Study No. 75

ECONOMICS OF POULTRY PRODUCTION AND MARKETING IN JABALPUR DISTRICT, (M.P.)

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INTRODUCTION

1.1 Introductory

Eggs and broilers (flesh) are the two most important products of poultry industry. Eggs provide essential food nutrients easily available in acceptable form and produced in every corner of the world. The egg as a whole minus the shell contains various types of vitamins and minerals. The fat soluble vitamins like A, D and E are present in the yolk and albumin. These act as a good source of riboflavin, pantothenic acid niacin, Vit. B6 and B-12. The egg proteins are very well balanced with respect to amino-acids. These are superior in comparison to other protein foods such as milk, flesh, soybean, wheat and fish etc.

Similarly, the meat of broiler also provides important nutrients like proteins, fat, calcium, iron, vitamins etc. A 100 gm of bird's flesh gives 165 calories. However, inspite of all these, the per capita per year availability of eggs and broiler meat is very low in our country i.e. 36 eggs and 850 gm as compared to the world average of 119 and 8 kg. respectively.

Only a few decades ago, poultry was not considered to be an honourable business but only fit for the poorer, illiterate and backward sections of the society. These people naturally found it difficult to invest sizeable amounts of money in the industry on which they depended for their sustenance. As a result, the industry suffered and could not prosper rapidly.

However, things moved in a different direction during the past four decades. Poultry came to be looked upon as a remunerative business and many large and small poultry farms were established in various parts of the country with the active support of the various state agencies, F.A.O. and especially private fundings.

Moreover, poultry sector got tremendous support from the ever increasing population coupled with an increasing demand for protective food like milk, meat, egg, etc.

The "green revolution" and "blue revolution" have also made the average Indian aware of the need to add nutritional food

to its daily diet in shortest possible time and poultry is the most efficient convertor of low value food into high value nutritional food for human consumption. It is true that the present food supply in the country upto some extent is quite satisfactory but the per capita availability of nutritive diet is very poor. According to the nutritional scientists a balanced and nutritive diet can be available through milk and eggs. Two eggs per day per person supply 167 calories.

Profitability of poultry enterprise and the dairy industry could not muster enough resources to cope with the ever increasing demand and similar was with the meat/mutton trade. The poultry keepers realised that they could greatly benefit by adopting scientific ways of raising feeding and breeding of the birds. The poultry industry got a sound scientific foundation and assured finance.

1.2 Poultry Development in India

The poultry sector is one of the rare examples of socio-economic development which attained its present advanced stage without much international assistance in terms of financial investment and or investment from the five year plans.

During the last 35 years poultry industry has transformed itself from a backyard business activity into an organised and sophisticated medium scale industry using fundamental and applied research, transfering technology from the best sources abroad and utilising highly professional Indian man power. Through a well planned effort at indigenisation and acclimatisation, the productivity of the layers and broilers was improved systematically with the result that our productivity levels are at par with, if not higher than, those of the developed countries.

Though the foundation of poultry industry was laid in first five year plan itself, the actual momentum was gained only during the sixties. It is during this period that the poultry farming transformed from backyard business to commercial one. The introduction of new and efficient modern management techniques, income tax exemption for poultry sector, higher purchasing power of the consumers were the contributing factors for the rapid strides of poultry industry in the coultry.

Intensive production cum marketing system developed in different parts of country encouraged progress. The state governments decided on a more ambitious programme such as the Intensive Poultry Development Project (1969-74) and extended the area of operation. As a result of serious drive poultry production started gaining momentum with each successive plan. With an annual egg production of 27 billion in 95-96 India Commands nearly 4 per cent of world's egg production.[1]

1.3 Importance of Poultry

India is fifth largest egg producing country in the world and 22nd largest broiler producer. It has one of the most favourable agro-climatic conditions. The plan outlay for poultry during the second five year plan was Rs.28 million which has gone up as much as Rs.602 million during the 7th five year plan showing the importance being attached by government to this sector.

1.3.1 Contribution in Indian Economy

The poultry sector is providing livelihood to nearly one lakh farmers, direct and indirect employment to about 1.5 million persons contributing Rs.10,000 crores to the national income. Another major contribution to the agricultural sector is the organic manure. The poultry industry yields, as a by product, more than 15.4 lakh tonnes of manure every year. One tonne of manure provides 40 kg. of nitrogen, 28 kg.of phosphorus and 23 kg. of potash.

The most important contribution of poultry, however, is the rich protein it provides to the Indian diet. This is particularly significant since it uses 60 to 65 per cent of the feed ingredients which can not be used for human consumption.

Notwithstanding the fact that the growth rate of poultry industry has been much higher than that of other segments of the livestock industry, as well as the agricultural sector as a whole the per capita availability of eggs and poultry meat in India is far below the required level.

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1. Shangmugasundaram, S. "Bridging the protein gap" Survey of Indian Agriculture 1997, pp 123-125

Indian per capita consumption of eggs is 36 as compared to the average of 250 in the developed countries, world average of 119 and the National Institute of Nutrition's recommendation of 180 eggs.

Similarly the per capita consumption of 850 grams of poultry meat compares poorly with the average consumption of 26 kg. in developed countries, world average of 8 kg. and the NIN's recommendation of 21 kg. of all meat. Clearly there is a long way to go.

1.3.2 Employment

Various research studies indicate that with every additional egg consumed per capita, there is a potential for 25,000 more jobs. Similarly with every additional 50 gm. of poultry meat there is a potential to create 20,000 additional jobs.

If a growth rate of 10 per cent in egg production and 15 per cent in broiler production can be sustained for the next 10 years the per capita consumption of eggs will increase to 75 and the per capita consumption of broiler meat to 2.3 kg. The contribution to Gross National Product will be Rs.23,000 crores and the employment generated will go upto 3.6 million days[2].

