517</b>	<b>5587</b>	<b>29730</b>	<b>14322</b>	<b>44052</b>	<b>91420</b>	<b>17244</b>	<b>108664</b>

Sr. No.	Name of the District/ Tahsil/ Block	Poultry-fowls					
		Fowls					
		Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
<b>DISTRICT AMARAVATI</b>							
1	Amaravati	4928	515	5443	10716	3462	
2	Morshi	2843	149	2992	6820	282	
3	Varud	2826	86	2912	9975	556	
4	Tiwasa	1637	114	1751	6450	396	
5	Chandur Railway	3717	232	3949	13264	2528	
6	Nandgaon (K)	5139	50	5189	12978	230	
7	Bhatkuli	2082	519	2601	5602	559	
8	Daryapur	1416	166	1582	1927	253	
9	Anjangaon	1427	387	1814	4062	526	
10	Dharni	5120	0	5120	15577	0	
11	Chikhaldara	4875	35	4910	16071	83	
12	Achalpur	1376	117	1493	5040	3053	
13	Chandur Bazar	3285	219	3504	11156	2729	
	District Total	40671	2589	43260	119638	14657	1
	Rural	38059	2306	40365	113571	13152	1
	Urban	2612	283	2895	6067	1505	
<b>DISTRICT YAVATMAL</b>							
1	Yavatmal	4711	147	4858	19594	990	
2	Babhulgaon	3219	20	3239	12245	123	
3	Kalamb	3767	8	3775	11705	138	
4	Ralegaon	4027	273	4300	11786	635	
5	Maregaon	6084	22	6106	20927	112	
6	Vani	7569	56	7625	25254	351	
7	Pandharkavda(K)	4843	110	4953	15702	255	
8	Ghatanji	5546	34	5580	20424	172	
9	Umarkhed	4140	150	4290	13928	15	
10	Mahagaon	3663	68	3731	15069	196	
11	Pusad	6869	313	7182	24635	877	
12	Digras	5598	1079	6677	22639	2421	
13	Darwaha	6259	136	6395	17207	463	
14	Ner	3666	6	3672	11190	43	
	District Total	69961	2422	72383	242305	6791	2
	Rural	66664	1942	68606	231923	6285	2
	Urban	3297	480	3777	10382	506	
<b>AMARAVATI DIVISION</b>							
	Total	194746	11025	205771	629415	35730	6
	Rural	181247	8962	190209	586442	29653	6
	Urban	13499	2063	15562	42973	6077	4

Livestock and Poultry—contd.

Poultry-fowls									
Fowls									
Chicken (Below 5 months)						Total Chicken	Total Poultry-fowls		
Deshi		Improved		Total			Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)	(15)	(16)	(17)	(18)
6125	1640	833	2535	6958	4175	11133	23409	7345	30754
6836	201	1359	78	8195	279	8474	16700	1868	18568
11019	40	298	990	11317	1030	12347	23860	1930	25790
4836	417	123	77	4959	494	5453	13340	710	14050
7528	1492	195	3045	7723	4537	12260	26001	6000	32001
11105	0	300	600	11405	600	12005	29222	1180	30402
3115	594	1009	329	4124	923	5047	11393	2416	13809
3807	303	218	53	4025	356	4381	7453	690	8143
4337	984	487	202	4824	1186	6010	10810	1602	12412
21861	159	0	0	21861	159	22020	42717	0	42717
14195	2374	205	91	14400	2465	16865	37515	414	37929
2920	44	561	581	3481	625	4106	9380	4312	13692
8354	671	386	311	8740	982	9722	23466	3645	27111
106038	8919	5974	8892	112012	17811	129823	275266	32112	307378
102446	7500	5084	6886	107530	14386	121916	261576	27428	289004
3592	1419	890	2006	4482	3425	7907	13690	4684	18374
18319	1695	151	10	18470	1705	20175	44319	1298	45617
9454	0	30	750	9484	750	10234	24918	923	25841
20359	1333	414	430	20773	1763	22536	37164	990	38154
8397	6238	514	370	8911	6608	15519	30448	1792	32240
28631	15636	221	17	28852	15653	44505	71278	372	71650
23792	21419	387	800	24179	22219	46398	78034	1594	79628
22185	4967	512	21	22697	4988	27685	47697	898	48595
14822	9410	51	5	14873	9415	24288	50202	262	50464
17063	2867	241	573	17304	3440	20744	37998	979	38977
18437	2761	0	100	18437	2861	21298	39930	3	40294
25976	1016	1953	150	27929	1166	29095	58496	3293	61789
18394	5500	1170	157	19564	5657	25221	52131	4827	56958
17015	4666	372	19	17387	4685	22072	45147	990	46137
5985	246	28	2000	6013	2246	8259	21087	2077	23164
48829	77754	6044	5402	254873	83156	338029	638849	20659	659508
42771	74189	5500	4641	248271	78830	327101	615547	18368	633915
6058	3565	544	761	6602	4326	10928	23302	2291	25593
86037	111602	22994	24296	609031	135898	744929	1521800	94045	1616845
59824	102867	19477	18709	579301	121576	700877	1430380	76801	1507181
26213	8735	3517	5587	29730	14322	44052	91420	17244	108664

Sr. No.	Name of the District/ Tahsil/ Block	Poultry-fowls				
		Fowls				
		Cocks			Hens	
		Deshi	Improved	Total	Deshi	Improved
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>DISTRICT WARDHA</b>						
1	Wardha	4513	281	4794	11905	1043
2	Selu	5614	563	6177	13926	556
3	Samudrapur	4524	368	4892	11174	659
4	Hinganghat	5207	126	5333	12235	248
5	Deoli	3633	134	3767	9872	893
6	Arvi	3303	195	3498	9784	360
7	Ashti	2319	14	2333	5234	213
8	Karanja	1886	93	1979	6085	76
	<b>District Total</b>	<b>30999</b>	<b>1774</b>	<b>32773</b>	<b>80215</b>	<b>4048</b>
	<b>Rural</b>	<b>28811</b>	<b>1448</b>	<b>30259</b>	<b>75087</b>	<b>3703</b>
	<b>Urban</b>	<b>2188</b>	<b>326</b>	<b>2514</b>	<b>5128</b>	<b>345</b>
<b>DISTRICT NAGPUR</b>						
1	Nagpur City	3432	2646	6078	10842	8789
2	Savner	2649	1751	4400	6389	6160
3	Parseoni	2515	90	2605	5933	198
4	Ramtek	4803	655	5458	11833	1393
5	Mauda	4839	498	5337	11097	20897
6	Kamthi	3219	1347	4566	5755	1712
7	Kuhi	5526	50	5576	15983	418
8	Bhivapur	3502	76	3578	9906	342
9	Umred	4393	353	4746	11262	8634
10	Nagpur Rural	2753	2576	5329	8847	2618
11	Hingana	3173	1152	4325	6996	2199
12	Katol	8761	505	9266	22999	498
13	Narkhed	2157	75	2232	5492	6204
14	Kalmeshwar	1542	10170	11712	3813	15443
	<b>District Total</b>	<b>53264</b>	<b>21944</b>	<b>75208</b>	<b>137147</b>	<b>75505</b>
	<b>Rural</b>	<b>45602</b>	<b>16972</b>	<b>62574</b>	<b>117304</b>	<b>53070</b>
	<b>Urban</b>	<b>7662</b>	<b>4972</b>	<b>12634</b>	<b>19843</b>	<b>22435</b>
<b>DISTRICT BHANDARA</b>						
1	Bhandara	6374	354	6728	16455	437
2	Mohadi	5679	1610	7289	13621	5674
3	Tumsar	19534	4007	23541	30245	4281
4	Tiroda	4794	304	5098	8945	621
5	Gondia	10001	3039	13040	17126	38108
6	Amgaon	5066	884	5950	7827	1947
7	Goregaon	6644	1188	7832	13213	1478
8	Salakasa	4781	26	4807	9169	101
9	Deori	9568	408	9976	19290	1532
10	Sakoli	15814	1622	17436	28173	1075
11	Arjuni Murgaoon	12577	317	12894	41099	389
12	Lakhandoor	5479	58	5537	16380	135
13	Pauni	6788	49	6837	16104	81
	<b>District Total</b>	<b>113099</b>	<b>13866</b>	<b>126965</b>	<b>237647</b>	<b>55859</b>
	<b>Rural</b>	<b>109131</b>	<b>10327</b>	<b>119458</b>	<b>229013</b>	<b>49379</b>
	<b>Urban</b>	<b>3968</b>	<b>3539</b>	<b>7507</b>	<b>8634</b>	<b>6480</b>

Livestock and Poultry—contd.

Poultry-fowls									
Fowls									
Chicken (Below 5 months)						Total Chicken (15)	Total Poultry-fowls		
Deshi		Improved		Total			Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)		(16)	(17)	(18)
12432	395	209	5678	12641	6073	18714	29245	7211	36456
10691	1223	451	255	11142	1478	12620	31454	1825	33279
9106	5400	447	338	9553	5738	15291	30204	1812	32016
15234	4343	165	166	15419	4509	19928	37019	725	37744
8575	3258	130	620	8705	3878	12583	25338	1777	27115
9774	2271	333	344	10107	2615	12722	25132	1232	26364
2860	498	121	3	2981	501	3482	10911	351	11262
2787	2329	88	452	2875	2781	5656	13087	709	13796
<b>71459</b>	<b>19717</b>	<b>1964</b>	<b>7856</b>	<b>73423</b>	<b>27573</b>	<b>100996</b>	<b>202390</b>	<b>15642</b>	<b>218032</b>
<b>68744</b>	<b>18787</b>	<b>1644</b>	<b>7082</b>	<b>70388</b>	<b>25869</b>	<b>96257</b>	<b>191429</b>	<b>13877</b>	<b>205306</b>
<b>2715</b>	<b>930</b>	<b>320</b>	<b>774</b>	<b>3035</b>	<b>1704</b>	<b>4739</b>	<b>10961</b>	<b>1765</b>	<b>12726</b>
4621	2713	20229	15770	24850	18483	43333	21608	47434	69042
6148	3179	45	7910	6193	11089	17282	18365	15866	34231
4297	3032	114	3303	4411	6335	10746	15777	3705	19482
13266	7139	763	365	14029	7504	21533	37041	3176	40217
11827	6028	658	3311	12485	9339	21824	33791	25364	59155
6357	2852	532	123	6889	2975	9864	18183	3714	21897
19829	13222	71	9	19900	13231	33131	54560	548	55108
8323	7413	111	103	8434	7516	15950	29144	632	29776
13459	7653	631	7810	14090	15463	29553	36767	17428	54195
10935	2616	813	18016	11748	20632	32380	25151	24023	49174
9703	3023	503	8684	10206	11707	21913	22895	12538	35433
13780	908	456	416	14236	1324	15560	46448	1875	48323
4727	1676	3584	45	8311	1721	10032	14052	9908	23960
4367	1493	7256	6997	11623	8490	20113	11215	39866	51081
<b>131639</b>	<b>62947</b>	<b>35766</b>	<b>72862</b>	<b>167405</b>	<b>135809</b>	<b>303214</b>	<b>384997</b>	<b>206077</b>	<b>591074</b>
<b>20947</b>	<b>57118</b>	<b>11248</b>	<b>53921</b>	<b>132195</b>	<b>111039</b>	<b>243234</b>	<b>340971</b>	<b>135211</b>	<b>476182</b>
<b>10692</b>	<b>5829</b>	<b>24518</b>	<b>18941</b>	<b>35210</b>	<b>24770</b>	<b>59980</b>	<b>44026</b>	<b>70866</b>	<b>114892</b>
10443	18145	138	159	10581	18304	28885	51417	1088	52505
11908	9132	1846	1451	13754	10583	24337	40340	10581	50921
9332	11974	1177	571	10509	12545	23054	71085	10036	61121
7546	14255	1458	976	9004	15231	24235	35540	3359	38899
9923	29473	22201	16110	32124	45583	77707	66523	79458	145981
4157	13106	755	1071	4912	14177	19089	30156	4657	34613
11183	13263	623	4768	11806	18031	29837	44303	8057	52360
13963	2565	131	442	14094	3007	17101	30478	700	31178
15270	18575	161	634	15431	19209	34640	62703	2735	65438
18486	58101	2182	1644	20668	59745	80413	120574	6523	127097
21228	20130	51	76	21279	20206	41485	95034	833	95867
17494	0	164	0	17658	0	17658	39353	357	39710
29079	2998	162	7	29241	3005	32246	54969	299	55268
<b>180012</b>	<b>211717</b>	<b>31049</b>	<b>27909</b>	<b>211061</b>	<b>239626</b>	<b>450687</b>	<b>742475</b>	<b>128683</b>	<b>871158</b>
<b>70900</b>	<b>204546</b>	<b>28338</b>	<b>22274</b>	<b>199238</b>	<b>226820</b>	<b>426058</b>	<b>713590</b>	<b>110318</b>	<b>823908</b>
<b>9112</b>	<b>7171</b>	<b>2711</b>	<b>5635</b>	<b>11823</b>	<b>12806</b>	<b>24629</b>	<b>28885</b>	<b>18365</b>	<b>47250</b>

		Poultry-fowls					
		Fowls					
Sr. No.	Name of the District/ Tahsil/ Block	Cocks			Hens		
		Deshi	Improved	Total	Deshi	Improved	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>DISTRICT CHANDRAPUR</b>							
1	Chandrāpur ...	7887	441	8328	22428	1049	2347
2	Bhadrawati ...	5852	0	5852	13229	0	1322
3	Warora ...	8437	554	8991	20429	1551	2198
4	Chimur ...	8578	328	8906	22639	967	2360
5	Nagbhid ...	7100	330	7430	16439	390	1682
6	Brahmapuri ...	6192	43	6235	16833	307	1714
7	Sindewahi ...	7208	110	7318	19599	313	1991
8	Mul ...	12208	2333	14541	44178	2041	4621
9	Gondpimpri ...	8382	249	8631	22394	1265	2365
10	Rajura ...	16553	451	17004	35676	1735	3741
	<b>District Total ...</b>	<b>88397</b>	<b>4839</b>	<b>93236</b>	<b>233844</b>	<b>9618</b>	<b>24346</b>
	<b>Rural ...</b>	<b>83883</b>	<b>4426</b>	<b>88309</b>	<b>224894</b>	<b>8851</b>	<b>23374</b>
	<b>Urban ...</b>	<b>4514</b>	<b>413</b>	<b>4927</b>	<b>8950</b>	<b>767</b>	<b>971</b>
<b>DISTRICT GADCHIROLI</b>							
1	Gadchiroli ...	5301	105	5406	13968	2918	1688
2	Arneri ...	7765	184	7949	20282	638	2092
3	Kurkheda ...	8184	305	8489	18383	653	1903
4	Dhanora ...	10924	33	10957	19010	210	1922
5	Etapalli ...	13625	168	13793	22242	208	2245
6	Sironcha ...	7117	107	7224	11288	77	1136
7	Aheri ...	12295	883	13178	16810	601	1741
8	Chamorshi ...	14638	310	14948	34230	586	3481
	<b>District Total ...</b>	<b>79849</b>	<b>2095</b>	<b>81944</b>	<b>156213</b>	<b>5891</b>	<b>16210</b>
	<b>Rural ...</b>	<b>78228</b>	<b>2065</b>	<b>80293</b>	<b>152705</b>	<b>3248</b>	<b>15595</b>
	<b>Urban ...</b>	<b>1621</b>	<b>30</b>	<b>1651</b>	<b>3508</b>	<b>2643</b>	<b>615</b>
<b>NAGPUR DIVISION</b>							
	<b>Total ...</b>	<b>365608</b>	<b>44518</b>	<b>410126</b>	<b>845066</b>	<b>150921</b>	<b>99598</b>
	<b>Rural ...</b>	<b>345655</b>	<b>35238</b>	<b>380893</b>	<b>799003</b>	<b>118251</b>	<b>91725</b>
	<b>Urban ...</b>	<b>19953</b>	<b>9280</b>	<b>29233</b>	<b>46063</b>	<b>32670</b>	<b>7873</b>
<b>MAHARASHTRA STATE(1992)</b>							
	<b>Total ...</b>	<b>3449784</b>	<b>339529</b>	<b>3789313</b>	<b>10485683</b>	<b>3974790</b>	<b>1446047</b>
	<b>Rural ...</b>	<b>3253429</b>	<b>256964</b>	<b>3510393</b>	<b>9854847</b>	<b>3556391</b>	<b>1341123</b>
	<b>Urban ...</b>	<b>196355</b>	<b>82565</b>	<b>278920</b>	<b>630836</b>	<b>418399</b>	<b>104923</b>
<b>MAHARASHTRA STATE(1987)</b>							
	<b>Total ...</b>	<b>2602594</b>	<b>345813</b>	<b>2948407</b>	<b>8261425</b>	<b>3646427</b>	<b>1190785</b>
	<b>Rural ...</b>	<b>2429623</b>	<b>273656</b>	<b>2703279</b>	<b>7772151</b>	<b>3055052</b>	<b>1082720</b>
	<b>Urban ...</b>	<b>172971</b>	<b>72157</b>	<b>245128</b>	<b>489274</b>	<b>591375</b>	<b>108064</b>



Livestock and Poultry—contd.

Poultry-fowls									
Fowls									
Chicken (Below 5 months)						Total Chicken	Total Poultry-fowls		
Deshi		Improved		Total			Deshi	Improved	Total
For Eggs (9)	For Meat (10)	For Eggs (11)	For Meat (12)	For Eggs (13)	For Meat (14)		(15)	(16)	(17)
18924	26127	407	1441	19331	27568	46899	75366	3338	78704
18085	5025	0	0	18085	5025	23110	42191	0	42191
11022	30968	639	1233	11661	32201	43862	70856	3977	74833
17097	41220	245	424	17342	41644	58986	89534	1964	91498
14548	25660	58	352	14606	26012	40618	63747	1130	64877
14414	35233	223	117	14637	35350	49987	72672	690	73362
16727	30202	241	191	16968	30393	47361	73736	855	74591
30817	26762	672	1050	31489	27812	59301	113965	6096	120061
23657	32688	534	129	24191	32817	57008	87121	2177	89298
32198	59663	1238	2995	33436	62658	96094	144090	6419	150509
197489	313548	4257	7932	201746	321480	523226	833278	26646	859924
189721	302862	3676	6810	193397	309672	503069	801360	23763	825123
7768	10686	581	1122	8349	11808	20157	31918	2883	34801
9757	19613	4237	88	13994	19701	33695	48639	7348	55987
18630	41888	559	2190	19189	44078	63267	88565	3571	92136
16780	39170	249	504	17029	39674	56703	82517	1711	84228
18368	42296	846	208	19214	42504	61718	90598	1297	91895
21976	42086	99	386	22075	42472	64547	99929	861	100790
11732	17676	92	63	11824	17739	29562	47813	339	48152
22102	30602	119	223	22221	30825	53046	81809	1826	83635
31219	69049	653	1169	31872	70218	102090	149136	2718	151854
150564	302380	6854	4831	157418	307211	464629	689006	19671	708677
147846	298557	2588	3481	150434	302038	452472	677336	11382	688718
2718	3823	4266	1350	6984	5173	12157	11670	8289	19959
731163	910309	79890	121390	811053	1031699	1842752	2852146	396719	3248865
698158	881870	47494	93568	745652	975438	1721090	2724686	294551	3019237
33005	28439	32396	27822	65401	56261	121662	127460	102168	229628
6437698	2341907	2547740	2530766	8985438	4872673	13858111	22715072	9392825	32107897
6111803	2190575	1285556	2022070	7397359	4212645	11610004	21410654	7120981	28531635
325895	151332	1262184	508696	1588079	660028	2248107	1304418	2271844	3576262
5679142	1763136	1207165	1271191	6886307	3034327	9920634	18306297	6470596	24776893
5376289	1657893	1035151	1069156	6411440	2727049	9138489	17235956	5433015	22668971
302853	105243	172014	202035	474867	307278	782145	1070341	1037581	2107922

SOURCE — 15<sup>th</sup> LIVESTOCK CENSUS, MAHARASHTRA

## Chapter III

### Objectives & Methodology

In the previous two chapters we observed the importance of the poultry sector in the economy and also Maharashtra's share in it. Further, the poultry sector, as already discussed comprises of organized and unorganized units. While the organized sector consists mostly of large-sized urban farms making use of highly automated equipment and assuming the dimension of industrial production in terms of scale, the unorganized sector comprises of thousands of small farms with small scale of operation and using traditional technology.

In a country like India, in view of its socio-economic conditions, traditional poultry still has a role to play and cannot be easily replaced by industrial farming. This is because in developing economies, poultry farming is not just a means of mass food production, but an important source of mass employment and hence automation can have only a limited role to play. Hence in such economies, local breeds, low cost feed formulations using locally grown ingredients and low cost housing of birds is preferred.

Recognizing the importance of traditional poultry in India, an attempt has been made to study the economics of poultry units belonging to the unorganized sector using mainly traditional technology. The study is related to the state of Maharashtra.

It must however be noted in the very beginning, that the study initially aimed at covering both layer and broiler farms. However, during field visits, difficulty was observed in obtaining data for layer farms, while data on broiler farms was more readily available. The present study thus concentrates more on broiler farming, while layer farming is only touched upon on the basis of the very limited data available.

### **3.1 Objectives**

More specifically, the broad objectives of our study are:

- 1) To assess the economic viability of the broiler and layer units,
- 2) To estimate the cost of production of broilers and eggs,
- 3) To estimate the reasons for losses, if any,
- 4) To recommend implications for policy.

### **3.2 Methodology for Broiler Farming:**

In what follows, we have outlined the method used by us for assessing the economic viability of broiler farms.

#### **3.2.1 Selection of Districts for Sample:**

It was observed in the previous chapter that in Maharashtra, total poultry population was highest in Pune district. Further, in Pune district, the poultry population was observed to be maximum in Mawal taluka (28.4 percent), followed by Haveli (15.5 percent). In the other talukas of Pune district, the share of the poultry population was relatively low.

In order to study the economics of broiler farming, we therefore selected Pune district and the talukas selected were Mawal and Haveli. Most of the poultry farms were however in Mawal taluka.

#### **3.2.2 Sample Size:**

As mentioned earlier, our study is related to the unorganized sector and hence the broiler farmers were relatively small. Our sample consisted of 48 units, mostly concentrated in Mawal taluka and the flock size in each unit ranged between 50 to 5000

birds. The distribution of sample according to flock size can be observed from the following table:

**Table 3.1: Distribution of the sample according to flock size:**

Serial Number	Flock Size	Number of Units
1	50-499	5
2	500-999	13
3	1000-1499	14
4	1500-1999	2
5	2000-2499	2
6	2500-2999	4
7	3000-4000	2
8	4001-5000	6
Total		48

From Table 3.1, it can be observed that among the sample units, more than half the units were in the flock size of 500 to 1499 birds.

### **3.2.3 System of Rearing Broilers:**

There are two systems of rearing broilers. They are the “all-in-all-out” system and the “relay” system. In our sample all the units were reared in the all-in-all-out system of the deep litter type wherein one batch was reared together until the eighth week (one cycle) and a new flock of fresh chickens were to be introduced only after disposing off the previous batch, already reared. In the relay system, the broiler farms maintain several age groups of birds on the farm at the same time. The birds of different age groups have to be kept in different sheds. This is to prevent infection from travelling from the older to the young birds, which might be possible, if mixed age groups are housed in the same shed. The advantage of this method is that the farmer is assured of a more regular flow of income.

However, as mentioned above, all units in our sample followed the all-in-all-out system. Although, this method assures income only after a gap of two months, it saves the farmer from maintaining different sheds. In the all-in-all-out system, normally 5 batches i.e. 5 cycles of birds are reared annually, after which the poultry shed is to be completely disinfected and left vacant for two months before stocking a fresh batch of birds

#### **3.2.4 Methodology for Data Analysis:.**

For working out the economics of broiler units, costs incurred were grouped into fixed costs and variable costs.

- 1) Fixed Costs:** Fixed costs included depreciation on building and equipment and interest on capital.
  - a) Depreciation of fixed assets: Poultry farms with deep litter system were constructed with kutcha floors, brick walls, and thatched roofs. Some farms used asbestos sheets for roofs. The side walls of the poultry shed was covered with wire mesh. Paddy husk was normally used by the farmers as litter. The life of a poultry shed was taken to be 15 years. The depreciation rate was therefore taken to be 6.7 percent on these structures.
  - b) Depreciation on Equipment: The equipment in poultry farms comprised of feeders for birds, waterers, brooders, debeakers and lanterns. The life of these was taken to be 5 years and depreciation was charged at 20 percent per annum.
  - c) Interest on fixed assets and working capital: Interest on fixed assets and working capital for purchase of birds was charged at the rate of 12 percent as per NABARD guidelines

2) **Variable Costs:** Variable costs include operational expenses like cost of Day-Old\_Chick (DOC), feed, litter, veterinary aid, maintenance of shed, electricity charges etc.

3) **Gross Income:** The gross income from the broiler farms consisted of income from the sale of a broiler and income from the sale of gunny bags and manure.

Data on fixed and variable costs as well as gross income was collected from the sample farms by means of a questionnaire addressed to them.

### **Economic Viability of Broiler Farms:**

In order to derive the net income of the broiler farm, the data on costs as well as gross income have been tabulated in the following manner:

#### **Cost of Rearing Broilers, Gross Receipts and Net Income For Per Bird, Per Cycle**

#### **Particulars:**

##### **A. Variable Costs:**

- 1) Cost of Day-Old-Chick
- 2) Cost of feed
- 3) Veterinary Aid
- 4) Electricity charges
- 5) Labour charges
- 6) Litter Charges
- 7) Miscellaneous expenses

#### **TOTAL VARIABLE COSTS**

##### **B. Fixed Cost:**

- 1) Depreciation ( shed and equipment)

- 2) Interest on capital investment

**TOTAL FIXED COST**

**C. Gross Receipts:**

- 1) Sale of birds
- 2) Sale of gunny bags
- 3) Sale of manure

**TOTAL GROSS RECEIPTS**

**D. Net Income: [C-(A+B)]**

Gross receipts-Total Costs =Net Income

By tabulating the data in the above format, we obtained the net income per bird, per cycle. The field survey was conducted by us in June 1997 and the data collected by us was related to the most recent broiler cycle that had been completed.

Ofcourse a positive net income would indicate that the broiler business is a profitable one, while a negative income per bird indicates that the business is a loss making one. As there are normally 5 broiler cycles in a year in the all-in-all-out system, merely multiplying the net income earned in a cycle by 5 would give us only an approximate annual income as there are frequent fluctuations in prices of feed and also the sale price of broilers. Further, in a particular cycle the entire flock may get diseased and hence in this case there may be no income to the broiler farmer.

**Cost of Production Per Broiler:**

The cost of production of a broiler was arrived by the following formula:

$$\text{Cost of production per broiler} = \frac{\text{Total cost of production} - \text{Income from manure and gunny bags per bird}}{\text{Weight of bird}}$$

The cost of production per kg. of broiler can thus be compared to the sale price per kg.

### **3.3 Methodology for Layer Farming:**

In order to study the economic viability of layer farming , we have adopted a methodology analogous to that adopted for studying broiler farms. However, our study on layer farming was subject to certain limitations, which we have outlined below.

#### **3.3.1 Limitations on sample size:**

As mentioned earlier, although a questionnaire was prepared by us to be addressed to the layer farmers, sample farms could not be obtained from Pune district. A number of layer farms had closed down, while in some farms it was quarantine period. It also appeared to us that farmer's preference is more for broiler farming than rearing layers for eggs. This is because in layer farming, the chicks reach maturity only after 20 weeks when they begin to lay eggs and continue to do so for the next one year. Hence during 20 weeks or for 5 months, the layer farmer does not receive any income. Also, since the birds continue to lay eggs for one year or so, incase of mortality of the flock due to disease, the farmer would lose the entire income he expects to get in the year from his flock, assuming ofcourse that he maintains only one cycle at a time (all-in-all-out system). A fresh flock would mean that he has to wait again for 5 months to get returns. In case of broilers however, there are quick returns to growers, as chicks are ready for market in seven to eight weeks. Perhaps, taking these factors into consideration, poultry farmers, atleast in the unorganized sector, prefer broiler farming as compared to layer farming.

Further, studies<sup>1</sup> have also shown that production of broilers are comparatively more advantageous than producing eggs. In case of broiler farming, the NABARD study



showed that the farmer was able to cover his fixed cost in roughly one and a half year, while in case of layers (under the cage system) it took atleast three years. In case of deep litter system it was much more. Also, income per bird for the broiler farmers was above 100 percent that of the efficient layer farmers.

Again, the steep growth in broiler production is also reflected in the increased growth of broiler hatcheries in the country from 77 in 1980 to 281 in 1993, while the layer hatcheries number went up limitedly from 97 to 113 during the same time. Similarly, during this period, broiler parent stock in production went up by almost 700 percent, while layer parents went up by mere 33 percent<sup>ii</sup> In Mawal taluka, as per the 1992 Livestock census, out of the total chick population, 91.2 percent were for meat and only 8.8 percent was for eggs.

Perhaps, from the above discussion, the farmer's bias towards broiler farming, rather than layer farming can be justified. Only, a very limited study on layer farms has therefore been undertaken.

### **3.3.2 Methodology:**

As already mentioned, data related to unorganized sector, was not available, in Mawal or Haveli talukas of Pune district. Hence, we addressed our questionnaire to a poultry farmer, who was operating a huge layer farm with a capacity of one lakh birds. His farm however constituted a part of the organized sector, which is not the main theme of our study. However, even analysing the data sheet of a big poultry farmer could be useful to our study, as we can understand the economics of big poultry farms, the problems faced by them and the implications, if any, for the unorganized sector.

For the layer farm, to which we addressed our questionnaire, we tabulated the data in a similar manner as that tabulated for broiler farms. Accordingly, the net income for the layer farm was obtained.

#### Cost

Further we also calculated the cost of production per egg by the following formula :

$$\text{Cost of production per egg} = \frac{\text{Total cost - Income from culls, gunnybags, and manure}}{\text{Number of eggs produced}}$$

Comparison of cost of production per egg, with its sale price gives us an idea on the margin earned per egg.

We thus used the above methodology, to study the economic viability of poultry farms.

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<sup>1</sup> NABARD- Poultry Development Schemes In Gujarat- An Ex-Post Evaluation, 1988,p 35-38.

<sup>2</sup> India Poultry Industry Yearbook, 1994 edition (10<sup>th</sup> edition)

## **Chapter IV**

### **Economics of Broiler Farming**

A broiler is a young chicken, usually six to eight weeks of age of either sex, that is tender meat with soft smooth skin and provides a good source of protein to the diet.

Broiler farming occupies an important place in poultry industry. The broiler industry is a fast growing and popular segment of poultry industry due to minimum capital investment and space requirement, easy and early start and quick return i.e. within 6-8 weeks.

#### **4.1 Broiler Management:**

The factors that determine success of a broiler operation are, choice of breed, quality of feed, efficiency of management and efficiency of marketing. A good strain should be selected as it will have good feed conversion, livability and fast growth. The broiler house should be constructed in a manner which provides good ventilation. Each bird in the deep litter type requires atleast one square feet of floor space as overcrowding results in poor performance, mortality and stress. The birds should also be protected from wind drafts. Further, adequate feeding space should be provided as insufficient feeding space restricts growth and impairs quality of the meat. The water should also be disinfected. Routine culling should be practiced and sick birds should be removed as they are a risk to the entire flock. Similarly dead birds should be removed immediately as they can spread diseases. It is also necessary to maintain the correct temperature as low temperature will result in high feed consumption while high temperatures will reduce feed intake and growth rate.

Finally, it has to be remembered that to keep the flock healthy and prevent birds from diseases a vaccination schedule should be followed. Vaccination is one of the most effective ways of preventing specific diseases by building up immunity in the birds. Further, in case of certain diseases such as Ranikhet and fowl pox against which no treatment is available, vaccination offers the only way for the farmer to protect his birds. Besides vaccination, the cleaning of poultry houses between the removal of a flock and the introduction of another flock is the most effective way of disease prevention and control. Disinfection, which is the process of destroying disease producing viruses, bacteria and fungi by various chemicals is very necessary in poultry farms. At times disinfestation which aims at destroying parasites may also be required.

Lack of efficient broiler management would result in high mortality. High mortality could be due to faulty brooding management, infections caused by bacteria and viruses and also feed deficiency. Mortality could also be due to extreme climatic stresses and disease outbreak, if any.

While efficient broiler management is the key to the success of broiler farming, other factors such as feed conversion ratio, live body weight and rate per kg live weight are equally important to make the broiler venture a successful one.

#### **4.2 Economic Viability of Broiler Units:**

The rearing of broilers in India, which was started in the 1970's made significant progress due to various factors:

- (a) Highly efficient broiler breeds, with high feed conversion ratios being available,
- (b) A crop of broiler takes hardly two months, hence there is a fast turnover of business,

(c) As chicken meat is often cheaper than other meat such as mutton and also fish, the consumption of broilers is popular, especially in cities and towns and broiler units have come up mainly near urban areas.

The economic viability of a broiler unit will depend upon the cost of production of the broiler as well the sale price. Getting a better return on the end product will also help to improve the profitability of the broiler farm. While cost of production depends mainly on feed costs along with other overheads, the sale price largely depends upon the market forces. The sale price is determined by demand and supply conditions and does not take the cost of production into consideration. It must however be noted here, that the cost of feed, day old chick and sale price of broiler are outside his control, but a good crop of broiler with high feed conversion ratio and low mortality depends largely on sound management practices. Even in case of same breed of birds and quality of feed, the feed conversion ratio may differ and in order to obtain higher live weight of the bird proper care must be ensured.

#### **4.3 Economics of Broiler Units as Observed In the Sample Size:**

As we mentioned in Chapter III, we obtained a sample of 48 broiler farms which were classified into 8 groups according to size. We then studied the economics of these units.

In Table 4.1 we have shown the total costs (i.e. the different elements of variable and fixed costs), the gross receipts and the net profit obtained by the poultry farmers having different farm sizes.

#### **4.3.1 Total Costs:**

The data in Table 4.1 indicate that in category I, which has the smallest farms ranging in size from 50 to 499 birds, the total cost was the highest. The variable cost per bird was Rs 4 to Rs 7 higher in this category as compared to farms of bigger size farms. In category V where farms were in the size group 2000-2499 birds, the variable as well as fixed costs seemed lowest and the total cost per bird was Rs 46.91. In all other farms the costs ranged between Rs 46.91 per bird and Rs 56.34 per bird.