1.3.3 The Global Trade

Apart from all these there are tremendous global opportunities waiting ahead. It is estimated that the total global trade in poultry sector in 1993 was nearly Rs.17,000 crores. Of this, Indian share was almost negligible (i.e. Rs.15 crores). Compare this with the export made by the Thailand of Rs.1,700 crores.

1.4 Poultry in Madhya Pradesh

Madhya Pradesh is one of the major egg procing state in India. State had 113 million eggs production during 1995-96 which accounted for 4.25 per cent of entire egg production in the country.

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2. B.V. Rao – Waiting in the wings (1995) The survey of Indian Agriculture pp 137-142

The number of poultry birds for meat (broilers) also increased significantly during the last decade. During 1995-96 the total number of broilers in the state were 5.5 million.
The State Government initiated various poultry development projects and at present a project named 'Mass Poultry Programme' is in operation. Under this programme 15 days old chicks along with medicines and feed are supplied to the small and marginal farmers.

However inspite of government and private efforts, the per capita availability of egg is only 16 as compared to the national average of 32 eggs.

The main eggs and broiler production and marketing centres in the state are ~~Raipur~~, Jabalpur, Indore and Bhopal.

1.5 Objectives :

Keeping in view the importance of poultry production, marketing and problems faced by farmers and the role of backyard poultry in the rural economy, the Ministry of Agriculture, Govt. of India entrusted the study to Agro-Economic Research Centre, Jabalpur with the following objectives.

(1) To study the socio-economic status of the organised and unorganised poultry farmers.

(2) To find out the cost of production of eggs and broilers on the organised and unorganised farms.

(3) To study the various marketing channels operating in the market for eggs and broilors.

1.6 Design of the study

There are 3 (4) major egg producing areas (Centres) in the state. These are Raipur (Chhattisgarh) mandi, Indore mandi, Jabalpur mandi and Bhopal mandi. Jabalpur is one of the biggest egg producing centres of the state with more than 14 lakh population and state headquarters of the NECC (National Eggs Coordination Committee). It also has the biggest hetcheries of the state. Therefore, the study was taken up in Jabalpur district of Madhya Pradesh.

1.6.1 Selection of Poultry Units

All the poultry units were categorised in three different groups : Small (upto 5,000 birds) medium (between 5,000 to 10,000 birds) and large (10,000 birds and above). From each category fifty per cent of poultry units keeping layers were randomly selected i.e. 3 from small, 5 from medium and 7 from large size group. Thus, total number of 15 poultry units were selected for egg production study. Similarly, for broiler production study 50 per cent of the broiler farmers were selected from each size group i.e. 3 from small size group, 3 from medium size group and 6 from large poultry farms keeping broilers respectively. Thus, a total of 12 broiler farmers were selected for this purpose randomly.

For unorganised poultry farms all the selected farmers were categorised in three groups: small, medium and large on the basis of number of birds. Since the number was very small the farms having birds upto 10 were termed as small the farms having 10 to 20 birds were termed as medium and the farmer having more than 20 birds were termed as large for this study only. This was done as per the opinion of the poultry experts in the Vishwa Vidyalaya. The number of randomly selected farmers were 25 ((9 small, 10 medium and 6 large)

1.6.2 Selection of Wholesalers and Retailers

The data related to prices of eggs/broilers at different marketing channels were collected from wholesalers and retailers. There were only-5 wholesalers in egg market and 3 wholesalers in broiler market. Hence all wholesalers were selected. There were quite large number of retailers. Ten retailers for eggs and 5 retailers for broilers were contacted.

1.7 Methodology of Analysis

The cost items are divided into (a) fixed cost (b) variable cost. The fixed cost consists of value of birds, depreciation on poultry shed, cages and equipments and interest on capital investment. Variable cost includes cost of feed for layers, electricity charges, medicines and labour charges. Depreciation on fixed capital items is calculated on the basis of the life span of items.

The gross receipts, costs and net returns are worked out on per bird basis. Following equation is used to arrive at the cost of production of eggs.

$$\text{Cost per egg} = \frac{(\text{Variable cost} + \text{fixed cost}) - (\text{Minor Receipts})}{\text{Total number of eggs}}$$

As regards the cost and returns of the backyard poultry keeping, it is highly subjective and difficult to quantity because this system of bird for keeping is mixed up with house holds as supplementary enterprise with return as bonus and with insignificant cost on feed etc.

Since there is virtually no significant establishment cost involved in this system only imputed value of readymade feed, prevailing chick cost, equipment cost (Tokri, Darba etc.) medicines etc. were considered for cost calculation.

1.8 Bird Cycle

Bird cycle as reffered in this study refers the period from a day old chicks to the period when it is marketed for meat purpose. For a layer a cycle consists of roughly 72 weeks and for a broilor it is 40 to 45 days.

1.9 Reference Period

The reference period for the study was from January 97 to October 98 to cover a period of roughly 72 week for all the layer farms and April 97 to March 96 for broiler production and marketing related informations etc.

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CHAPTER II

PROFILE OF THE STUDY AREA AND SELECTED POULTRY FARMS

2.1 Jabalpur District

Jabalpur district lies between 22°49' and 24°8' north latitude and 78°21' and 80°58' east longitudes. Jabalpur is one of the central districts of the state. The tropic of cancer passes through the middle of the district and divides it into two equal halves. The shape of the district viewed from its north-west to south-east axis gives the appearance of a butterfly. With its wings spread out and approximates a rectangle. Its greatest length from south-west to north-east is 193.1 km. and its maximum width from west to east is 115.87 km. It is bounded on north by Panna district, on the north-east by Satna district on the east by Shahdol, on the south-east by Mandla district, on the south by Seoni district on the south west by Narsinghpur district and on the west and north west by Damoh district. The district occupies an area of 10,122sq.km.