Comparing category 1 (having highest cost) with category V (having lowest costs), it can be observed that while both groups have more or less same feed costs, the main reason for this difference was the labour cost. In case of category V while labour cost is barely Rs 0.95 per bird, it is as high as Rs 7.90 in case of category I. This very high labour cost was observed especially, in case of very small farms having barely 50 birds. In our sample, we had one small farm having 50 birds and the labour cost was reported to be Rs 18 per bird. As the farm size increased, the labour cost per bird seemed to reduce and was lowest, barely Rs 0.52 in case of farms having relatively huge flock size of as much as 5000 birds.

However, the more important point to be noted is that out of total variable cost which constitutes 93 to 96 percent of total cost, it is the cost of feed which is the single largest factor in the cost of producing a broiler. It can be observed from Table 4.1, that the cost of feed formed half the cost, or a little more in case of all farms. However, there are often variations in the purchase price of feed and the feed cost per bird across farms. While the feed cost was Rs. 25 per bird in category I and V, it was Rs 29.15 per bird in

category VI. The main reason for this difference in cost was because while most of the farms purchased feed at the rate of Rs 7 to Rs 8 per kg, we observed in our sample that there were certain farms which purchased feed at a low rate of Rs 6 per kg, while certain other farms which purchased feed at Rs 9.20 per kg. While feed prices do fluctuate, it is also true that feed prices do differ as different feeds have different formulations. Also at times farmers use locally available cheaper feed ingredients. However, it was nowhere observed in our study, that in case of costly feeds, the weight gained by the bird was higher. Hence since feed costs varied across farms and in some cases by as much as Rs. 3 per kg. there were naturally differences in total variable costs among different farm sizes.

**Table 4.1 : Per Bird, Per Batch Variable and Fixed Cost, Gross Receipts and Net Profit.**

Cate gory	Flock Size (bird)	Cost of Day old chick	Cost of feed	Electr icity	Veteri nary Charge	Labour Charge	Litter	Cost of Mainte nance	Miscell aneous Charges	Total Variabl e Cost	Depre ciatio n on Shed	Depre ciatio n on Equip ment	Intere st on Capit al	Total Fixed Cost	Total Cost Variable +Fixed	Gross Recei pts	Net Profit
I	50-499	12.80 (22.7)	25.04 (44.4)	0.95 (1.69)	2.15 (3.81)	7.9 (14)	1.16 (2.05)	1.9 (3.4)	0.84 (1.5)	52.74 (93.61)	1.03 (1.83)	0.23 (0.41)	2.3 (4.08)	3.6 (6.4)	56.34 (100)	59.02	2.68
II	500- 999	12.80 (25.5)	26.66 (53.19)	0.53 (1.05)	2.20 (4.4)	2.83 (5.6)	0.71 (1.42)	0.67 (1.3)	0.88 (1.75)	47.22 (94.21)	0.86 (1.71)	0.11 (0.22)	1.93 (3.85)	2.9 (5.8)	50.12 (100)	58.38	8.26
III	1000- 1499	12.88 (27.00)	25.10 (52.62)	0.45 (0.94)	1.74 (3.6)	1.74 (3.6)	1.74 (3.6)	0.67 (1.4)	1.15 (2.41)	45.47 (95.32)	0.64 (1.34)	0.10 (0.21)	1.51 (3.2)	2.2 (4.6)	47.7 (100)	59.04	11.34
IV	1500- 1999	12.55 (24.84)	28.30 (56.02)	0.56 (1.11)	2.00 (4.00)	1.37 (2.71)	1.75 (3.5)	0.62 (1.23)	1.25 (2.5)	48.42 (95.84)	0.50 (0.99)	0.25 (0.49)	1.35 (2.7)	2.10 (4.15)	50.52 (100)	61.84	11.32
V	2000- 2499	13.12 (27.96)	25.37 (54.08)	1.12 (2.4)	1.5 (3.2)	0.95 (2.02)	1.45 (3.09)	0.50 (1.06)	0.87 (1.85)	44.88 (95.67)	0.50 (1.06)	0.20 (0.43)	1.33 (2.83)	2.03 (4.32)	46.91 (100)	58.23	11.32
VI	2500- 2999	13.01 (25.65)	29.15 (57.47)	0.75 (1.48)	1.8 (3.5)	1.08 (2.13)	1.95 (3.84)	0.46 (0.91)	0.5 (0.98)	48.71 (96.03)	0.53 (1.04)	0.13 (0.26)	1.35 (2.7)	2.01 (4)	50.72 (100)	55.5	4.78
VII	3000- 4000	13.12 (26.55)	27.19 (55.02)	0.42 (0.85)	2.0 (4.05)	0.77 (1.56)	1.50 (3.03)	0.61 (1.23)	0.58 (1.17)	46.2 (93.5)	0.95 (1.9)	0.06 (0.12)	2.20 (4.45)	3.21 (6.4)	49.41 (100)	58.13	8.72
VIII	4001- 5000	12.96 (26.81)	27.3 (56.48)	0.36 (0.74)	2.5 (5.17)	0.52 (1.07)	1.41 (2.92)	0.42 (0.87)	0.51 (1.05)	45.98 (95.14)	0.67 (1.39)	0.11 (0.23)	1.57 (3.25)	2.35 (4.86)	48.33 (100)	56.44	8.11

Note : Figures in brackets are percentage to Total Cost (i.e. Variable Cost + Fixed Cost).

Source : Compiled from Appendix A.4.1, A.4.2, A.4.3, A.4.4.



Almost all farms purchased Day Old Chicks for Rs. 12 to Rs 13. In the selection of the chick, the critical factor should be quality and not cost. The poorer quality, lower yielding birds require as much labour, effort and other inputs as the high yielding ones. The purchase of a cheap chick is therefore not a method of reducing the cost of production. Infact, a poor quality breed may result in a low feed conversion or even mortality. The cost of Day Old Chick was around 26 percent of total costs in case of most farms.

It thus appears, that the cost of the feed and the bird together account for nearly 80 percent of the total cost. Infact, the variable costs account for the main costs in broiler farming and constitute 93 to 96 percent of total costs. Veterinary costs range between 3 to 5 percent in all farm size groups. Since all the broiler farms surveyed by us were of the deep litter type, naturally litter material such as saw dust, paddy husk, straw etc. entailed expenses. This was normally 2 to 3 percent of total costs.

The fixed costs formed barely 4 to 6 percent of the total costs. Interest on capital constituted the major portion of fixed cost. The data collected by us, indicated that poultry farmers used own land and own capital for the construction of poultry sheds. The cost of construction of shed for each poultry farmer varied widely depending upon quality of construction, size and ofcourse year of construction. The poultry farmers had hardly automated their farms and hence equipment cost was negligible.

The overall conclusions related to the cost incurred by poultry farmers, indicates that out of total costs, the variable cost constituted 93 to 96 percent and hence had a predominant share in total costs. Again, out of total variable cost, it was the feed cost which

was the major item, followed by the cost of the bird. In case of fixed costs, it was the interest on capital which was the main item of expenditure.

It can be observed from Table 4.1 that per bird variable costs were highest in case of farms in the smallest size groups ( i.e. category I ) and was of the order of Rs 52.74 per bird. Infact, in case of one sample farm, which had only 50 birds, the variable cost per bird worked out to be Rs 66.60 per bird. This was because, as mentioned earlier, due to the high labour costs that it was incurring. In case of other farms, however, the variable costs ranged between Rs 45 to Rs 48 per bird.

#### **4.3.2 Gross Receipts:**

As already discussed, the income from a broiler farm is obtained from three sources viz. (1) from the sale of birds, (2) from the sale of gunny bags and (3) from sale of manure.

Again , the income from the sale of birds depended mainly on two factors i.e. the sale price of the bird and the weight of the bird. A higher live weight would ofcourse fetch a higher income as compared to a bird with a lower feed conversion. Further, if the birds have a high mortality rate to that extent their income is lowered. In our sample it was observed that most of the birds had mortality ranging around 5 percent. Sometimes farmers place more chicks than the shed can comfortably hold and this results in high, unhealthy stocking density i.e. overcrowding. If not set right, this can result in early mortality of birds. Further, despite all possible precautions, diseases do occur. Hence, the farmer must be alert to detect the first symptoms of a disease for its timely treatment. However,

individual treatment of a bird is rarely economical and prevention of diseases through proper health care should be the main aim of a poultry farmer.

The data presented in Table 4.1 indicate that the income obtained from the poultry farms ranged between Rs 55.5 per bird to Rs 61.84 per bird. The main item of income for the broiler farmer was ofcourse from the sale of the bird. Obviously, a higher sale price, which is determined mainly by demand and supply conditions in the market, would fetch a larger income to the poultry farmer. In our sample it was observed that the sale price of a live bird ranged between Rs 34 to Rs 40 per kg. This was the farm gate price prevailing during the period of our survey i.e. June-July 1977.

Regarding weight of the bird, it was observed that most often the weight of the live bird ranged between 1.5 to 1.7 kg. It was nowhere observed in our sample, that large farms have a higher feed conversion as compared to small farms. Overall, our data revealed that both large and small farms have similar feed conversion ratios and achieved similar sale prices for their birds. The receipts obtained from sale of birds constituted 95 to 96 percent of the gross receipts of the poultry farm.

Besides , the farmer also obtained a small portion of his income from by- products of poultry business i.e. manure. Poultry droppings can be used to enhance the productivity of agricultural lands. This is particularly true because the birds are fed on feeds rich in different elements. The nutrient content of poultry manure is known to be richer than farmyard manure. In the deep litter system, it was observed that 33 to 40 birds can produce about one tonne of manure in one year. The poultry farmers in our sample indicated that they sold one tonne of manure for Rs 400. This manure which was a by product of rearing

broilers thus proved to be an additional source of income. Further, the poultry feed purchased by farmers comes in gunny bags and the empty gunny bags again have a resale price. These gunny bags can thus be disposed off and bring some marginal income to the farmer.

The data collected from the sample farms indicated that the income from sale of gunny bags constituted 1 percent of income, while that from sale of manure constituted 3 percent of gross receipts.

#### **4.3.3 Net Profit in Broiler Farming:**

We have already discussed the cost ( i.e. variable and fixed ) involved in broiler rearing. Further, we also observed the gross receipts earned by the poultry farmer through different sources, the main one ofcourse being from the sale of the bird.

The net profit to the poultry farmer would naturally be the total costs deducted from the total receipts. The net profit earned by different farms is shown in Table4.1. The net profit earned in different size groups of farms varied widely ,between Rs 2.68 per bird to Rs 11.34 per bird. In our sample of 48 farms, only 3 farms incurred losses. One farm was operating at a very low level of production with a farm size of only 50 birds. This farm as mentioned earlier, had very high labour costs of Rs 18 per bird as compared to hardly Rs 1 to Rs 3 in the case of farms having 500 or more birds. These high labour costs resulted in a loss of as much as Rs 10.66 to the farmer. In another instance, a poultry farmer with a flock size of 1000 birds made losses of Rs 0.90 per bird. While costs incurred by the farmer were reasonable and in tune with what other farmers incurred , this farmer reported a relatively low live weight of 1.4 kg ( while in case of most other farms

the live weight of the bird was 1.5 to 1.6 kg ) and also a relatively low sale price of Rs 34 per kg. The income earned by the farmer was thus only Rs 47.78 per bird against the group average of Rs 59.04 per bird. Obviously, this resulted in losses to the farmer. In case of this farm it was observed that the floor space per bird was 0.8 sq. feet, while in case of most other farms the birds had atleast 1 sq. feet of floor space. Even a slight overcrowding of birds can cause stress related problems, impairing its growth.

However, most other poultry farmers made profits. The data reveal that in category III, IV and V the farmers earned as much as Rs 11.3 per bird. We could perhaps say that that the performance of category III is best, because out of our sample of 48 farms, 14 farms fall in this category. A number of farms earned more than Rs 11 per bird and infact in case of one farm, the net profit per bird was Rs 21.64 per bird. Two farms in this category earned Rs 18 per bird and only one farm showed losses as it showed low feed conversion. ( Appendix A.4.6 )

In case of category IV and V only two farms were found maintaining the flock size 1500-1999, and 2000-2499 respectively. Perhaps, more farms in this flock size showing similar performance would strengthen our conclusions.

In case of category VI having flock size 2500-2999 birds, net profits seemed low. All farms in this category purchased feed at a cost of Rs 9.20 ( while in case of other farms it ranged between Rs 6 to Rs8 per kg ). This high feed cost naturally escalated the variable costs, while there was no observation regarding birds in this category gaining more weight. . Infact the reverse situation was observed, where birds in this category achieved a weight of 1.4kg to 1.5 kg while others normally weighed 1.6 kg to 1.7 kg.

Although quality of feed does play an important role in the weight gain of the bird, other factors such as the temperature, stress, etc. are also responsible for the weight of the bird. The lower profits were made by the farm due to high feed costs and lower feed conversion ratios.

Again, relatively large farm sizes having birds ranging above 3000 showed profits of Rs 8 per bird.

The overall conclusion from our sample size showed that smallest farms had lowest net profits. The net profit increased with farm size upto a limit of maintaining 1500 birds. Thereby the net profits remained constant but showed a sharp fall in case of farms maintaining between 2500-2999 birds. The net profits again increased for farms maintaining 3000 to 5000 birds.

#### **4.3.4 Conclusions:**

From the previous sections, we observed the economics of broiler farming. While arriving at the conclusions of our study, we have to keep in mind that these conclusions are based on a small survey covering 48 farms in mainly Mawal taluka of Pune district. Further, the study observed only one broiler cycle and therefore estimating the farmer's income annually from one broiler cycle may not give accurate results. This is because poultry production is a delicate business, dealing with tender birds and profitability depends upon several factors. Hence the economic viability of poultry production is always an element of uncertainty. While a farmer may have a good crop in one cycle, his flock may get diseased in another, thus disrupting his flow of income. Infact, during our field survey, a number of poultry farms had closed down for disinfection and general

cleanliness, as flocks had been diseased. Ofcourse, this risk applies not only to poultry farming, but to any other crop as there are often instances of low yield or damage to the entire harvest due to bad weather, unseasonal rainfall or infestation by pests. Yet, there are certain features which are unique to poultry. For example, poultry birds require the same labour to feed them everyday as they are very sensitive to change in labour which may cause loss of appetite and hence impair growth. Further, birds being a biological production can be exposed to stress and the maximum expression of stress results in mortality from fright or shock, even though no injury is involved. The process of poultry farming may actually induce stress in birds. For example, when birds move from the brooder house to growing pens, they may be under stress. Again, stress may be induced due to reaction from vaccination, overcrowding, noise, strangers, debeaking etc. Stress may be a physical, chemical or emotional factor and can only be partially corrected by medical aid.

To recapitulate, the profitability on poultry farms like any other business depends upon cost of production and sale price of birds. Among the elements of cost, the main cost is that of feed and the day old chick. which together constitute 85 percent of the variable costs, while labour, litter, vaccination etc. constitute the rest. The sale price of the broiler depends upon demand and supply and does not take into account the cost of production. The demand is subject to fluctuations due to various reasons such as:

- 1) **Climate:** The demand tends to drop in summer and increase in cooler months.
- 2) **Religious festivals:** During certain religious, there may be a fall in demand, as people tend to abstain from non-vegetarian diet, thus lowering the price.

**3) Availability of other sources of meat and fish and their price:** If other sources of meat and fish are available and are cheap, the demand for broilers may fall.

Even a small change in the per kg cost of the broiler can change his net income. Thus while factors such as cost of feed ( the main input ) and sale price are often out of his control, good management and a proper marketing strategy may help the farmer to improve his profitability. Our sample showed that farmers mostly sold their broilers to local traders. If middlemen's margins could be reduced, the farmer could get a better return.

The main conclusion that emerged from our study is that broiler farming is an economically viable business. Farmers operating in all size groups made profits, although profits were lower in small sized farms having 200 birds or so. Farms maintaining a flock size of 1000 to 2499 birds showed maximum profits while profitability was a little lower in case of relatively bigger farms having 3000 to 5000 birds. Thus our study does not conclude that largest size farms in the sample had maximum profits with lowest costs and highest receipts.

#### **4.4 Cost of Production Per Kg of Broiler:**

The cost of production per kg of broiler was arrived at by deducting the income from manure and gunny bags per broiler, from the total cost of production per broiler, and dividing this figure by the weight of the bird. In other words, the following formula was used :

$$\text{Cost of Production per kg of broiler} = \frac{(\text{Total cost of production per bird} - \text{income from manure and gunny bag})}{(\text{Weight of the bird.})}$$



From the data collected by us we have computed the cost of production per kg of broiler for each farm category. This can be observed from Table 4.2:

**Table 4.2 Cost of Production per kg of Broiler**

Category	Total cost per bird (Rs)	Income from manure and gunny bags (Rs)	Weight of bird (Kg)	Cost of production per kg of broiler (Rs)	Sale price of broiler (Rs)
I ( 50 – 499 )	56.34	2.7	1.62	33.11	36.8
II ( 500 – 999)	50.12	2.5	1.55	30.72	37.84
III (1000-1499)	47.7	2.56	1.55	29.12	38.14
IV(1500-1999)	50.52	2.56	1.6	29.98	39
V(2000-2499)	46.91	2.56	1.6	27.72	39
VI(2500-2999)	50.72	2.56	1.47	32.76	37.75
VII(3000-4000)	49.41	2.56	1.5	31.23	39
VIII(4001-5000)	48.33	2.56	1.53	29.91	37

**Derived from Appendix A.4.7**

The data in Table 4.2 indicates that the smallest size farms had the highest cost of production of a broiler which was Rs 33.11 per kg. However, in case of farms having 2000 –2499 birds , the cost of production per kg of broiler, on an average was Rs 27.72 per kg. In case of one sample farm ( Appendix A.4.7 ) the cost of production was Rs 24.88 per kg which seemed to be the lowest in the entire sample. Bigger farms with a capacity of 3000 to 5000 birds had a cost of production of Rs 30 to Rs 31 per kg.