The climate of the district is on the whole, pleasant and salubrious. January and December are the coldest months with a minimum mean temperature at 8°C. May is the hottest month with mean temperature at .45°C.

The Narmada is the main river of the districts. Other rivers are Hiran, Gaur, Katni and Pariat. Ken rising from the Kymore ranges flows for only a short distance in the district.

The average annual rainfall of the district ~~was 1,274.1~~ mm. and occured in about 60 rainy days. The district received 88 per cent of the annual rainfall during the monsoon months of June, July, August and September. July being the rainiest month.

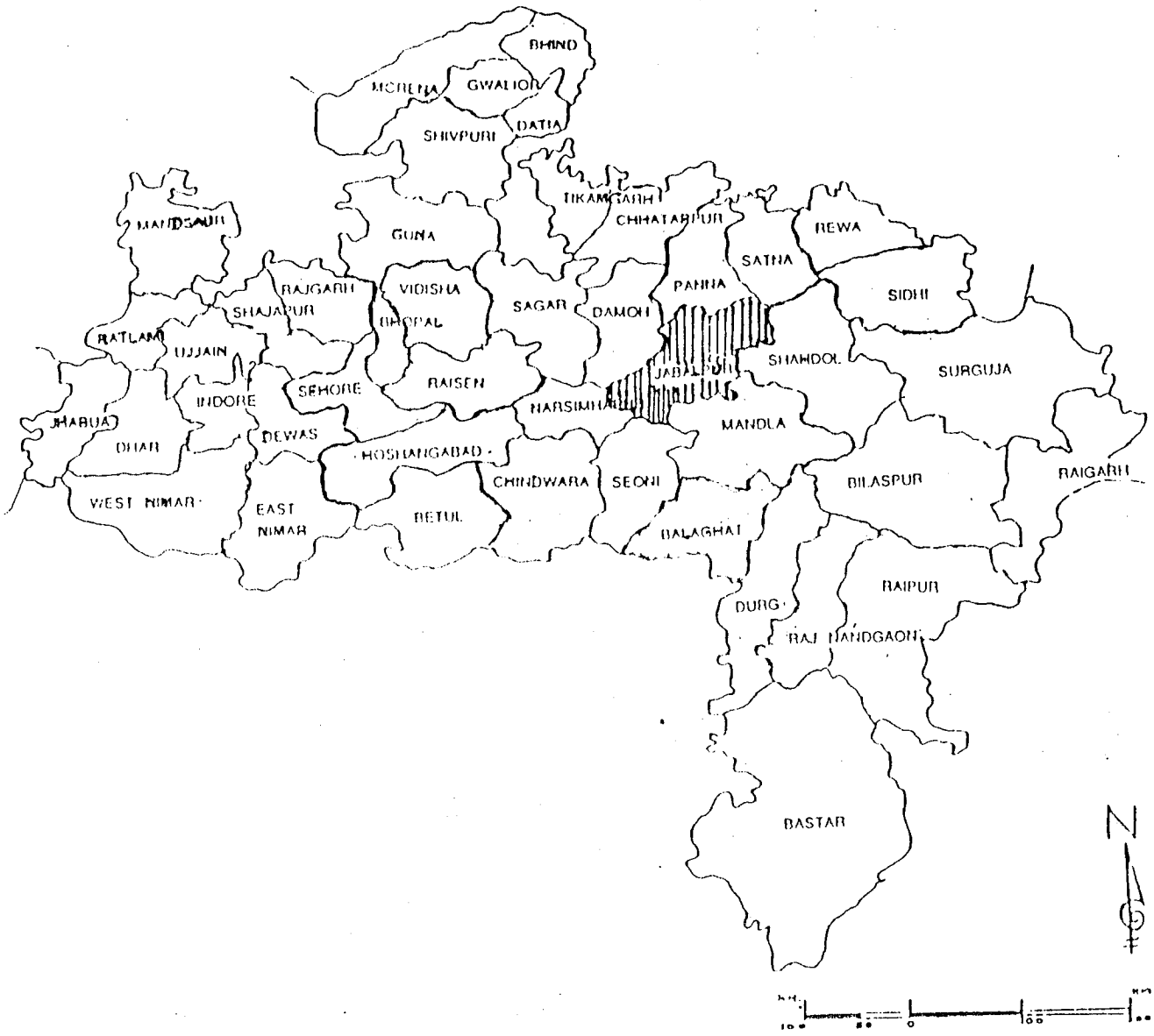
The population of the district as per 1991 census was 26.99 lakhs and the density, 261 persons per square kilometre (Table 2.1).

Table 2.1 Profile of the Study Area, 1996

S.No.	Particulars	Unit	Jabalpur
1.	Area	000 ha.	10160
2.	Population	Lakh	26.99
3.	Density of population	Per Sq.Km.	261
4.	Male population	Lakh	13.84
5.	Female population	Lakh	12.66
6.	Population increasing rate % (1981-91)	Per cent	20.52
7.	Rural population	Lakh	1443
8.	Rural population as percent of total population	Per cent	54.47
9.	Schedule caste	Lakh	3.39
10.	S.C. per cent of total population	Per cent	12.83
11.	Schedule Tribe	Lakh	4.74
12.	S.T. per cent in total population	Per cent	17.90
13.	No.of total main worker	Lakh	81.94
14.	Main workers per cent in total population	Per cent	33.76
15.	No.of female workers	Lakh	2.13
16.	Female workers per cent in total main workers	Per cent	23.84
17.	No.of farmers	Lakh	2.59
18.	Farmers per cent in total main workers	Per cent	29.03
19.	No.of landless labours	Lakh	2.21
20.	Landless labour per cent in main workers	Per cent	24.75
21.	Forest area	Lakh.ha.	1.55
22.	Net sown area	Lakh ha.	4.69
23.	Net sown area per man	hectare	0.17

S.No.	Particulars	Unit	Jabalpur
24.	Total sown area	Lakh. ha.	6.01
25.	Total sown area per man	Hectare	0.21
26.	Net sown area percent of total Geographical area	Hectare	46.33
27.	Double cropped area of net sowing area	Per cent	28.12
28.	Net irrigated area	Hectare	58773
29.	Net irrigated area % of net sowing area	Percent	18.28
30.	Total irrigated area % in total sown area	Per cent	21.08
31.	Total food grain production	lakh Metric ton	4.24
32.	Per man food grain production	Kg.	151
33.	Total use of fertilizer	000/Metric ton	24.08
34.	Use of fertilizer in per Hectare sown area	Kg.	40.06
35.	Gross price of total Ag. Production as per routine rate	Rs.	31062
36.	Per Hectare gross price of Ag. production as per routine rates	Lakh Rs.	5508
37.	Total No.of settled villages	(as per 1971) census	2263
38.	No.of electrified villages		2058
39.	Electrified villages % of total settled villages		90.94
40.	Rural electric consumption	Thousand Kilo.watt.hrs.	192588
41.	Per man electric consumption in rural Area	Kilo.watt. hrs.	133
42.	Poultry birds	Lakh	2.89
43.	Cattle	Lakh	7.10

JABALPUR DISTRICT



2.2 Poultry Farms in Jabalpur

In Jabalpur district two types of poultry farms are in operation.

A. Organised Poultry farms : These are classified in to two

1) Commercial Layer Farms (egg production)
2) Commercial Broiler Farms(meat production)

B. Un organised Poultry Farms : These are known as back yard poultry farms operating in far flung rural areas as small ventures.

2.2.1 Organised Poultry Farms :

Under this system of poultry farming two activities viz.egg production and meat production are performed. Two district varieties of birds are reared for egg production and meat production.

In Jabalpur district, the most commonly reared breed in layer farms is "Babcock hybrid". This breed is very popular among the poultry farmers because it laid 270 to 320 eggs per cycle of 72 weeks.

All the layer farms use cages for layers. The use of deep litter system is phased out due to various problems viz. cleaning, maintenance, collection of eggs, spread of disease,higher egg spoilage rate etc. However, the broiler farms use only deep litter system for rearing the broilers because it requires lesser investment and are very cost effective also.

The layer farms are well equipped and mechanised in terms of feeding, watering etc.

In the case of broiler farms "Day old chicks' (DOC) are procured from the hatcheries for rearing. Chicks are reared till these achieve desired body weight ranging from 750 gms to 1.5 kgs. It takes 4 to 6 weeks if proper management techniques are adopted eg. proper feeding and brooding.

The most common breed of the broiler farms is Babcock-V.

2.2.2 Un-organised or Back yard Poultry Farms

The word backyard is used for those poultry farms which are operating in a small and unorganised way using traditional rearing

methods particularly in the rural areas.

This system of poultry is specially popular among the economically and socially weaker sections of the society in general and scheduled castes, Scheduled tribes rural landless labourers and rural artisans in particular. It is a supplementary source of income and nutritional diet. These communities do not have any inhibition for eggs and meat.

In Jabalpur district, unorganised poultry farms are scattered in far flung areas with small scale operations. Farmers of these units are operating the poultry as a backyard venture solely by traditional methods and local breeds.Moreover their financial investment in these units is nil or negligible.

The number of such units is not very large in Jabalpur district. Moreover, the number is depleting rapidly due to various reasons viz. social taboos of neighbours and villagers and easy availability of eggs produced at commercial units situated in and around Jabalpur town, tehsil and block headquarters.

2.3 Sample Farms

There were 15 layer farms and 12 broiler farms in the sample. The unorganised farmers numbered 25 (Table 2.2).