Taking an average of all farms with flock size ranging from as low as 50 birds to as high as 5000 birds indicates that the cost of production of a broiler is Rs 30.5 per kg

while its sale price is Rs 38 per kg. This suggests that production of broilers on the whole is a profitable venture.

### APPENDIX A.4.1

#### Variable Cost (Rs.) Per Bird

Category	Flock Size Number	Cost of DOC Rs.	Cost of feed Rs.	Electrici ty Charges	Veteri nary Aid Rs.	Labour Charge s Rs.	Litter Rs.	Cost of Mainten ance of equipm ent	Misce Charges Rs.	Total Variable Cost Rs.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>50-499</b>										
	1 50	13.00 (19.5)	24.5 (36.8)	1.50 (2.3)	4.00 (6.00)	18.00 (27.0)	1.60 (2.4)	4.00 (6.00)	-	66.60 (100)
	2 200	12.65 (25.0)	25.2 (49.8)	0.50 (1.0)	2.00 (3.9)	6.00 (11.9)	1.22 (2.4)	2.00 (4.0)	1.00 (2.0)	51.07 (100)
	3 200	12.65 (27.9)	21.0 (46.4)	1.00 (2.2)	1.50 (3.3)	6.00 (13.3)	1.12 (2.5)	1.00 (2.2)	1.00 (2.2)	45.27 (100)
	4 200	12.65 (22.1)	33.25 (58.2)	1.00 (1.8)	2.00 (3.5)	6.00 (10.5)	1.00 (1.7)	1.25 (2.2)	-	57.15 (100)
	5 400	13.25 (30.4)	22.75 (52.1)	0.75 (1.7)	1.25 (2.9)	3.50 (8.0)	0.88 (2.0)	1.25 (2.9)	-	43.62 (100)
<b>Avg Cost for I</b>		12.8 (24.2)	25.04 (47.5)	0.95 (1.80)	2.15 (4.07)	7.9 (15.0)	1.16 (2.0)	1.9 (3.5)	0.84 (1.5)	52.74 (100)
<b>I</b>										
<b>500-999</b>										
	6 500	12.00 (26.8)	24.50 (54.7)	1.00 (2.2)	0.50 (1.1)	3.60 (8.0)	0.72 (1.6)	1.00 (2.2)	-	44.82 (100)
	7 500	13.25 (27.0)	27.30 (55.6)	0.40 (0.8)	2.40 (4.9)	3.00 (6.1)	0.70 (1.4)	1.00 (2.0)	1.00 (2.0)	49.05 (100)
	8 500	13.15 (27.3)	25.35 (52.6)	0.40 (0.8)	3.00 (6.2)	3.60 (7.5)	0.70 (1.4)	1.00 (2.1)	1.00 (2.1)	48.2 (100)
	9 500	13.15 (28.4)	24.00 (51.8)	0.80 (1.7)	3.00 (6.5)	3.00 (6.5)	0.75 (1.6)	1.00 (2.2)	0.60 (1.3)	46.3 (100)
	10 500	12.15 (26.5)	25.50 (55.7)	0.60 (1.3)	2.50 (5.5)	2.40 (5.2)	0.65 (1.4)	1.00 (2.2)	1.00 (2.2)	45.8 (100)
	11 500	12.65 (28.1)	23.40 (52.1)	1.00 (2.2)	2.00 (4.5)	3.20 (7.1)	0.70 (1.6)	1.00 (2.2)	1.00 (2.2)	44.95 (100)
	12 500	12.65 (25.5)	28.60 (57.7)	0.40 (0.8)	2.00 (4.0)	3.80 (7.7)	0.70 (1.4)	0.40 (0.8)	1.00 (2.0)	49.55 (100)
	13 500	13.15 (25.6)	29.70 (57.8)	0.40 (0.8)	2.00 (3.9)	3.80 (7.4)	0.80 (1.6)	0.50 (1.0)	1.00 (1.9)	51.35 (100)
	14 500	12.15 (25.9)	27.00 (57.5)	0.40 (0.9)	3.00 (6.4)	2.40 (5.1)	0.70 (1.5)	0.50 (1.0)	0.80 (1.7)	46.95 (100)
	15 600	13.15 (27.1)	29.25 (60.2)	0.50 (1.0)	1.50 (3.1)	2.00 (4.1)	0.54 (1.1)	0.33 (0.7)	1.33 (2.7)	48.61 (100)
	16 600	13.20 (29.7)	24.60 (55.4)	0.33 (0.7)	2.00 (4.5)	2.00 (4.5)	0.75 (1.7)	0.33 (0.7)	1.2 (2.7) 0.83	44.38 (100)
	17 600	13.25 (30.7)	24.00 (55.5)	0.33 (0.8)	2.00 (4.6)	1.67 (3.9)	0.79 (1.8)	0.33 (0.8)	1.9 0.71	43.20 (100)
	18 700	13.15 (24.5)	33.30 (62.1)	0.43 (0.8)	2.42 (4.5)	2.42 (4.5)	0.78 (1.5)	0.36 (0.7)	1.3 0.88	53.6 (100)
<b>Avg Cost II</b>		12.8 (27.0)	26.66 (56.2)	0.53 (1.18)	2.2 (4.6)	2.83 (5.96)	0.71 (1.5)	0.67 (1.41)	1.86	47.4 (100)

Note : Figures in brackets are percentage to total variable cost.

(Contd.)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>III 1000-1499</b>											
19	1000	13.15 (32.9)	20.80 (52.0)	0.40 (1.0)	1.2 (3.0)	1.7 (4.2)	1.75 (4.4)	0.30 (0.8)	0.70 (1.7)	40.00 (100)	
20	1000	13.00 (32.0)	21.00 (51.7)	0.35 (0.9)	1.5 (3.7)	1.6 (3.9)	2.00 (4.9)	0.60 (1.5)	0.60 (1.5)	40.65 (100.1)	
21	1000	12.65 (26.5)	28.00 (58.8)	0.50 (1.0)	2.0 (4.2)	1.2 (2.5)	1.80 (3.8)	0.50 (1.0)	1.00 (2.1)	47.65 (99.9)	
22	1000	12.65 (28.0)	25.20 (55.9)	0.40 (0.9)	2.0 (4.4)	1.9 (4.2)	1.75 (3.9)	0.20 (0.5)	1.00 (2.2)	45.10 (100)	
23	1000	12.65 (28.4)	24.60 (55.2)	0.50 (1.1)	2.0 (4.5)	1.7 (3.8)	1.85 (4.1)	0.30 (0.7)	1.00 (2.2)	44.60 (100)	
24	1000	13.50 (25.0)	30.00 (55.6)	0.35 (0.6)	3.0 (5.6)	2.8 (5.2)	1.75 (3.2)	0.60 (1.1)	2.00 (3.7)	54.00 (100)	
25	1000	12.65 (26.8)	28.00 (59.4)	0.35 (0.7)	1.0 (2.1)	1.9 (4.0)	1.75 (3.7)	0.50 (1.1)	1.00 (2.2)	47.15 (100)	
26	1000	13.15 (28.0)	26.85 (57.2)	0.30 (0.6)	1.0 (2.1)	2.0 (4.3)	1.80 (3.8)	0.80 (1.7)	1.00 (2.1)	46.91 (99.9)	
27	1200	12.65 (28.7)	24.37 (55.4)	0.67 (1.5)	2.0 (4.5)	1.0 (2.3)	1.67 (3.8)	0.83 (1.9)	0.83 (1.9)	44.02 (100)	
28	1200	13.00 (30.6)	21.60 (50.8)	0.67 (1.6)	1.5 (3.5)	1.41 (3.3)	1.83 (4.3)	0.83 (2.0)	1.66 (3.9)	42.52 (100)	
29	1200	12.65 (28.4)	24.50 (55.1)	0.42 (1.0)	2.0 (4.5)	1.75 (3.9)	1.67 (3.7)	0.66 (1.5)	0.83 (1.9)	44.48 (100)	
30	1200	12.50 (25.7)	28.00 (57.6)	0.42 (1.0)	2.0 (4.1)	1.52 (3.1)	1.67 (3.4)	0.83 (1.7)	1.66 (3.4)	48.60 (100)	
31	1250	13.50 (31.4)	21.25 (49.4)	0.56 (1.3)	2.0 (4.7)	1.68 (3.9)	1.60 (3.7)	0.80 (1.9)	1.6 (3.7)	42.99 (100)	
32	1300	12.65 (26.3)	28.00 (58.3)	0.54 (1.1)	1.15 (2.4)	2.23 (4.7)	1.54 (3.2)	0.77 (1.6)	1.15 (2.4)	48.03 (100)	
Avg Cost for III		12.88 (28.32)	25.1 (55.2)	0.45 (0.99)	1.74 (3.83)	1.74 (3.83)	1.74 (3.83)	0.61 (1.34)	1.15 (2.5)	45.47 (100)	
<b>IV 1500-1999</b>											
33	1500	12.65 (26.1)	28.0 (57.9)	0.53 (1.1)	2.00 (4.1)	1.33 (2.7)	1.86 (3.8)	0.67 (1.4)	1.33 (2.7)	48.38 (100)	
34	1700	12.45 (25.7)	28.6 (59.0)	0.58 (1.2)	2.00 (4.1)	1.41 (2.9)	1.65 (3.4)	0.58 (1.2)	1.18 (2.4)	48.46 (99.9)	
Avg Cost for IV		12.55 (25.92)	28.3 (58.4)	0.56 (1.16)	2.00 (4.13)	1.37 (2.82)	1.75 (3.6)	0.62 (1.28)	1.25 (2.6)	48.42 (100)	
<b>V 2000-2499</b>											
35	2000	13.25 (26.9)	28.88 (58.7)	1.25 (2.5)	2.00 (4.0)	1.00 (2.0)	1.4 (2.8)	0.40 (0.8)	1.00 (2.0)	49.18 (100)	
36	2000	13.00 (32.0)	21.86 (53.8)	1.00 (2.5)	1.00 (2.5)	0.91 (2.2)	1.5 (3.7)	0.60 (1.5)	0.75 (1.8)	40.62 (100)	
Avg Cost for V		13.12 (29.23)	25.37 (56.6)	1.12 (2.5)	1.5 (3.3)	0.95 (2.12)	1.45 (3.2)	0.5 (1.11)	0.87 (1.9)	44.9 (100)	

Note : Figures in brackets are percentage to total variable cost.

(Contd.)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>VI 2500-2999</b>											
37	2500	13.25 (29.8)	24.6 (55.3)	1.20 (2.7)	2.00 (4.5)	0.96 (2.10)	1.6 (3.6)	0.48 (1.1)	0.40 (0.9)	44.49 (100)	
38	2500	13.50 (26.9)	29.9 (59.6)	0.70 (1.4)	2.00 (4.0)	1.04 (2.1)	2.24 (4.5)	0.40 (0.8)	0.40 (0.8)	50.18 (100.1)	
39	2500	12.65 (25.8)	29.9 (61.1)	0.52 (1.0)	1.20 (2.5)	1.52 (3.1)	1.8 (3.7)	0.56 (1.1)	0.80 (1.6)	48.95 (100.1)	
40	2500	12.65 (24.7)	32.2 (62.9)	0.60 (1.2)	2.00 (3.9)	0.8 (1.6)	2.16 (4.2)	0.40 (0.8)	0.40 (0.8)	51.21 (100.1)	
<b>Avg Cost for VI</b>		13.01 (26.71)	29.15 (59.8)	0.75 (1.54)	1.8 (3.7)	1.08 (2.22)	1.95 (4.00)	0.46 (0.94)	0.5 (1.03)	48.71 (100)	
<b>VII 3000-4000</b>											
41	3000	13.25 (25.2)	32.5 (61.8)	0.50 (0.9)	2.5 (4.7)	0.80 (1.5)	1.73 (3.3)	0.67 (1.3)	0.66 (1.3)	52.66 (100)	
42	4000	13.00 (32.7)	21.88 (55.0)	0.35 (0.9)	1.5 (3.7)	0.75 (1.9)	1.27 (3.2)	0.55 (1.4)	0.50 (1.2)	39.80 (100)	
<b>Avg Cost for VII</b>		13.12 (28.4)	27.19 (58.8)	0.42 (0.91)	2.0 (4.33)	0.77 (1.67)	1.5 (3.2)	0.61 (1.32)	0.58 (1.25)	46.23 (100)	
<b>VIII 40001-5000</b>											
43	4500	13.25 (27.8)	27.62 (58.1)	0.44 (0.9)	2.78 (5.8)	0.47 (1.0)	1.6 (3.4)	0.49 (1.0)	0.89 (2.0)	47.54 (100)	
44	5000	12.65 (25.3)	32.2 (64.4)	0.34 (0.7)	2.00 (4.0)	0.40 (0.8)	1.42 (2.8)	0.36 (0.7)	0.60 (1.2)	49.97 (99.9)	
45	5000	13.00 (32.2)	21.8 (54.1)	0.30 (0.7)	2.40 (5.9)	0.72 (1.8)	1.30 (3.2)	0.40 (1.0)	0.40 (1.0)	40.39 (99.9)	
46	5000	13.00 (31.0)	21.8 (52.0)	0.26 (0.6)	4.00 (9.5)	0.50 (1.2)	1.40 (3.3)	0.48 (1.2)	0.40 (1.0)	41.91 (100)	
47	5000	13.25 (27.2)	30.3 (62.2)	0.40 (0.8)	2.00 (4.1)	0.60 (1.2)	1.36 (2.8)	0.42 (0.9)	0.40 (0.8)	48.70 (100)	
48	5000	12.65 (26.5)	30.1 (63.0)	0.40 (0.9)	2.00 (4.2)	0.40 (0.8)	1.4 (2.9)	0.40 (0.9)	0.40 (0.8)	47.75 (100)	
<b>Avg Cost for VIII</b>		12.96 (28.14)	27.3 (59.3)	0.36 (0.78)	2.5 (5.4)	0.52 (1.13)	1.41 (3.06)	0.42 (0.91)	0.51 (1.11)	45.98 (100)	

Note : Figures in brackets are percentage to total variable cost.

## APPENDIX A.4.2

### Total Variable Cost (Rs.)

Category	Flock Size Number	Cost of DOC Rs.	Cost of feed Rs.	Electricity Charges	Veterinary Aid Rs.	Labour Charges Rs.	Litter Rs.	Cost of Maintenance of equipment	Miscellaneous Rs.	Total Variable Cost Rs.
<b>I</b>										
<b>50-499</b>										
1	50	650 (19.5)	1225 (36.8)	75 (2.3)	200 (6.0)	900 (27.0)	80 (2.4)	200 (6.0)	-	3330 (100)
2	200	2530 (25.0)	5040 (49.8)	100 (1.0)	400 (3.9)	1200 (11.9)	245 (2.4)	400 (4.0)	200 (2.2)	10115 (100)
3	200	2530 (27.9)	4200 (46.4)	200 (2.2)	300 (3.3)	1200 (13.3)	225 (2.5)	200 (2.2)	200 (2.2)	9055 (100)
4	200	2530 (22.1)	6650 (58.2)	200 (1.8)	400 (3.5)	1200 (10.5)	200 (1.7)	250 (2.2)	-	11430 (100)
5	400	5300 (30.4)	9100 (52.1)	300 (1.7)	500 (2.9)	1400 (8.0)	350 (2.0)	500 (2.9)	-	17450 (100)
<b>II</b>										
<b>500-999</b>										
6	500	6000 (26.8)	12250 (54.7)	500 (2.2)	1000 (4.5)	1800 (8.0)	360 (1.6)	500 (2.2)	-	22410 (100)
7	500	6625 (27.0)	13650 (55.7)	200 (0.8)	1200 (4.9)	1500 (6.1)	350 (1.4)	500 (2.0)	500 (2.0)	24525 (100)
8	500	6575 (27.3)	12675 (52.6)	200 (0.8)	1500 (6.2)	1800 (7.5)	350 (1.4)	500 (2.1)	500 (2.1)	24100 (100)
9	500	6575 (28.4)	12000 (51.8)	400 (1.7)	1500 (6.5)	1500 (6.5)	375 (1.6)	500 (2.2)	300 (1.3)	23150 (100)
10	500	6075 (26.5)	12750 (55.7)	300 (1.3)	1250 (5.5)	1200 (5.2)	325 (1.4)	500 (2.2)	500 (2.2)	22900 (100)
11	500	6325 (28.1)	11700 (52.1)	500 (2.2)	1000 (4.5)	1600 (7.1)	350 (1.6)	500 (2.2)	500 (2.2)	22475 (100)
12	500	6325 (25.5)	14300 (57.7)	200 (0.8)	1000 (4.0)	1900 (7.7)	350 (1.4)	200 (0.8)	500 (2.0)	24775 (99.9)
13	500	6575 (25.6)	14850 (57.8)	200 (0.8)	1000 (3.9)	1900 (7.4)	400 (1.6)	250 (1.0)	500 (1.9)	25675 (100)
14	500	6075 (25.9)	13500 (57.5)	200 (0.9)	1500 (6.4)	1200 (5.1)	350 (1.5)	250 (1.0)	400 (1.7)	23475 (100)
15	600	7890 (27.1)	17550 (60.2)	300 (1.0)	900 (3.1)	1200 (4.1)	325 (1.1)	200 (0.7)	800 (2.7)	29165 (100)
16	600	7920 (29.7)	14760 (55.4)	200 (0.8)	1200 (4.5)	1200 (4.5)	450 (1.7)	200 (0.8)	700 (2.6)	26630 (100)
17	600	7950 (30.7)	14400 (55.5)	200 (0.8)	1200 (4.6)	1000 (3.9)	475 (1.8)	200 (0.8)	500 (1.9)	25925 (100)
18	700	9205 (24.5)	23315 (62.1)	300 (0.8)	1700 (4.5)	1700 (4.5)	550 (1.5)	250 (0.7)	500 (1.3)	37520 (100)

Note: Figures in brackets are percentages to total variable cost.