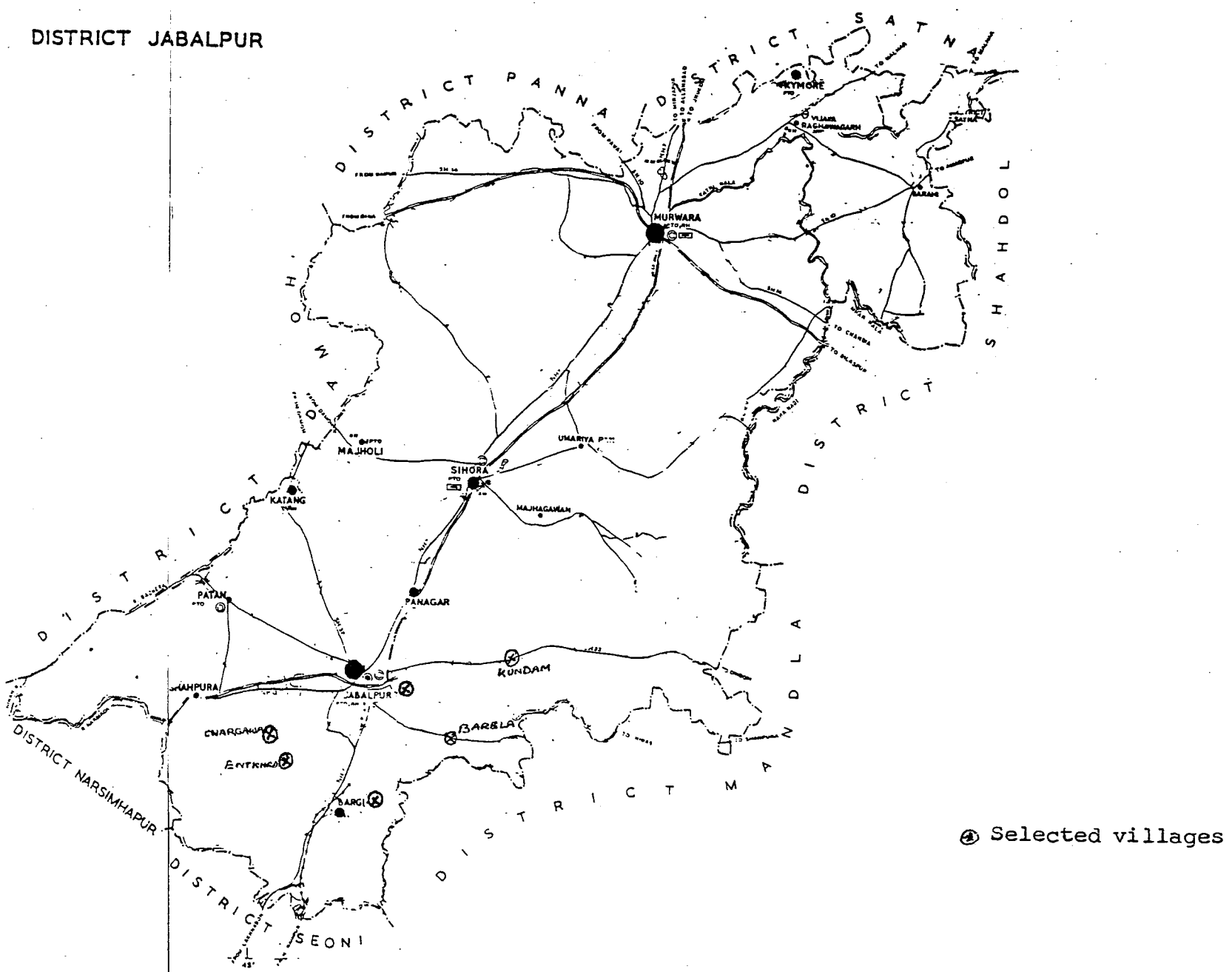
Table 2.2 Selected sample farms,Jabalpur district

S. No.	Sector	No.of selected farms	Average No.of birds per bird cycle			
			Small	Medium	Large Own	Large leased-in
1.	Organised	15				
	a) Layers		3,000	6,650	18,000	-
	b) Broilers	12	265(2650/ year)*	570(6840/ year)*	4750(57000/ year)	5000 (60000/ year)*
2.	Un-organised	25	7	15	32	-

* leased-in

The location of selected farms is as listed below -

1. Layers : Jabalpur city and within the radius of 25 km.
2. Broilers : Jabalpur city and within the radius of 25 km.
3. Backyard poultry farms : Jabalpur city, Bargi, Kundam, Barela, Entakhedi, and Chargawan villages.


DISTRICT JABALPUR
DISTRICT PANNA
DISTRICT SATNA
DISTRICT SHAHDOL
DISTRICT UMARIA
DISTRICT MANDLA
DISTRICT NARSIMHAPUR
DISTRICT SEONI
MURWARA
SIHORA
MAJHOLI
KATANG
PATAN
PANAGAR
MAJHAGAWAN
KUNDAM
JABALPUR
BARELA
SARGI
Selected villages

2.4 Socio-Economic Background of Sample Organised Poultry Farmers

2.4.1 Castes

Of the total selected sample farmers majority either belonged to higher strata of the social system i.e. brahmins, kayasthas, vaishyas and kshatriyas or minority communities like muslims, christians and sikhs . None of the scheduled castes or scheduled tribes community farmers took to poultry on an organised basis inspite of the support of the government agencies like DRDA etc. The lack of interest showed by these communities was due to the fact that poultry farming involved higher risk, higher working cost and heavy capital investment. (Table 2.3)

Table 2.3 Castes of organised farmers, Jabalpur district, M.P.

Sr. No.	Size of farm	Layer farmers					Broiler farmers				
		SC	ST	OBC	Others	Total	SC	ST	OBC	Others	Total
1.	Small	-	-	1	2	3	-	-	-	3	3
2.	Medium	-	-	-	5	5	-	-	1	2	3
3.	Large	-	-	-	7	7	-	-	—	6	6
	Total	-	-	1	14	15	--	-	1	11	12

2.4.2 Education

Educational standard of the farmers showed that almost all the farmers were highly educated irrespective of the size of farms. Of the total layer and broiler farmers 10 layer farmers and 8 broiler farmers were educated upto the level of graduation/post graduation. Three each were having technical degree like engineering, medicine, etc. and 2 layer farmers and 1 broiler farmer having degree in veterinary science. The study also revealed that all of them were well versed with the poultry business.

Thus it was observed that the educational status of the organised layers and broiler farmers was quite high. (Table 2.4)

Table 2.4 Educational status, selected farmers, Jabalpur district, M.P.

S. No.	Size of farm	Layer Farms						Broiler Farms					
		Illiterate	H.S.C.	Graduate & P.graduate	Veterinary degree	Technical degree	TOTAL	Illiterate	H.S.C.	Graduate & P.graduate	Veterinary degree	Technical degree	TOTAL
1.	Small	-	-	3	-	-	3	-	1	2	-	-	3
2.	Medium	-	-	3	1	1	5	-	-	2	-	1	3
3.	Large	-	-	4	1	2	7	-	-	4	1	1	6
	Total	-	-	10	2	3	15	-	1	8	1	2	12

2.4.3 Family Occupation

The economic background of the sample farmers also confirmed the view that 'only financially sound and wealthy people can take risk in poultry business'. The study revealed that most of the sample farmers were financially well off even before starting the poultry business. Some of the selected farmers even came from professional classes like advocates, doctors, engineers, and charted accountants and they were in this business since several years and had mastered the trade. (Table 2.5)

Table 2.5 Family occupation of the selected farmers, Jabalpur district, M.P.