(Contd.)

Total Variable Cost (Rs.)

Category	Flock Size Number	Cost of DOC Rs.	Cost of feed Rs.	Electricity Charges	Veterinary Aid Rs.	Labour Charges Rs.	Litter Rs.	Cost of Maintenance of equipment	Misce Charges Rs.	Total Variable Cost Rs.	
<b>III 1000-1499</b>											
	19	1000	13150 (32.9)	20800 (52.0)	400 (1.0)	1200 (3.0)	1700 (4.2)	1750 (4.4)	300 (0.8)	700 (1.7)	40000 (100)
	20	1000	13000 (32.0)	21000 (51.7)	350 (0.9)	1500 (3.7)	1600 (3.9)	2000 (4.9)	600 (1.5)	600 (1.5)	40650 (100)
	21	1000	12650 (26.5)	28000 (58.8)	500 (1.0)	2000 (4.2)	1200 (2.5)	1800 (3.8)	500 (1.0)	1000 (2.1)	47650 (100)
	22	1000	12650 (28.0)	25200 (55.9)	400 (0.9)	2000 (4.4)	1900 (4.2)	1750 (3.9)	200 (0.5)	1000 (2.2)	45100 (100)
	23	1000	12650 (28.4)	24600 (55.2)	500 (1.1)	2000 (4.5)	1700 (3.8)	1850 (4.1)	300 (0.7)	1000 (2.2)	44600 (100)
	24	1000	13500 (25.0)	30000 (55.6)	350 (0.6)	3000 (5.6)	2800 (5.2)	1750 (3.2)	600 (1.1)	2000 (3.7)	54000 (100)
	25	1000	12650 (26.8)	28000 (59.4)	350 (0.7)	1000 (2.1)	1900 (4.0)	1750 (3.7)	500 (1.1)	1000 (2.2)	47150 (100)
	26	1000	13150 (28.0)	26856 (57.3)	300 (0.6)	1000 (2.1)	2000 (4.3)	1800 (3.8)	800 (1.7)	1000 (2.1)	46906 (99.9)
	27	1200	15180 (28.7)	29250 (55.4)	800 (1.5)	2400 (4.5)	1200 (2.3)	2000 (3.8)	1000 (1.9)	1000 (1.9)	52830 (100)
	28	1200	15600 (30.6)	25920 (50.8)	800 (1.6)	1800 (3.5)	1700 (3.3)	2200 (4.3)	1000 (2.0)	2000 (3.9)	51020 (100)
	29	1200	15180 (28.4)	29400 (55.1)	500 (1.0)	2400 (4.5)	2100 (3.9)	2000 (3.7)	800 (1.5)	1000 (1.9)	53380 (100)
	30	1200	15000 (25.7)	33600 (57.6)	500 (1.0)	2400 (4.1)	1820 (3.1)	2000 (3.4)	1000 (1.7)	2000 (3.4)	58320 (100)
	31	1250	16875 (31.4)	26562 (49.4)	700 (1.3)	2500 (4.7)	2100 (3.9)	2000 (3.7)	1000 (1.9)	2000 (3.7)	53737 (100)
	32	1300	16445 (26.3)	36400 (58.3)	700 (1.1)	1500 (2.4)	2900 (4.7)	2000 (3.2)	1000 (1.6)	1500 (2.4)	62445 (100)
<b>IV 1500-1999</b>											
	33	1500	18975 (26.1)	42000 (57.9)	800 (1.1)	3000 (4.1)	2000 (2.8)	2800 (3.8)	1000 (1.4)	2000 (2.8)	72575 (100)
	34	1700	21165 (25.7)	48620 (59.0)	1000 (1.2)	3400 (4.1)	2400 (2.9)	2800 (3.4)	1000 (1.2)	2000 (2.4)	82385 (99.9)
<b>V 2000-2499</b>											
	35	2000	26500 (26.9)	57750 (58.7)	2500 (2.5)	4000 (3.9)	2000 (4.0)	2800 (2.0)	800 (0.8)	2000 (2.03)	98350 (100)
	36	2000	26000 (31.84)	43750 (53.6)	2000 (2.4)	2000 (2.4)	2200 (2.69)	3000 (3.67)	1200 (1.46)	1500 (1.8)	81650 (100)

Note: Figures in brackets are percentages to total variable cost.

(Contd.)

**Total Variable Cost (Rs.)**

Category	Flock Size Number	Cost of DOC Rs.	Cost of feed Rs.	Electricity Charges	Veterinary Aid Rs.	Labour Charges Rs.	Litter Rs.	Cost of Maintenance of equipment	Misce Charges Rs.	Total Variab Cost R	
<b>VI 2500-2999</b>											
	37	2500	33125 (29.8)	61500 (55.3)	3000 (2.7)	5000 (4.5)	2400 (2.1)	4000 (3.6)	1200 (1.1)	1000 (0.9)	111225 (100)
	38	2500	33750 (26.9)	74750 (59.6)	1750 (1.4)	5000 (4.0)	2600 (2.1)	5600 (4.5)	1000 (0.8)	1000 (0.8)	125450 (100.1)
	39	2500	31625 (25.80)	74750 (61.1)	1300 (1.0)	3000 (2.5)	3800 (3.1)	4500 (3.7)	1400 (1.1)	2000 (1.6)	122375 (99.9)
	40	2500	31625 (24.7)	80500 (62.9)	1500 (1.2)	5000 (3.9)	2000 (1.6)	5400 (4.2)	1000 (0.8)	1000 (0.8)	128025 (100.1)
<b>VII 3000-4000</b>											
	41	3000	39750 (25.2)	97650 (61.8)	1500 (0.9)	7500 (4.7)	2400 (1.5)	5200 (3.3)	2000 (1.3)	2000 (1.3)	158000 (100)
	42	4000	52000 (32.7)	87500 (55.0)	1400 (0.9)	6000 (3.7)	3000 (1.9)	5100 (3.2)	2200 (1.4)	2000 (1.2)	159200 (100)
<b>VIII 40001-5000</b>											
	43	4500	59625 (27.8)	124312 (58.1)	2000 (0.9)	12500 (5.8)	2100 (1.0)	7200 (3.4)	2200 (1.0)	4000 (2.0)	213937 (100)
	44	5000	63250 (25.3)	161000 (64.4)	1700 (0.7)	10000 (4.0)	2000 (0.8)	7100 (2.8)	1800 (0.7)	3000 (1.2)	249850 (99.9)
	45	5000	65000 (32.2)	109375 (54.1)	1500 (0.7)	12000 (5.9)	3600 (1.8)	6500 (3.2)	2000 (1.0)	2000 (1.0)	201975 (99.9)
	46	5000	65000 (31.0)	109375 (52.2)	1300 (0.6)	20000 (9.5)	2500 (1.2)	7000 (3.3)	2400 (1.2)	2000 (1.0)	209575 (100)
	47	5000	66250 (27.2)	151375 (62.2)	2000 (0.8)	10000 (4.1)	3000 (1.2)	6800 (2.8)	2100 (0.9)	2000 (0.8)	243525 (100)
	48	5000	63250 (26.5)	150500 (63.0)	2000 (0.9)	10000 (4.2)	2000 (0.8)	7000 (2.9)	2000 (0.9)	2000 (0.8)	238750 (100)

Notes : Figures in brackets are percentages to total variable cost.



### APPENDIX A.4.3

#### Fixed Cost

Category	Flock Size Number	Total Cost of purchasing DOC Rs.	Cost of Construction of Shed Rs.	Cost of Rs.	
<b>I 50-499</b>					
	1	50	650	4500	500
	2	200	2530	16000	1500
	3	200	2530	20000	1200
	4	200	2530	16000	1000
	5	400	5300	15000	2000
<b>II 500-999</b>					
	6	500	6000	30000	1000
	7	500	6625	25500	1000
	8	500	6575	40000	1500
	9	500	6575	40000	1200
	10	500	6075	26500	1000
	11	500	6325	30000	1000
	12	500	6325	45000	2000
	13	500	6575	45000	2000
	14	500	6075	25000	2000
	15	600	7890	24000	1900
	16	600	7920	30000	2000
	17	600	7950	40000	2000
	18	700	9205	50000	1500

(Contd.)

Category	Flock Size Number	Total Cost of purchasing DOC Rs.	Cost of Construction of Shed Rs.	Cost of equipment Rs.	
<b>III</b>					
<b>1000-1499</b>					
	19	1000	13150	35000	1500
	20	1000	12350	40000	1700
	21	1000	13000	35000	3000
	22	1000	12650	75000	4000
	23	1000	12650	60000	4000
	24	1000	13500	34000	2900
	25	1000	12650	30000	1700
	26	1000	13150	50000	1500
	27	1200	15180	70000	4000
	28	1200	15600	65000	2200
	29	1200	15180	65000	3000
	30	1200	15000	60000	3000
	31	1250	16875	60000	3000
	32	1300	16445	60000	3000
<b>IV</b>					
<b>1500-1999</b>					
	33	1500	18975	60000	10000
	34	1700	21165	60000	10000
<b>V</b>					
<b>2000-2499</b>					
	35	2000	26500	90000	10000
	36	2000	26000	60000	10000

(Contd.)

Category	Flock Size Number	Total Cost of Purchasing DOC Rs.	Cost of Construction of Shed Rs.	Cost of Equipment Rs.	
<b>VI</b>					
<b>2500-2999</b>					
	37	2500	33125	95000	12000
	38	2500	33125	120000	7000
	39	2500	31625	95000	8000
	40	2500	31625	90000	7000
<b>VII</b>					
<b>3000-4000</b>					
	41	3000	39750	240000	6000
	42	4000	52000	250000	5000
<b>VIII</b>					
<b>40001-5000</b>					
	43	4500	59625	200000	10000
	44	5000	63250	175000	17000
	45	5000	65000	200000	14000
	46	5000	65000	400000	18000
	47	5000	66250	300000	10000
	48	5000	63250	200000	10000

## APPENDIX A.4.4

## Fixed Cost (Total and Per Bird)

(Rs.)

Category	Flock Size Number	Depreciation on Shed		Depreciation on equipment		Interest on capital		Fixed Cost	
		Total	Per bird	Total	Per bird	Total	Per bird	Total for one batch	Per bird for one batch
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
I 50-499									
1	50	60.3 (28.1)	1.21 (28.1)	20 (9.3)	0.40 (9.3)	135.6 (62.8)	2.7 (62.6)	215.9 (100)	4.31 (100)
2	200	214.4 (28.4)	1.07 (28.4)	60 (8.0)	0.30 (8.0)	480 (63.6)	2.4 (63.6)	754.4 (100)	3.77 (100)
3	200	268 (31.1)	1.34 (31.1)	48 (5.6)	0.24 (5.6)	545.6 (63.3)	2.73 (63.3)	861.6 (100)	4.31 (100)
4	200	214.4 (29.7)	1.07 (29.7)	40 (5.5)	0.20 (5.5)	468.8 (64.8)	2.34 (64.8)	723.2 (100)	3.61 (100)
5	400	201 (24.6)	0.50 (24.5)	80 (9.8)	0.20 (9.8)	535.2 (65.6)	1.34 (65.7)	816.2 (100)	2.04 (100)
Avg Cost per bird			1.03		0.23		2.3		3.61
II 500-999									
6	500	402 (30.2)	0.80 (30.2)	40 (3.0)	0.08 (3.0)	888 (66.8)	1.78 (66.8)	1330 (100)	2.66 (100)
7	500	341.8 (29.0)	0.68 (29.9)	40 (3.4)	0.08 (3.4)	795 (67.6)	1.59 (67.7)	1176.8 (100)	2.35 (100)
8	500	536 (30.6)	1.07 (30.6)	60 (3.4)	0.12 (3.4)	1154 (66.0)	2.31 (66.0)	1750 (100)	3.5 (100)
9	500	536 (30.9)	1.07 (30.9)	48 (2.8)	0.09 (2.6)	1147 (66.3)	2.30 (66.5)	1731 (100)	3.46 (100)
10	500	355.2 (29.6)	0.71 (29.6)	40 (3.3)	0.08 (3.3)	806 (67.1)	1.61 (67.1)	1201.2 (100)	2.40 (100)
11	500	402 (30.0)	0.80 (30.0)	40 (3.0)	0.08 (3.0)	896 (67.0)	1.79 (67.0)	1338 (100)	2.68 (100)
12	500	603 (30.7)	1.21 (30.8)	80 (4.1)	0.16 (4.1)	1280 (65.2)	2.56 (65.1)	1963 (100)	3.93 (100)
13	500	603 (30.6)	1.21 (30.6)	80 (4.1)	0.16 (4.1)	1286 (65.3)	2.58 (65.3)	1969 (100)	3.95 (100)
14	500	335 (27.7)	0.67 (27.7)	80 (6.6)	0.16 (6.6)	794 (65.7)	1.59 (65.7)	1209 (100)	2.42 (100)
15	600	321.6 (26.6)	0.53 (26.6)	76 (6.3)	0.15 (7.4)	811 (67.1)	1.35 (66.5)	1208.6 (100)	2.03 (100)
16	600	402 (27.9)	0.67 (27.9)	80 (5.6)	0.13 (5.4)	958 (66.5)	1.60 (66.7)	1440 (100)	2.40 (100)
17	600	536 (29.5)	0.89 (29.5)	80 (4.4)	0.13 (4.3)	1199 (66.1)	2.00 (66.2)	1815 (100)	3.02 (100)
18	700	670 (30.6)	0.96 (30.7)	60 (2.8)	0.08 (2.6)	1457 (66.6)	2.08 (66.7)	2187 (100)	3.12 (100)
Avg Cost per bird			0.86		0.11		1.93		2.9

.. Note : Figures in brackets are percentage to total fixed cost.

(Contd.)

Fixed Costs  
(Rs.)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>III 1000-1499</b>										
19	1000	469	0.47	60	0.06	1192	1.19	1721	1.72	
		(27.2)	(27.3)	(3.5)	(3.5)	(69.3)	(69.2)	(100)	(100)	
20	1000	536	0.54	68	0.07	1297	1.30	1901	1.91	
		(28.2)	(28.3)	(3.6)	(3.7)	(68.2)	(68.0)	(100)	(100)	
21	1000	469	0.47	120	0.12	1224	1.22	1813	1.81	
		(25.9)	(26.0)	(6.6)	(6.6)	(67.5)	(67.4)	(100)	(100)	
22	1000	1005	1.01	160	0.16	2200	2.20	3365	3.37	
		(29.9)	(30.0)	(4.7)	(4.7)	(65.4)	(65.3)	(100)	(100)	
23	1000	804	0.80	160	0.16	1840	1.84	2804	2.80	
		(28.7)	(28.6)	(5.7)	(5.7)	(65.6)	(65.7)	(100)	(100)	
24	1000	455.6	0.46	116	0.12	1210	1.21	1781.6	1.79	
		(25.6)	(25.7)	(6.5)	(6.7)	(67.9)	(67.6)	(100)	(100)	
25	1000	402	0.40	68	0.07	1064	1.06	1534	1.53	
		(26.2)	(26.1)	(4.4)	(4.6)	(69.4)	(69.3)	(100)	(100)	
26	1000	670	0.67	60	0.06	1552	1.55	2282	2.28	
		(29.4)	(29.4)	(2.6)	(2.6)	(68.0)	(68.0)	(100)	(100)	
27	1200	938	0.78	160	0.13	2140	1.78	3238	2.69	
		(29.0)	(29.0)	(4.9)	(4.8)	(66.1)	(66.2)	(100)	(100)	
28	1200	871	0.72	88	0.07	1987	1.66	2946	2.45	
		(29.6)	(29.4)	(3.0)	(2.8)	(67.4)	(67.8)	(100)	(100)	
29	1200	871	0.72	120	0.10	1994	1.67	2985	2.49	
		(29.2)	(28.9)	(4.0)	(4.0)	(66.8)	(67.1)	(100)	(100)	
30	1200	804	0.67	120	0.10	1872	1.56	2796	2.33	
		(28.7)	(28.7)	(4.3)	(4.3)	(67.0)	(67.0)	(100)	(100)	
31	1250	804	0.64	120	0.10	1917	1.53	2841	2.27	
		(28.3)	(28.2)	(4.2)	(4.4)	(67.5)	(67.4)	(100)	(100)	
32	1300	804	0.62	120	0.09	1907	1.47	2831	2.18	
		(28.4)	(28.4)	(4.2)	(4.1)	(67.4)	(67.4)	(100)	(99.9)	
Avg Cost per bird			0.64		0.10		1.51		2.23	
<b>IV 1500-1999</b>										
33	1500	804	0.54	400	0.27	2135	1.42	3339	2.23	
		(24.1)	(24.2)	(12.0)	(12.1)	(63.9)	(63.7)	(100)	(100)	
34	1700	804	0.47	400	0.24	2188	1.29	3392	2.00	
		(23.7)	(23.5)	(11.8)	(12.0)	(64.5)	(64.5)	(100)	(100)	
Avg Cost per bird			0.50		0.25		1.35		2.1	
<b>V 2000-2499</b>										
35	2000	1206	0.60	400	0.20	3036	1.52	4642	2.32	
		(26.0)	(25.9)	(8.6)	(8.6)	(65.4)	(65.5)	(100)	(100)	
36	2000	804	0.40	400	0.20	2304	1.15	3508	1.75	
		(22.9)	(22.9)	(11.4)	(11.4)	(65.7)	(65.7)	(100)	(100)	
Avg Cost per bird			0.50		0.20		1.33		2.03	

Note : Figures in brackets are percentage to total fixed cost.

(Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>VI 2500-2999</b>									
37	2500	1273 (24.9)	0.51 (24.9)	480 (9.4)	0.19 (9.3)	3363 (65.7)	1.35 (65.8)	5116 (100)	2.05 (100)
38	2500	1608 (28.0)	0.64 (28.0)	280 (4.9)	0.11 (4.8)	3843 (67.1)	1.54 (67.2)	5731 (100)	2.29 (100)
39	2500	1273 (26.4)	0.51 (26.4)	320 (6.6)	0.13 (6.7)	3231 (67.0)	1.29 (66.9)	4824 (100)	1.93 (100)
40	2500	1206 (26.4)	0.48 (26.4)	280 (6.1)	0.11 (6.0)	3087 (67.5)	1.23 (67.6)	4573 (100)	1.82 (100)
Avg. cost per bird			0.53		0.13		1.35		2.01
<b>VII 3000-4000</b>									
41	3000	3216 (27.7)	1.07 (27.6)	240 (2.1)	0.08 (2.1)	8154 (70.2)	2.72 (70.3)	11610 (100)	3.87 (100)
42	4000	3350 (30.7)	0.84 (30.8)	200 (1.8)	0.05 (1.8)	7368 (67.5)	1.84 (67.4)	10918 (100)	2.73 (100)
Avg. cost per bird			0.95		0.06		2.2		3.2
<b>VIII 4001-5000</b>									
43	4500	2680 (28.2)	0.60 (28.2)	400 (4.2)	0.09 (4.2)	6471 (67.8)	1.44 (67.6)	9551 (100)	2.13 (100)
44	5000	2345 (25.6)	0.47 (25.5)	680 (7.4)	0.14 (7.6)	6126 (67.0)	1.23 (66.9)	9151 (100)	1.84 (100)
45	5000	2680 (27.0)	0.54 (27.1)	560 (5.6)	0.11 (5.5)	6696 (67.4)	1.34 (67.4)	9936 (100)	1.99 (100)
46	5000	5360 (30.3)	1.07 (30.3)	720 (4.1)	0.14 (4.0)	11592 (65.6)	2.32 (65.7)	17672 (100)	3.53 (100)
47	5000	4020 (29.9)	0.80 (29.7)	400 (3.0)	0.08 (3.0)	9030 (67.1)	1.81 (67.3)	13450 (100)	2.69 (100)
48	5000	2680 (27.8)	0.54 (28.0)	400 (4.2)	0.08 (4.1)	6558 (68.0)	1.31 (67.9)	9638 (100)	1.93 (100)
Avg. Cost per bird			0.67		0.11		1.57		2.35

Note : Figures in brackets are percentage to total fixed cost.

Res.  
X9(2351)0a91.2315.Ng  
N8  
245214

## APPENDIX A.4.5

## Gross Receipts Per Broiler Cycle

Category	Flock Size Number	Total Receipts from Sale of bird	Total Receipts from gunny bags	Total receipts from manure	Total Receipts Rs. (3+4+5)	Gross receipts per bird Rs.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>I</b>						
50-499						
1	50	2876.4 (95.48)	36 (1.2)	100 (3.30) 400	3012.4 (100)	60.25
2	200	10830 (95.3) 11400	140 (1.2)	(3.5) 400	11370 (100) 11940 (100)	56.85
3	200	(95.5) 11628	140 (1.2)	(3.3) 400	12168 (100) 22992 (100)	59.70
4	200	(95.6) 21964	140 (1.1)	(3.3) 800		60.84
5	400	(95.5) 228	(1.0) 228	(3.4)		57.48
Avg. gross receipts per bird						59.02
<b>II</b>						
500-999						
6	500	25270 (95.1)	288 (1.1)	1000 (3.8)	26558 (100)	53.12
7	500	28262.5 (95.6)	288 (1.0)	1000 (3.4)	29550.5 (100)	59.10
8	500	30400 (95.9)	288 (0.9)	1000 (3.2)	31688 (100)	63.34
9	500	28500 (95.7)	288 (1.0)	1000 (3.3)	29788 (100)	59.58
10	500	27075 (95.5)	288 (1.0)	1000 (3.5)	28363 (100)	56.73
11	500	28880 (95.7)	288 (1.0)	1000 (3.3)	30168 (100)	60.33
12	500	27075 (95.5)	288 (1.0)	1000 (3.5)	28363 (100)	56.73
13	500	27075 (95.5)	288 (1.0)	1000 (3.5)	28363 (100)	56.73
14	500	28880 (95.7)	288 (1.0)	1000 (3.3)	30168 (100)	60.34
15	600	34884 (95.8)	336 (0.9)	1200 (3.3)	36420 (100)	60.7
16	600	30780 (95.2)	336 (1.0)	1200 (3.7)	32316 (99.9)	53.86
17	600	33345 (95.6)	336 (1.0)	1200 (3.4)	34881 (100) 42228	58.13
18	700	40432 (95.3)	396 (1.0)	1400 (3.7)	(100)	60.33
Avg. gross receipts per bird						58.38

(Contd.)

## Gross Receipts Per Broiler Cycle

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>III</b>							
<b>1000-1499</b>							
19	1000	60800	564	2000	63364	63.36	
		(96.0)	(0.9)	(3.1)	(100)		
20	1000	51300	564	2000	53864	53.86	
		(95.3)	(1.0)	(3.7)	(100)		
21	1000	60800	564	2000	63364	63.36	
		(96.0)	(0.9)	(3.1)	(100)		
22	1000	64600	564	2000	67164	67.16	
		(96.2)	(0.8)	(3.0)	(100)		
23	1000	49875	564	2000	52439	52.44	
		(95.1)	(1.1)	(3.8)	(100)		
24	1000	56525	564	2000	59089	59.09	
		(95.7)	(0.9)	(3.4)	(100)		
25	1000	45220	564	2000	47784	47.78	
		(94.6)	(1.2)	(4.2)	(100)		
26	1000	50540	564	2000	53104	53.10	
		(95.2)	(1.1)	(3.7)	(100)		
27	1200	68400	672	2400	71472	59.56	
		(95.7)	(0.9)	(3.4)	(100)		
28	1200	72960	672	2400	76032	63.36	
		(96.0)	(0.9)	(3.1)	(100)		
29	1200	68400	672	2400	71472	59.56	
		(95.7)	(0.9)	(3.4)	(100)		
30	1200	73644	672	2400	76716	63.93	
		(96.0)	(0.9)	(3.1)	(100)		
31	1250	72230.4	696	2500	75426.4	60.34	
		(95.8)	(0.9)	(3.3)	(100)		
32	1300	74100	792	2600	77492	59.61	
		(95.6)	(1.0)	(3.4)	(100)		
Avg. gross receipts							59.04
<b>IV</b>							
<b>1500-1999</b>							
33	1500	86640	840	3000	90480	60.32	
		(95.8)	(0.9)	(3.3)	(100)		
34	1700	103360	948	3400	107708	63.35	
		(96.0)	(0.9)	(3.1)	(100)		
Avg. gross receipts							61.84
<b>V</b>							
<b>2000-2499</b>							
35	2000	121600	1116	4000	126716	63.36	
		(96.0)	(0.9)	(3.1)	(100)		
36	2000	101080	1116	4000	106196	53.10	
		(95.2)	(1.0)	(3.8)	(100)		
Avg. gross receipts							58.23

(Contd.)



## Gross Receipts Per Broiler Cycle

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>VI</b>							
<b>2500-2999</b>							
	37	2500	135375 (95.5)	1404 (0.99)	5000 (3.5)	141779 (100)	56.71
	38	2500	142500 (95.7)	1404 (0.94)	5000 (3.3)	148904 (100)	59.56
	39	2500	119700 (94.92)	1404 (1.1)	5000 (3.9)	126104 (100)	50.44
	40	2500	131812 (95.37)	1404 (1.01)	5000 (3.62)	138216.5 (100)	55.29
	Avg gross receipts						55.5
<b>VII</b>							
<b>3000-4000</b>							
	41	3000	171000 (95.7)	1680 (0.9)	6000 (3.4)	178680 (100)	59.56
	42	4000	216600 (95.5)	2244 (1.0)	8000 (3.5)	226844 (100)	56.71
	Avg gross receipts						58.13
<b>VIII</b>							
<b>4001-5000</b>							
	43	4500	239400 (95.4)	2520 (1.0)	9000 (3.6)	250920 (100)	55.76
	44	5000	288800 (95.8)	2796 (0.9)	10000 (3.3)	301596 (100)	60.32
	45	5000	249375 (95.1)	2796 (1.1)	10000 (3.8)	262171 (100)	52.43
	46	5000	242250 (95.0)	2796 (1.1)	10000 (3.9)	255046 (100)	51.01
	47	5000	285000 (95.7)	2796 (0.9)	10000 (3.4)	297796 (100)	59.56
	48	5000	285000 (95.7)	2796 (0.9)	10000 (3.4)	297796 (100)	59.55
	Avg gross receipts						56.44

Note : Figures in brackets are percentages to total receipts.

## APPENDIX A.4.6

Per Bird Per Cycle, Variable Cost, Fixed Cost, Gross Receipts and Net Profit (Rs.)

Category	Flock Size	Variable Cost per bird	Fixed Cost per bird	Total Cost per bird	Gross Receipts per bird	Net Profit	Variable Cost as a percentage of Total Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
I	1	50	66.60	4.31	70.91	60.25	-10.66	93.92
	2	200	51.07	3.77	54.84	56.85	2.01	93.12
	3	200	45.27	4.31	49.58	59.7	10.12	91.30
	4	200	57.15	3.61	60.76	60.84	0.08	96.55
	5	400	43.62	2.04	45.66	57.48	11.82	95.53
	Avg. of 50-499		52.74	3.6	56.34	59.02	2.68	94.11
II	6	500	44.82	2.66	47.48	53.12	5.64	94.40
	7	500	49.05	2.35	51.40	59.10	7.70	95.43
	8	500	48.20	3.50	51.70	63.34	11.64	93.23
	9	500	46.30	3.50	49.80	59.58	9.78	92.97
	10	500	45.80	2.40	48.20	56.73	8.53	95.02
	11	500	44.95	2.68	47.63	60.33	12.70	94.37
	12	500	49.55	3.93	53.48	56.73	3.25	92.65
	13	500	51.35	3.94	55.29	56.73	1.44	92.87
	14	500	46.95	2.42	49.37	60.34	10.97	95.10
	15	600	48.61	2.01	50.62	60.7	10.08	96.02
	16	600	44.38	2.40	46.78	53.86	7.08	94.87
	17	600	43.20	3.02	46.22	58.13	11.91	93.46
	18	700	53.60	3.12	56.72	60.33	3.61	94.00
	Avg. of 500-999		47.22	2.90	50.12	58.38	8.26	94.24

(Contd.)

## Per Bird Per Cycle, Variable Cost, Fixed Cost, Gross Receipts and Net Profit (Rs.)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
III 19		1000	40.00	1.72	41.72	63.36	21.64	95.88
20		1000	40.65	1.91	42.56	53.86	11.30	95.53
21		1000	47.65	1.81	49.46	63.36	13.90	96.34
22		1000	45.10	3.37	48.47	67.16	18.69	93.76
23		1000	44.60	2.80	47.40	52.44	5.04	94.09
24		1000	54.00	1.79	55.79	59.09	3.30	96.80
25		1000	47.15	1.53	48.68	47.78	-0.90	96.85
26		1000	46.91	2.28	49.19	53.10	3.91	95.34
27		1200	44.02	2.69	46.71	59.56	12.85	94.22
28		1200	42.52	2.45	44.97	63.36	18.39	94.53
29		1200	44.48	2.49	46.97	59.56	12.59	94.69
30		1200	48.60	2.33	50.93	63.93	13.00	95.42
31		1250	42.99	2.27	45.26	60.34	15.08	94.98
32		1300	48.03	2.18	50.21	59.61	9.40	95.65
			45.47	2.2	47.7	59.04	11.34	95.32
Avg. of 1000-1499								
IV 33		1500	48.37	2.23	50.60	60.32	9.72	95.12
34		1700	48.46	2.00	50.46	63.35	12.89	96.03
			48.42	2.10	50.52	61.84	11.32	95.84
Avg. of 1500-1999								
V 35		2000	49.18	2.32	51.50	63.36	11.86	95.65
36		2000	40.62	1.75	42.37	53.10	10.73	95.89
			44.88	2.03	46.91	58.23	11.32	95.68
Avg. of 2000-2499								

(Contd.)

## Per Bird Per Cycle, Variable Cost, Fixed Cost, Gross Receipts and Net Profit (Rs.)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VI 37		2500	44.49	2.05	46.54	56.71	10.17	95.60
38		2500	50.18	2.29	52.47	59.56	7.09	95.64
39		2500	48.95	1.93	50.88	50.44	-0.44	96.21
40		2500	51.21	1.82	53.03	55.29	2.26	96.57
			48.71	2.01	50.72	55.5	4.78	96.02
	Avg. of 2500-2999							
VII 41		3000	52.66	3.87	56.53	59.56	3.03	93.15
42		4000	39.80	2.73	42.53	56.71	14.18	93.58
			46.2	3.21	49.41	58.13	8.72	93.34
	Avg. of 3000-4000							
VIII 43		4500	47.54	2.13	49.67	55.76	6.09	95.53
44		5000	49.97	1.84	51.81	60.32	8.51	96.47
45		5000	40.39	1.99	42.38	52.43	10.05	95.30
46		5000	41.91	3.53	45.44	51.01	5.57	92.23
47		5000	48.70	2.69	51.39	59.56	8.17	94.77
48		5000	47.75	1.93	49.68	59.55	9.87	96.11
			45.98	2.35	48.33	56.44	8.11	95.14
	Avg. of 4001-5000							

## APPENDIX A.4.7

## Cost of Production per Kg. of Broiler

Category	Flock Size	Total cost per bird (Rs)	Income from manure & gunny bags (Rs)	Weight of bird (kg)	Cost of production per kg broiler (Rs)	Sale Price of broiler per kg (Rs)	
I	1	50	70.91	2.72	1.7	40.11	36
	2	200	54.84	2.70	1.5	34.76	38
	3	200	49.58	2.70	1.5	31.25	40
	4	200	60.76	2.70	1.7	34.15	36
	5	400	45.66	2.57	1.7	25.35	34
	Avg. of 50-499		56.34	2.7	1.62	33.11	36.8
II	6	500	47.48	2.46	1.4	32.16	38
	7	500	51.40	2.46	1.7	28.79	35
	8	500	51.70	2.46	1.6	30.77	40
	9	500	49.80	2.46	1.5	31.56	40
	10	500	48.20	2.46	1.5	30.49	38
	11	500	47.63	2.46	1.6	28.23	38
	12	500	53.48	2.46	1.5	34.01	38
	13	500	55.29	2.46	1.5	35.22	38
	14	500	49.37	2.46	1.6	29.32	38
	15	600	50.62	2.56	1.7	28.27	36
	16	600	46.78	2.56	1.5	29.48	36
	17	600	46.22	2.56	1.5	29.11	39
	18	700	56.72	2.57	1.6	33.84	38
Avg. of 500-999		50.12	2.5	1.55	30.72	37.84	
III	19	1000	41.72	2.56	1.6	24.48	40
	20	1000	42.56	2.56	1.5	26.67	36
	21	1000	49.46	2.56	1.6	29.31	40
	22	1000	48.47	2.56	1.7	27.01	40
	23	1000	47.40	2.56	1.5	29.89	35
	24	1000	55.79	2.56	1.7	31.31	35
	25	1000	48.68	2.56	1.4	32.94	34
	26	1000	49.19	2.56	1.4	33.31	38
	27	1200	46.71	2.56	1.5	29.43	40
	28	1200	44.97	2.56	1.6	26.51	40
	29	1200	46.97	2.56	1.5	29.61	40
	30	1200	50.93	2.56	1.7	28.45	38
	31	1250	45.26	2.56	1.6	26.69	38
	32	1300	50.21	2.61	1.5	31.73	40
Avg. of 1000-1999		47.7	2.56	1.55	29.12	38.14	
IV	33	1500	50.60	2.56	1.6	30.03	38
	34	1700	50.46	2.56	1.6	29.94	40
	Avg. of 1500-1999		50.52	2.56	1.6	29.98	39
V	35	2000	51.50	2.56	1.6	30.59	40
	36	2000	42.37	2.56	1.6	24.88	38
	Avg. of 2000-2499		46.91	2.56	1.6	27.72	39

(Contd.)