S. No.	Size of farm	Layer farms					Broiler farms				
		Farming	Service	Business	Poultry	TOTAL	Farming	Service	Business	Poultry	TOTAL
1.	Small	2	-	1	-	3	2	-	1	-	3
2.	Medium	-	-	2	3	5	-	-	1	2	3
3.	Large	-	-	-	7	7	-	-	1	5	6
	Total	2	-	3	10	15	2	-	3	7	12

It may be noted that poultry farmers, mostly belonged to the age group of 26 to 45 years irrespective of the size of farms. This leads to the conclusion that commercial poultry farming is taken up by young persons as it requires energy and careful management(Table 2.6).

Table 2.6 Age group of selected farmers (organised), Jabalpur district, M.P.

S. No.	Size of farm	Layer farmers					Broiler farmers				
		Below 25	25 to 45	45 to 60	Above 60	TOTAL	Below 25	25 to 45	45 to 60	Above 60	TOTAL
1.	Small	1	2	-	-	3	2	1	-	-	3
2.	Medium	-	4	1	-	5	-	2	1	-	3
3.	Large	2	5	-	-	7	2	4	-	-	6
	Total	3	11	1	-	15	4	7	1	-	12

2.5 Socio-Economic Background of Unorganised Poultry Farmers

2.5.1 Castes

It is established from the study that there is a relationship between castes and adoption of poultry in unorganised sector in rural areas. Study revealed that majority of the sample farmers were from the lower strata of the rural society, backward classes, schedule castes and scheduled tribes people and very few belonged to the higher castes.

Of the total sample, 10 poultry farmers belonged to schedule tribes, 7 belonged to "other castes", 6 belonged to schedule castes and 2 belonged to backward classes. It is also found that among the higher castes farmers majority were either muslims or christians. (Table 2.7).

2.5.2 Education

The educational standard of the poultry farmers revealed that majority (18 out of 25) of them were either illiterate (9) or only had education upto primary level(9). Among the size groups, majority of the small and medium poultry farmers had poor education standards. (Table 2.7).

Table 2.7 Caste and education status of the poultry farmers (Unorganised)

S. No.	Size group	No.	SC	Caste			Educational standard				
				ST	OBC	Other	Illiterate	Primary	Middle	HSC	Graduate / Post Graduate
1.	Small	9	2	3	1	3	4	2	1	2	-
2.	Medium	10	3	5	-	2	4	5	-	-	1
3.	Large	6	1	2	1	2	1	2	-	2	1
	TOTAL	25	6	10	2	7	9	9	1	4	2

2.5.3 Age

Of the total selected backyard or unorganised poultry farmers almost half (12) belonged to age group of 45 to 60 years, 8 belonged to age group of 25 to 45 and only 4 farmers were under 25 years of age.

This observation shows that age is not an influencing factor in the adoption of the poultry farming among the rural youths. (Table 2.8)

2.5.4 Family occupation

The occupational pattern of the backyard poultry farmers revealed that fairly large number of them were dependent on agricul ture including allied activities.

Table 2.8 Age and family occupation, selected unorganised farmers, Jabalpur district, M.P.

S. No.	Size group	Age					Family occupation					
		Upto 25	25 to 45	45 to 60	Above 60	TOTAL	Agri-culture	Busi-ness	Service	Poultry farm	other occupa-tion	TOTAL
1.	Small	2	4	3	-	9	4	3	-	-	2	9
2.	Medium	1	2	6	1	10	4	3	2	-	1	10
3.	Large	1	2	3	-	6	3	1	2	-	-	6
	TOTAL	4	8	12	1	25	11	7	4	-	3	25

2.6 Capital Investment

2.6.1 Organised Farms

Housing or sheds is very important pre requisit for poultry farms and this requires a large amount of capital as birds cannot be kept without proper sheds. The poultry birds are very sensitive to environment and need proper caring. Equipments like cages, water supply line or drinker, feeders and other equipments form important itemsof fixed cost and it does not require much amount of capital as poultry sheds.

Table 2.9 Per farm capital investment on sheds, equipments and land, by organised farms, Jabalpur district, M.P.

(Amount- Rupees lakhs)

Size of farm	No.of birds/ farm	Value at the end of reference year				
		Sheds (Rs.)	Equip-ments (Rs.)	Land (Rs.)	Other (Vehicle, Wells pumpsets etc. (Rs.)	Total (Rs.)
A. Layer farms						
1. Small (Per bird)	3000	2.34 (78.00)	1.12 (37.50)	0.35 (11.70)	0.10 (3.50)	3.91 (130.70)
2. Medium (Per bird)	6650	4.50 (67.75)	2.16 (34.50)	0.64 (8.60)	0.60 (9.00)	7.83 (120.85)
3. Large (Per bird)	18000	11.70 (65.00)	5.95 (33.00)	1.26 (8.00)	1.98 (11.00)	20.89 (117.00)
B. Broiler farms Large (own) (Per bird)		5.21 (9.15)	0.43 (0.75)	1.14 (2.00)	---	6.78 (11.90)

The investment cost per bird is more meaningful than per farm as farm size varies widely. Per bird investment came to Rs.130.70, Rs.120.85 and Rs.117.00 for small, medium and large size layer farms.and Rs11.90 on large size broiler farms. All the small and medium size broiler farms were leased in farms.

It can be noted from the above table that the investment on sheds equipments and land is directly associated with the size of farm. The size of flock and capital investment on sheds & equipments are negatively correlated. As the size increases the cost per bird decreases.

Study also revealed that the large size farms and a few medium size farms had modern machinery, transport vehicles, generator sets and better cooling system for summer season.

2.6.2 Unorganised farms

The study revealed that with low income base of the back-yard poultry farms the investment on sheds and equipments is negligible irrespective of the farm size. With an average number of 16 birds per unit the average investment on structure (sheds) and equipments came to only Rs.5.80 and Rs.2.36 respectively.