## Cost of Production per Kg. of Broiler

Category	Flock Size	Total cost per bird (Rs)	Income from manure & gunny bags (Rs)	Weight of bird (kg)	Cost of production per kg broiler (Rs)	Sale Price of broiler per kg (Rs)
VI 37	2500	46.54	2.56	1.5	29.32	38
38	2500	52.47	2.56	1.5	33.27	40
39	2500	50.88	2.56	1.4	34.51	36
40	2500	53.03	2.56	1.5	33.65	37
Avg. of 2500-2999		50.72	2.56	1.47	32.76	37.75
VII 41	3000	56.53	2.56	1.5	35.98	40
42	4000	42.53	2.56	1.5	26.65	38
Avg. of 3000-4000		49.41	2.56	1.5	31.23	39
VIII 43	4500	49.67	2.56	1.6	29.44	35
44	5000	51.81	2.56	1.6	30.78	38
45	5000	42.38	2.56	1.5	26.55	35
46	5000	45.44	2.56	1.5	28.59	34
47	5000	51.39	2.56	1.5	32.55	40
48	5000	49.68	2.56	1.5	31.41	40
Avg. of 4001-5000		48.33	2.56	1.53	29.91	37

## **Chapter V**

### **Economics of Layer Farming**

We have already discussed in Chapter II, that out of the total layer population in Maharashtra, as revealed in the 1992 Livestock Census, 72.5 percent constitute deshi layers, while only 27.5 constitute improved varieties. The share of deshi layers is therefore pre-dominant in the total layer population. However, the share of improved varieties is gradually gaining importance, if we consider that in 1961, layer population of improved varieties constituted only 1.68 percent of total layers and hence poultry farming for the purpose of egg production came only from deshi birds. However, since 1961, the share of improved varieties is slowly making a way for egg production. As we already know, the laying percentage in case of improved varieties is far higher than that of deshi breeds and while improved layers have a laying percentage of 72.13, in case of deshi birds, the laying percentage is 30 percent.

#### **5-1 Egg production from deshi layers:**

For a long time to come, the traditional sector (where deshi layers are used for egg production) is likely to represent the largest part of poultry production. This would be so, despite their very poor level of performance as regards laying and growth.

The traditional sector is mostly maintained at the backyard of the farmer and in this form of production, the farmer maintains small flocks that wander freely, scavenging for their food and also some home grown inputs. They lay a few eggs, and these are smaller in size than eggs from the commercial sector. The expenditure involved in rearing these birds is virtually nil, and hence the sale of these eggs entails a net income to the family. In many developing countries, this system is still responsible for a large

proportion of the eggs that are produced. Infact, in China, the largest egg producing country in the world, 80 percent of the birds belong to local breeds and only 20 percent are improved breeds. The `local breeds yield just about 120 eggs but yet have relevance in the present day in view of the subsidiary income and employment opportunities that they generate to the rural farm sector.

The overall conclusion seems to be that deshi birds are playing a dominant role in egg production and the cost involved in rearing them is negligible. This is because the birds do not feed on concentrated feed formulations, nor are they vaccinated against any diseases. The eggs produced by these birds, although smaller in size and fewer in number, generate a net income to the layer farmer. No wonder rural poultry is here to stay.

## **5.2 Egg production from commercial and semi-commercial farms:**

While deshi layers are contributing to egg production in their own way, improved varieties such as White Leghorn, Australorp, Rhode Islands Red etc. are often maintained in commercial farms for higher egg production. In case of these breeds, the birds cannot fend for themselves and feed cannot be confined to home grown inputs. These birds require well formulated and concentrated nutritional feeds at regular intervals, without which they would record a drop in egg production. Further, these birds have to also be vaccinated for disease protection. Infact, layers have a vaccination schedule, where the birds, like broilers are vaccinated for Marek's disease immediately at the day old stage. Besides, vaccination schedule upto 16-18 weeks has to be administered, failing which, the birds are likely to get infected and there would be a drop in egg production. Infact, it could also lead to mortality. Any drop in egg production, can adversely affect the



economics of commercial poultry operation. Besides nutritional balance in feed and disease protection, other practises such as adequate lighting, debeaking, culling and sanitary measures should be administered. Scientific management would improve layer performance and contribute to increase in egg production. Any increase in egg production would obviously increase the profitability of the farm.

#### **5.2.1 Economic viability of layer farms:**

As we already mentioned in chapter III, our study was confined to Mawal taluka in Pune district. In this taluka, we were unable to find any layer farms in the unorganized sector. The Livestock census of 1992 indicated that 70 percent of the chicks (below 5 months) for egg purposes were deshi birds whereas 99.8 percent of the chicks for meat purposes were improved varieties. Possibly, this could be the reason for the availability of broiler samples, which were more easily obtained as to the virtual non-availability of layer farms.

However, during the field visit we came across a big layer farmer maintaining a flock of as much as 1 lakh layers of improved varieties. This farm ofcourse belonged to the organized sector. The study of organized sector farms is not the main theme of our study, but nevertheless we collected the information available from this farm. The study of the economics of layer farms in the organized sector could help us to understand its viability and also the problems faced by these farms. This would enable us to understand the difficulties that would occur to small farmers in the unorganized sector and hence the reasons why they shy away from layer farming. Layer farming for the small farmers is therefore restricted quite often to deshi birds as rearing of these birds requires no scientific management.

Layers have a long cycle of about 17 months, and a female chick reaches maturity at 20 weeks after which it is termed as a hen and begins to lay eggs for a period of one year. During this period, on an average, an improved layer lays around 264 eggs, although this figure is subject to fluctuations. At times a layer can lay as much as 327 eggs during the laying period, while at times, layers lay below their average performance level. The laying percentage also fluctuates with the season as the birds perform better in winter. In summer, the birds are prone to stress and this may result in a fall in egg production. Egg production may also drop due to disease in the bird or any nutritional imbalance in the feed.

In Table 5.1 we have made an attempt to study the economics of a layer farm (in Mawal taluka). This farm as already mentioned was a big farm with a layer capacity of 1 lakh birds. The birds were reared in the cage system. The layer farm was set up in 1971 and the owner who inherited the layer farm was not on an optimistic note. This is perhaps revealed by the data in Table 5.1. We collected the data for the most recent completed layer cycle in June 1997.

From the table, it can be observed, that out of total variable costs, feed costs were the major item. While chick and grower mash constituted 16 percent of the variable cost, the feed cost at the laying stage was the largest single factor, in the total variable cost and formed 74 percent. During the laying stage, the layers consume 42 kg. of feed, (roughly 125 grams per day) but their consumption at the chick stage i.e. (below 20 weeks) is 9 kg.

Further, out of total cost, variable cost formed 98.3 percent. The fixed cost was barely 1.73 percent of total cost.

The laying capacity of the layer was 265 eggs during the laying period. These eggs were sold to traders at a price which was 5 percent lower than the rate set by the National Egg Co-ordination Committee (NECC). This was to compensate the trader for his transport cost. The NECC fixes the prices of eggs daily and producers sell eggs at these prices to traders. In the sample farm, the price at which the eggs were sold were Rs1.17 and 86 percent of the gross receipts were obtained from eggs.

**Table 5.1 : Cost of Rearing Layers ( Variable and Fixed Cost ), Gross Receipts and Net Income, Per Layer, Per Cycle (Rs)**

<b>1</b>	<b>VARIABLE COSTS:</b>	
<b>a</b>	Cost of Day old chick	15.00
<b>b</b>	Chick mash & grower mash (Rs 6.5 per kg *9kg )	58.50
<b>c</b>	Cost of feed at laying stage (Rs 6.25 per kg *42 kg )	262.50
<b>d</b>	Electricity	3.06
<b>e</b>	Vaccination and medical aid	3.00
<b>f</b>	Debeaking	0.50
<b>g</b>	Labour	7.65
<b>h</b>	Maintainance cost	5.00
	<b>TOTAL VARIABLE COST</b>	<b>355.21</b>
<b>2</b>	<b>FIXED COST:</b>	
<b>a</b>	Interest on capital	3.4
<b>b</b>	Depreciation on equipment	1.04
<b>c</b>	Depreciation on shed	1.84
	<b>TOTAL FIXED COST</b>	<b>6.28</b>
<b>3</b>	<b>TOTAL VARIABLE + FIXED COST i.e. TOTAL COST</b>	<b>361.49</b>
<b>4</b>	<b>GROSS RECEIPTS</b>	
<b>a</b>	Sale of eggs (265 eggs per layer per cycle sold at Rs 1.17 per egg )	310.05
<b>b</b>	Sale of culled birds	30
<b>c</b>	Sale of manure	14.16
<b>d</b>	Sale of gunny bags	8.00
	<b>TOTAL INCOME</b>	<b>362.21</b>
<b>5</b>	<b>NET INCOME ( 4-3 )</b>	<b>0.72</b>

Once the bird's egg laying capacity is saturated, it is sold as a culled bird at the rate of Rs 30 per bird. This rate ofcourse fluctuates and attimes fetches a higher price. The demand for these culled birds is mostly from hotels, and they require excessive heating for cooking as they are not tender meat.

Again, as in the case of broilers, manure is a by-product of poultry farming and the manure obtained from each bird fetches Rs 14. The gunny bag in which the feed is purchased also have a resale price which is a marginal income to the poultry farmer.

The overall analysis however shows that the net income per layer, per cycle is even less than a rupee and amounts to Rs 0.72 paise. The net income over variable cost is however Rs.7 per layer. The study on layer farming thus reveals that the farmer had a very low profit margin. This was so, even when the farmer reported that his feed cost was Rs 6.5 per kg as against the normal cost of Rs 8 per kg. As we have already observed, feed is the main element of cost in egg production. Large farmers often prepare their own feed, and hence reduce its cost. They purchase the necessary feed ingredients in bulk ( especially maize ) immediately after post-harvest period, when prices are low and at times they also have their own feed mixing units. They can therefore reduce the cost of feed and also monitor the quality of feed ingredients. The main source of income to the farmer was ofcourse from eggs, which again have fluctuating prices. The prices of eggs are determined mainly by "supply and demand" situations which keep on changing. The prices tend to drop in summer or during religious festivals when there is less demand. Any favourable turn in prices could increase his profits provided there is no simultaneous increase in feed costs. Again, the farmer earns income from the sale of culled birds. The prices of these birds are subject to fluctuations and range between Rs 30 to Rs 40 per

bird. Our sample farmer reported that he had sold the culled bird for Rs 30 per piece. Any rise in the price could increase the profitability.

### **5.2.2 Cost of production per egg:**

The cost of production per egg ,was arrived at, by deducting the income from culled birds,manure and gunny bags from the total cost per bird. This figure was then divided by the number of eggs produced per bird.

In case of our sample farmer we can therefore calculate the cost of production per egg:

- a) Total cost per bird: Rs 361.49
- b) Income from manure, culls,and gunny bags: Rs 52.61
- c) Number of eggs per layer:265
- d) Cost of production per egg: Rs1.16

The cost of producing an egg worked out to be Rs1.16 and as we observed the sale price of each egg was Rs 1.17. Thus there was virtually no benefit in producing eggs for the layer farmer.

### **5.3 Layer farming: A Re-view of Literature:**

The data we analysed on layer farming was related to only one farm. Naturally, conclusions drawn on the basis of one farm cannot be readily accepted. Hence, since there were no more sample farms which we could study, a brief re-view of literature highlighting the important findings of layer farms was undertaken.

NABARD had conducted a number of studies in different parts of the country to study the economic viability of layer farms. The findings of these studies could perhaps help to strengthen our conclusions.

The study related to Andhra Pradesh ( Krishna district)<sup>i</sup>, showed that only 38 out of the 65 sample units showed positive returns while the remaining 27 made losses. The study suggested that taking all 65 sample units together, the units experienced a negligible net revenue of Rs 0.21 paise per layer , per cycle. These results are in tune with our findings, which indicate that layer farmers have negligible returns. The study also showed that units with more than 1500 layers showed better returns as they experienced higher egg production, longer egg laying period and lower mortality of birds. This perhaps suggests that bigger units had better management.

The NABARD study related to Madhya Pradesh <sup>ii</sup> (Indore district), indicated that all 20 units which it observed, showed profits. Feed costs were lower in case of large farmers as they made large purchases of important feed ingredients such as maize, immediately after the harvest period. This reduced their cost of production and hence increased their profits. The study concluded that layer poultry farming is a viable activity.

In Pune district of Maharashtra<sup>iii</sup>, the NABARD study observed that 5 units out of 32 were incurring losses. The units incurred losses due to low yield of eggs, higher rate of mortality and poor quality of birds. In poultry farming, although one has to economise on costs, selection of good breeds that will perform well is important even though they may cost more. The study in Tamil Nadu<sup>iv</sup> again showed that there were loss making units and some were viable only at the margin. The overall conclusions of the study were that there was uncertainty and risk involved in poultry farming.

The NABARD study in Gujarat<sup>v</sup> indicated that while all units could cover their variable costs, some were not able to cover total costs. The losses were due to the fact that the laying percentage of birds was low, feed was purchased from commercial feed

manufacturers at a higher price and poor management. However, viable units received as much as Rs18.70 per layer cycle.

Besides, the NABARD studies, a couple of other studies such as one by IIM Ahmedabad,<sup>vi</sup> and another by Bank of India<sup>vii</sup> studied layer farming. Both the studies noted that poultry farming is a viable business and the IIM study advocated it as a subsidiary occupation to supplement incomes of the rural poor.

Thus various studies showed different findings, mainly because many factors influence the commercial viability of a poultry farm.

#### **5.4 Conclusions:**

To recapitulate, the main findings of our study indicate that economic viability of layer farming depends on various factors. In a nutshell, the profitability of layer farms depends upon cost of production, sale price of eggs and other by products and also on scientific management of farms.

As we have already observed , out of the total cost of production, the feed cost constitutes the single biggest element in poultry farming (around 90 percent), the balance being the procurement of chicks, labour, medical aid, and miscellaneous expenses. Naturally, any saving on feed account would lower the cost of production. However, no compromise should be made on quality of feed. Feed quality has a very important role to play in the laying percentage of the bird and standard formulations containing energy sources, protein sources, minerals and vitamins are expected to give a hen housed production of around 290 eggs, with consumption of 40 kg in 52 weeks. Hence, any reduction in quality is likely to reduce the laying percentage of the bird and every drop in egg production would reduce the profitability of the layer farm. The farmer, therefore in

his attempt to economise on feed costs should not affect the quality of feed formulations. However, large farmers do have an advantage in reducing feed costs. They purchase ingredients economically and in bulk, soon after harvest when prices are low and prepare the feeds in the farm with the help of nutritionists. Bulk purchases at low prices help the farmer to lower the feed cost. Infact, the NABARD study in Indore district showed that economies of scale were enjoyed by the large farmers, particularly in the cost of poultry feeds, where they saved roughly about 10 to 15 percent over readymade feed formulations. This helped to increase their profitability.

Again the commercial viability of the layer farm depends largely upon the sale price of eggs. The price of eggs which are fixed on a daily basis by the NECC are determined chiefly by the market forces. The demand and supply as we know are subject to fluctuations. In summer the price of eggs tend to come down due to seasonal fall in demand. In hot climates the heat stress has a depressive effect on feed consumption. The reduced feed intake adversely affects optimal egg production and further erodes profitability. Finally, the feed prices also tend to rule high as the primary ingredient of poultry feed i.e. maize and soya are agriculture based and summer being a lean season, the prices of these ingredients tend to shoot up. Again, due to heat stress, the poultry farmer may also face mortality of birds which not only terminates egg production but also reduces his income from the sale of culled birds. Income from culled birds also improves the profitability of poultry farms. The prices of culled birds are also subject to fluctuations and any favourable turn in their prices increases the farmers income.

Besides feed prices and sale price of eggs and culls, proper scientific management , goes a long way in making a poultry unit commercially viable. A good strain that will



perform well must be selected although it may cost more. There must be ample fresh air, proper lighting arrangements in the shed and overcrowding must be avoided. If birds are not fed adequately, they will record a drop in egg production and at the same time feed wastage must be avoided. Vaccination and debeaking must be administered and unsuitable birds should be culled. External parasites should be kept out of the farm. If poultry farming is not done in a scientific manner, it could lead to the out-break of disease and result in a low profit-high risk venture.

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<sup>i</sup> NABARD- "Commercial Poultry in Krishna District", Andhra Pradesh, Economic analysis and publications department, Bombay 1986.

<sup>ii</sup> NABARD, "Commercial Layer Poultry Development in Indore District, Bhopal, (Regional Office), 1992.

<sup>iii</sup> NABARD- "Poultry Development in Pune District", Pune, (Regional Office), Maharashtra, 1991.

<sup>iv</sup> NABARD- "Poultry Development in Salem District of Tamil Nadu- An Ex-Post Evaluation", Madras (Regional Office), 1988.

<sup>v</sup> NABARD- "Poultry Development Schemes in Gujarat -An Ex-Post Evaluation", 1988.

<sup>vi</sup> D.P. Mathur and Gupta, "Management in Small Poultry Farms, (IIM Ahmedabad, Centre for Management in Agriculture).

<sup>vii</sup> Bank of India, Monitoring and Evaluation Division- "Economic Analysis of Poultry Farming in Andhra Pradesh".