Of the total farmers the per bird investment on structure by large farmers was higher (Rs.7.70) than the small (Rs.3.25) and medium (Rs.3.16). However, the per bird investment on equipment was lower on large farms (Rs.1.54) as against the investment made by small (Rs.2.73) and medium farms (Rs.2.56) (Table 2.10).

Table 2.10 Investment on sheds and equipments, Unorganised farms, Jabalpur district, M.P.

Size group	Average No.of birds	Value at the end of reference year	
		Structure (Rs.)	Equipment (Rs.)
Small (Per bird)	7	22.75 (3.25)	19.10 (2.73)
Medium (Per bird)	15	47.40 (3.16)	38.40 (2.56)
Large (Per bird)	32	246.25 (7.70)	49.30 (1.54)
Total (Per bird)	16	86.25 (5.40)	37.80 (2.36)

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CHAPTER III

ECONOMICS OF POULTRY PRODUCTION

In this chapter the economics of poultry units is studied with reference to gross receipts, operational and fixed costs, and net income of the sample poultry farms. For working out the economics the cost concepts included all operational expenses incurred, during the completed bird cycle, like the cost of day old chicks, labour including salaries of managers/supervisors, medicines, veterinary care, feed cost, depreciation on buildings/sheds, equipments and interest on working and fixed capital.

The gross receipts, included sale of eggs, manure, cull birds and empty gunny bags etc.

The farms were classified into three : small (average 3000 birds), medium (average 6,650 birds) and large (average 18,000 birds).

3.1 Economics of Commercial Layer Farms

Under this, only commercial (organised) egg producing layer farms are studied with reference to cost of production of eggs and returns from the sale of eggs and net profit per bird.

3.1.1 Cost on Poultry Farms

Cost on raising poultry birds for egg production included both fixed cost and variable cost. Fixed cost included cost of chicks, depreciation and interest on capital and variable cost included feed cost, labour cost, electricity charges, telephone charges; manager's salary, insurance charges, cost of medicines and veterinary expenses and other expenses incurred during the whole bird cycle.

On an average, the total cost per bird incurred on small, medium and large farms came to Rs.377.65, Rs.372.30 and Rs.367.60 respectively. It is evident from the table that the cost per bird decreased slightly with the increase in the farm size; This happened due to working of rule of economies of scale.

Out of the total cost, the variable cost accounted for slightly more than 90 per cent on an average (91.93% on small farms, 92.15 per cent on medium farms and 92.44 per cent on large size

farms respectively) leaving the balance as fixed cost. Again in the variable cost the feed cost alone accounted for 85 per cent followed by interest on capital (around 10 per cent), labour cost (around 2 per cent) and medicines etc. (around 1.50 per cent) (Table 3.1).

Table 3.1 Cost of production/bird/birdcycle of 72 weeks, Jabalpur district, M.P.

S. No.	Item	Small		Medium		Large		Total	
		Rs.	%	Rs.	%	Rs.	%	Rs.	%
A)	Fixed cost								
1.	Depreciation on buildings	7.25	23.80	6.00	20.55	5.00	17.99	5.48	19.28
2.	Depreciation of equipments	1.80	5.91	2.20	7.53	2.15	7.73	2.12	7.46
3.	Land rent	2.40	7.88	2.10	7.19	1.80	6.47	1.94	6.83
4.	Day old chicks	16.00	52.55	16.00	54.80	16.10	57.92	6.07	56.54
5.	Intt.on capital	3.00	9.86	2.90	9.93	2.75	9.89	2.81	9.89
	Total (Rs.)	30.45	8.07	29.20	7.85	27.80	7.56	28.42	7.68
B)	Variable cost								
1.	Feed cost	295.10	85.0	294.95	85.97	294.00	86.52	294.35	86.23
2.	Medicine/ vaccination	5.20	1.49	4.65	1.36	4.25	1.25	4.45	1.30
3.	Labour	9.10	2.62	7.55	2.20	6.15	1.81	6.81	1.99
4.	Miscellaneous cost	3.40	0.99	2.35	0.68	1.75	0.52	2.07	0.60
5.	Interest on working capital	34.40	9.90	33.60	9.79	33.65	9.90	33.72	9.88
	Total (Rs.)	347.20	91.93	343.10	92.15	339.80	92.44	341.40	92.32
C)	Total cost(A+B)	377.65	100.00	372.30	100.00	367.60	100.00	369.82	100

There are two ways of purchasing layer birds. One is purchasing day old chicks and rearing these till these come to laying stage i.e. 20 weeks. The second metnod is purchasing layer birds in their 20th week of age and rearing these till the age of culling. In Jabalpur, most of the poultry farmers purchase DOCs and rear these till the culling stage. The advantage of this method is that the DOCs get aclamatised to the changed environment gradually, whereas, in the case of 20 weeks old birds the mortality rate is high.

3.1.2 Gross Receipts of Poultry Farms

The average gross receipt per bird per farm from all the sources worked out to Rs.385.95, Rs.388.75 and 388.45 for small, medium and large farms respectively.

The income from egg production contributed as major share in the average gross receipts, followed by the receipts from culled birds, manure etc. Income from sale of manure on small farms was comparatively small because of the proximity to city or populated areas. Because of this farmers could not keep the waste material of poultry for longer period as the people complained about the bad smell which forced them to sell the waste material quickly at lower price (Table 3.2).

Table 3.2 Gross receipts of poultry units per birds/cycle, Jabalpur district, M.P.