## **CHAPTER VI**

### **Summary and Conclusions**

The prime objective of India's Agricultural Price Policy has always been to achieve self-sufficiency in foodgrains, so as to ensure food security to its teeming millions. However, while foodgrains fulfil the basic need of feeding the population, focus must also be directed on quality diet, by enhancing the intake of animal proteins such as eggs and meat. While the Indian Council of Medical Research recommends an annual consumption, per person of 180 eggs and 11 kg. meat the actual consumption is way below this requirement. The per capita, per annum consumption (availability) of eggs is less than 30 eggs while in the case of poultry meat, it is barely half a kilogram. All this only goes to say that the poultry sector has an important role to play in balancing the protein requirements of human diet.

Besides poultry farming is also an integral part of our agricultural economy and contributes towards rural development. Income from eggs and meat can be the main source of family income or can provide subsidiary income and gainful employment to farmers throughout the year. Also, poultry manure, which is a by-product of poultry farming serves as a balanced organic fertilizer, useful for cultivation.

Further, like many other fields, in poultry industry too, there are two types of poultry farming: the traditional and the industrialized sector. To the extent that poultry industry is highly automated and conducted on a large scale, exports of poultry products have potential and can be an important source of foreign exchange earnings. This is made possible because of the availability of good hybrid birds, quality vaccines and latest technology on management. Infact, the country is in a position to export not only eggs and broilers, but also poultry feeds, sophisticated poultry equipment, poultry medicines, poultry vaccines and possibly poultry technical know how.

From the above, we have observed the importance of the poultry sector, its prime contribution being "to close the protein gap and meet the nutritional standards of the population". Again, we know that development of this sector can be promoted through a wide range of strategies. For example, industrialized poultry is characterized by practises like environmentally controlled housing and automation, while traditional

poultry is labour intensive and less adaptive to modern innovations. Both these strategies of poultry development have their own role to play they co-exist and are not competitive to each other. However, it is the extensive small scale units which assume importance in India, in view of the socio-economic conditions faced by the country. These small-scale, semi-intensive units, naturally belong to the unorganized sector of the economy. A study of such units and their economic viability would enable us to understand the contribution of the unorganized sector to poultry development.

The concept of the unorganized sector however is a debatable issue. It is defined as the sector which is not recorded under any factory legislation, consisting of unregistered units with unpublished data base. A more meaningful definition of the concept of unorganized sector is its identification with pre-capitalist structure production. The unorganized sector is comprised of own account workers and also casual labour employed in establishments. In other words, the unorganized sector is characterized by low capital intensity, low level of productivity and pre-ponderance of family labour.

The large scale existence of the unorganized sector is an important feature that characterizes the Indian economy. Therefore one dimension of the unorganized sector, i.e. the poultry sector has been taken up for study..

Our study on "Economics of Poultry Units in Unorganized sector" relates to the state of Maharashtra. Among all the states in India, Maharashtra ranked second in broiler production and was close to Andhra Pradesh which had highest broiler production. In other words, Maharashtra's contribution to the broiler production of the country was 17.09 percent, while the contribution of Andhra Pradesh was slightly higher i.e. 17.82 percent. Again, with respect to egg production, Maharashtra was in the forefront and ranked third in the country. The contribution of Maharashtra to the poultry sector of the country is therefore no doubt significant.

Further, the poultry population in Maharashtra, over the years showed a phenomenal increase and during the decade 1982 to 1992, the increase was of the order of 39 percent. The noteworthy feature regarding the poultry population is that over the years, the share of deshi fowls is decreasing and that of improved birds is increasing. While the share of deshi birds in the total poultry population was 98.32 percent in 1961, and 82.6 in 1982, it's share came down to 71 percent in 1992. From these figures, it

can be observed that improved poultry is very gradually increasing its share in poultry population. The fact however remains that despite the fact that improved birds are gaining importance, desi fowls are still pre-dominant as their share is almost three-fourth in the poultry population of Maharashtra.

Backyard rural poultry units still have a significant role to play despite the fact that, desi layers, have a very low laying percentage of about 30 percent while in case of improved birds the laying percentage is 72.13. The desi fowls are mostly maintained at the backyard of the farmer and in this form of production, the farmer maintains small flocks that wander freely, scavenging for their food and also receiving some home grown inputs. They lay few eggs and these are smaller in size than eggs from the commercial sector. The expenditure involved in rearing these birds is virtually nil and hence the sale of these eggs entails a net income to the family. In many developing countries, this system is still responsible for a large proportion of the eggs that are produced. Infact, in China, the largest egg producing country in the world, 80 percent of the birds belong to local breeds and only 20 percent are improved breeds. The local breeds yield just about 120 eggs but yet have relevance in the present day, in view of the prime or subsidiary income and employment opportunities that they generate to the farm sector.

While deshi layers contribute to egg production in their own way, improved varieties such as White Leghorn, Australorp, Rhode Islands Reds, etc, are often maintained in farms, even by small farmers, for higher egg production. In case of these breeds, the birds cannot fend for themselves and feed cannot be confined to home grown inputs. These birds require concentrated well formulated nutritional feeds at regular intervals, without which they would record a drop in egg production. Further, these birds have to also be vaccinated for disease protection, failing which could lead to mortality of birds. Overall, improved layers do require scientific management, and any lacuna on this part would result in a drop in egg production or mortality which altogether would terminate egg production. On the whole, improved layer rearing if carried out with proper care and management could result in high laying percentage and therefore a good source of income to the poultry farmer.

Yet another dimension of poultry farming and perhaps a more important one, is that of rearing broilers. A broiler is a young chicken, usually six to eight weeks of age

of either sex, that is tender meat with soft smooth skin and provides a good source of protein to the diet. The broiler production is a fast growing one and a popular segment of poultry industry due to minimum capital investment and space requirement, easy and early start and quick return i.e. within 6-8 weeks ( the cycle of a bird's life in broiler farming is only 8 weeks). Since there are quick returns to growers in case of broilers, in case of layers the bird is ready to lay only at 20 weeks,. Therefore there appears to be a preference for farmers for broiler rearing as compared to layer farming.

Given the importance and presence of a number of poultry units in the unorganized sector,we took up a study on poultry farming,related to rearing of both broilers and layers. More specifically, the main objectives of our study was : 1) to assess the economic viability of both layer and broiler units 2) to estimate the per kg. Cost of production of broiler and the cost of production of an egg 3) to observe the reasons for losses, if any.

As we have already mentioned, our study is confined to the state of Maharashtra. Again, in Maharashtra, we selected Pune District, where total poultry population was highest in the state. Further, in Pune district, the poultry population was observed to be maximum in Mawal taluka, followed by Haveli. In the other talukas of Pune District, the share of the poultry population was relatively low. Accordingly , sample farmers from Mawal and Haveli talukas were selected for the purpose of our study.

While we succeeded in obtaining 48 units of broiler farms in Mawal and Haveli talukas, finding small scale layer farms in the unorganized sector proved less successful. The Livestock census of 1992 indicated that in Mawal, out of the total chick population, 91.2 percent were for meat and only 8.8 percent were for eggs.

As we already mentioned, in layer farming, the chicks reach maturity only after 20 weeks when they begin to lay eggs and continue to do so for the next one year. Hence during 20 weeks or for 5 months, the layer farmer does not receive any income. Also, since the birds continue to lay eggs for one year or so, in case of mortality of the flock due to disease, the farmer would lose income for the year, assuming ofcourse that he maintains only one cycle at a time (i.e. all in all out system ). In case of broilers of however, there are quick returns to growers as chicks are ready for market in seven to eight weeks. Perhaps, taking these factors into account, poultry farmers, atleast in the

unorganized sector prefer broiler to layer farming. Infact this bias to-wards broiler farming seems to be an all India phenomena, looking at the steep growth in broiler hatcheries and also broiler parent stock. While broiler hatcheries in the country increased from 77 in 1980 to 281 in 1993, the layer hatcheries number went up limitedly from 97 to 113. Similarly, during this period, broiler parent stock in production went up by almost 700 percent while layer parent stock went up by a mere 33 percent. Broiler farming as we mentioned, having a quick turnover, seems to be more attractive. Studies, including ours, have also shown that it is more remunerative.

Due to various difficulties encountered in obtaining sample layer farms, our study is focussed mainly on broiler farms. With respect to layer farms only a very limited analysis was conducted.

The study on broiler farming was related to 48 farms all of deep litter type, having different capacities ranging from a flock size of 50 to 5000. All units were reared in the "all in all out" system, wherein one batch was reared together until the eighth week (one cycle) and a new flock of fresh chickens were to be introduced only after disposing off the previous batch, already reared. These farms were divided into 8 categories depending upon their size. We collected data on per bird, per cycle, fixed and variable costs. The data were collected in June 1997 for the most recent completed cycle. Again the gross receipts of the broiler farmer, from one bird, one cycle was estimated. The total costs deducted from gross receipts indicated the net income, per bird, per cycle, for a broiler unit. In a similar manner, the net income per layer, per cycle was also estimated. The layer cycle ofcourse, as already mentioned was much longer than the broiler cycle. The cost of production of a broiler (per kg.) and that of an egg was also calculated.

The data related to costs indicated that taking into consideration all farms, the variable costs constituted 93 to 96 percent of total costs. Again out of total variable cost, it is the cost of feed which is the single largest factor in the cost of producing a broiler. The cost of feed formed half the cost or a little more in case of all farms. There were however variations in the cost of feed between farms. This difference in cost was because while most of the farms purchased feed at the rate of Rs 7 to Rs 8 per kg, we observed in our sample, that there were certain farms which purchased feed at Rs 6 per kg, while certain others purchased at Rs 9.20 per kg. While feed prices do fluctuate, it

is also true that that feed prices do differ as different feeds have different formulations. Also, at times farmers use locally available, cheaper feed ingredients. However, it was nowhere observed in our study, that in case of costly feeds, the weight gained by the bird was higher.

Almost all farms purchased Day Old Chicks for Rs 12 to Rs 13 per bird. The purchase of a cheap quality chick is not a method of reducing cost. Infact , a poor quality breed may result in low feed conversion or even mortality.

The cost of the feed and the bird together accounted for nearly 80 percent of the total cost. Labour, veterinary aid, litter, fixed cost and miscellaneous costs accounted for the balance. Our sample showed that labour costs were highest in case of smallest farms and as farm size increased, labour cost reduced. The per bird variable cost ranged from Rs 45 to Rs 52.74.

The fixed cost formed barely 4 to 6 percent of total cost. Interest on capital, constituted the major portion of the fixed cost. Fixed cost per bird ranged from Rs 2 to Rs 3.6.

The gross receipts obtained from the broiler farmer were ofcourse mainly from the sale of the bird. In addition the farmer received marginal income from the sale of gunny bags and manure, which is a by product of poultry farming.

Regarding, income from the sale of the bird ( which constituted 95 percent of the gross receipts ), it was dependent on two factors: 1) the sale price of the broiler 2) the weight of the bird. The sale price of the bird depended upon demand and supply conditions. The demand is subject to fluctuations due to various factors such as climate, religious festivals and availability of other sources of meat and fish. and their prices. Warm climates and religious festivals often bring about a fall in demand for broiler meat. This may again be true if other sources of meat and fish are cheaply available.

Regarding weight of the bird, it was observed that most often, the weight of the live bird ranged between 1.5 to 1.7 kg. It was nowhere observed in our sample that relatively large farms have a higher feed conversion as compared to small farms. Overall, the data showed that both large and small farms have similar feed conversion ratios and achieved similar sale prices for their birds.

The gross receipts of the broiler farmers in our sample ranged between Rs55.5 to Rs61.84 per bird. The major income was from the sale of the bird while a marginal income earned was from sale of manure which is a by product of poultry rearing. Again the gunny bags in which the feed was purchased had a resale value and this again fetched the poultry farmer a small income.

The net profit earned in different size groups of farms varied widely, between Rs2.68 per bird to Rs11.34 per bird. In our sample of 48 farms, only 3 farms recorded losses. The smallest farm in the sample, having a flock size of only 50 birds incurred losses due to very high labour costs. In another farm, while costs incurred were nominal, low live weight of the bird and low sale price resulted in the unit being a loss making one.

The data indicated, that smallest farms made the lowest net profits in view of their high labour costs. Farms having a flock size of 1000 to 2499 earned as much as Rs11.3 per bird. Farmers in a bigger size group of 2500 to 2999 earned a much lower net profit of Rs 4.78 per bird. All farms in this category purchased feed at a cost of Rs 9.20 ( while in case of other farms the cost of feed ranged between Rs6 to Rs 8 per kg ). This high feed cost naturally escalated the variable costs, while there was no observation that , the birds in this category gained more weight. High feed costs and relatively low feed conversion resulted in lower profits.

Again relatively large farms, having birds ranging from 3000 to 5000 birds showed profits of Rs 8 per bird.

The overall conclusion from our sample size showed that smallest farms had lowest net profits. The net profit increased with farm size upto a limit of maintaining 1500 birds. Thereby the net profits remained constant but showed a sharp fall in case of farms having 2500 – 2999 flock size. The net profit again increased for farms maintaining 3000 to 5000 birds.

The conclusions of our study are ofcourse based on a small sample, covering only one taluka . Further , the sample estimated the farmer's income only from one broiler cycle. The income of the poultry farmer is however subject to fluctuations. Poultry production is a delicate business, dealing with tender birds and profitability depends upon several factors. Hence, the economic viability of poultry production is always an element of uncertainty. While a farmer may have a good crop in one cycle,



his flock may get diseased in another, thus disrupting his flow of income. While this risk may be true to any crop, where the entire harvest may be damaged due to bad weather, or infestation by pests, there are certain features which are special to poultry. For example, poultry birds require the same labour to feed them everyday as they are very sensitive to change in labour, which may cause loss of appetite and hence impair growth. Further, birds being a biological production, can be exposed to stress and the maximum expression of stress results in mortality, due to fright from shock even though no injury is involved. The process of poultry farming may actually induce stress. Again, stress may be induced due to reaction from vaccination, overcrowding, noise, strangers, debeaking, etc. Stress may be a physical, chemical or emotional factor and can only be partially corrected by medical aid. As already noted, the possibility of birds being exposed to stress can restrict their growth and thus in the process reduce economic viability.

Thus for a broiler farmer, while cost of feed and sale prices of broiler are often out of his control, good and scientific management may go a long way in improving his profitability.

Finally our study on cost of production per kg of broiler showed that, taking across all farms, while the cost of production of a broiler was Rs30.5 per kg, its sale price was Rs 38 per kg. This suggests that production of broilers, on the whole seems to be a profitable venture.

As regards layers, we have already mentioned that a very limited study was carried out due to inavailability of sample farms. The result of our study however showed that, as in the case of broilers, feed constituted the major cost. While chick and grower mash constituted 16 percent of the total variable cost, the feed cost at the laying stage (i.e. after 20 weeks) was the single largest factor, in the variable cost and formed 74 percent. During the laying stage, the layers consume 42 kg of feed (roughly 125 grams per day) but their consumption at the chick stage is 9 kg.

Out of the total cost, the variable cost formed 98.3 percent. The fixed cost was barely 1.73 percent of total cost.

The main source of gross receipts for the layer farmer was ofcourse from the sale of eggs. The farmers normally sold the eggs at a rate which was 5 percent below the NECC rate. While 85 percent of his gross receipts were obtained from eggs, in case

of layer farming, again two by products emerged: culled birds and manure. After the laying period of the layer is over, the culled bird is sold at a price depending on market forces. This serves as an additional income to the poultry farmer and 8 percent of his gross receipts are obtained from this source. Again, poultry droppings are a good source of manure and serve as one more source of income. Finally, the gunny bags in which feed are purchased serve as a marginal income to the layer farmer.

Our overall analysis however shows that, the net income per layer, per cycle is even less than a rupee and amounts to Re.0.72 paise. However, the net income over variable cost is Rs 7 per layer. This suggests that a layer farmer works on very low profit margin. A number of studies, in different parts of the country had been conducted by NABARD. The studies showed various findings: while some layer units had very good economic viability, there were several others that were loss making ones.

Layer farming, like broiler farming is a very delicate and risky business. Layer farming however has a bigger gestation period and one completed layer cycle is around 17 months while in case of broiler farming it is barely 6 to 8 weeks. The commercial viability of the layer farm, again depends upon cost of production, sale price of eggs and sound management. Since cost of feed accounts for around 90 percent of the cost, any saving on this account would naturally lower the cost of production. Big farmers sometimes have this advantage as they purchase ingredients, economically and in bulk, soon after harvest, when prices are low. They prepare the feeds in the farms with the help of nutritionists. Bulk purchases, at low prices help to lower his feed cost. The farmer of course, in his attempt to lower feed prices should not compromise on quality. Any compromise on quality would result in drop in egg production.

The commercial viability of the layer farm again depends upon the sale price which is subject to fluctuations depending upon demand and supply. In summer, the price of eggs, tend to come down due to seasonal fall in demand. Further, the heat stress has a depressive effect on feed consumption, which reduces the egg laying capacity of the bird. Also feed prices are high at this time. However, any favourable turn in egg prices and also that of culled birds raises the profits of the layer farmer.

The cost of production of an egg in our study indicated that while the production cost of an egg was Rs1.16, its sale price was Rs1.17. There was virtually no benefit in producing eggs for the farmers.

The overall conclusion of our study, highlights the fact that, in poultry business, broiler farming seems to be a more profitable venture than layer farming and there also seems to be a preference among farmers for rearing broilers than layers.