S. No.	Item	Size of poultry farms			Total
		Small	Medium	Large	
1.	Egg production	340.00 (88.10)	342.80 (88.18)	342.80 (88.25)	342.50 (88.22)
2.	Culled birds	40.20 (10.41)	39.90 (10.26)	39.60 (10.19)	39.74 (10.24)
3.	Manure	2.75 (0.72)	3.10 (0.80)	3.05 (0.78)	3.03 (0.76)
4.	Sale of gunny bags	3.00 (0.77)	2.95 (0.76)	3.00 (0.78)	2.98 (0.76)
	Total	385.95 (100.00)	388.75 (100.00)	388.45 (100.00)	388.25 (100.00)

3.1.3 Net Return Per Bird

Study revealed that on an average the net return per layer bird/cycle came to Rs.20.85 for the large farms. On small and medium farms the per layer per bird cycle net return came to Rs.8.30 and Rs.16.45 respectively. This significant difference among the different size groups was attributed to the proper management techniques adopted on larger size farms where economies of scale operated and smaller size farms are not economically viable preposition. (Table 3.3)

Table 3.3 Net return per bird, per bird cycle, Jabalpur district, M.P.

S. No.	Particulars	Size of poultry farms			
		Small	Medium	Large	Total
1.	Gross receipt per bird per year (Rs.)	385.95	388.75	388.45	388.25
2.	Total cost per bird per year (Rs.)	377.65	372.30	367.60	369.82
	Net return per bird (Rs.)	8.30	16.45	20.85	18.43

3.1.4 Egg Production

The egg production per farm per bird was 281 eggs each on medium and large farms and 279 eggs on the small size farms. This showed that there was no significant difference in the average production of eggs per bird per cycle on different size farms as all the farms reared same breed "Babcock". (Table 3.4)

Table 3.4 Production of eggs per farm per bird

S. No.	Size of farm	Total number of egg produced	Average production of eggs per bird
1.	Small	8,37,125	279
2.	Medium	18,68,650	281
3.	Large	50,62,120	281
	Total	77,67,895	281

3.1.5 The cost of Production per egg per farm

The cost of production of an egg is the total cost during a production cycle including both fixed and variable cost components less income from the sources other than eggs devided by the total number of eggs.

or, Cost of production per egg = $\frac{\text{T.C.} (-) \text{Income from culls, manure and gunny bags}}{\text{Total No.of eggs production}}$

Table 3.5 Cost of production- per egg per farm, Jabalpur district, M.P.

Particulars		Size of farm			
		Small	Medium	Large	Total
a) Total cost/ farm	(Rs.)	11,32,950	24,75,795	66,16,800	41,39,695
b) Income from culled birds manure, gunny bags etc.per farm.	(Rs.)	1,37,850	3,05,568	8,21,700	5,12,886
c) (a-b)	(Rs.)	9,95,100	21,70,227	57,95,100	36,26,809
d) Production of eggs	(Nos)	8,37,125	18,68,650	50,62,120	31,54,631
e) Cost/egg		1.19	1.16	1.14	1.15

It may be seen that cost of production per egg is highest on small farms (Rs.1.19) as compared to medium farms (Rs.1.16) and lowest on the large size farms (Rs.1.14).

3.2 Economics of Commercial Broiler Production

Under this, only commercial production of broilers is studied. Cost and return for a broiler cycle are studied. An average period estimated for marketable broiler was 40 days which is called a broiler cycle or a broiler batch. A farmer usually reared 7 to 12 batches depending on the market demand and finance available with the farmer.

3.2.1 Cost of broiler production

It is evident from the table that the per bird cost of production was about equal on all the farms irrespective of size of farms. The per bird cost was lowest on small size leased in farms (Rs.38.60) and was highest on the medium size leased in farms (Rs.40.15). On the large size farms the estimated per bird cost came to Rs.40.05 for the own farms while it came to Rs.40 for the leased in farms.

The absence of own farms in the small and medium farms revealed the fact that due to paucity of finance small and medium farmers were not interested in establishing permanent infrastructure and leased in the old farms.

Out of the total cost, the feed cost alone accounted for more than 50 per cent (51.41 per cent on small, 53.55 per cent on medium, 52.68 per cent on large own farms and 52.50 per cent on large leased-in-farms respectively). The bird cost accounted for more than 33 per cent. Together these two items accounted for more than 85 per cent of the total cost leaving the balance of 15 per cent as other operational costs. (Table 3.6)

Table 3.6 Cost of production per bird per cycle

S. No.	Particulars	Small		Medium		Large			
		Leased in	%	Leased in	%	Own	%	Leased in	%
1.	Depreciation of sheds	1.60*	4.11	1.20*	2.99	0.50	1.25	0.95*	2.37
2.	Depreciation of equipments					0.50	1.25		
3.	Day old chicks	13.65	35.10	13.60	33.87	13.65	34.08	13.65	34.13
4.	Medicine/Vaccines	1.35	3.47	1.55	3.86	1.50	3.74	1.50	3.75
5.	Labour	0.40	1.03	1.00	2.49	1.10	2.75	1.00	2.50
6.	Litter charges	0.30	0.77	0.30	0.75	0.30	0.75	0.30	0.75
7.	Feed cost	20.00	51.41	21.50	53.55	21.10	52.68	21.00	52.50
8.	Miscellaneous (Electricity, Telephone, insurance/ Transportation and intt. paid	1.60	4.11	1.00	2.49	1.40	3.50	1.30	3.25
	Total	38.90	100.00	40.15	100.00	40.05	100.00	40.00	100.00

* Rent per bird

The lower expenses on labour on the small farms indicated that these farmers did not hire full time labourers or casual labourers and hired them only for some special purposes like cleaning of the sheds and mulching of lit etc.

3.2.2 Gross Receipts of broiler farms

The average gross receipts per bird per farm from all the sources worked out to Rs.50.05, Rs.50.15, Rs.48.85 and Rs.49.35 for small and medium leased in farms and large own and large leased in farms respectively.

The income from broiler sale contributed more than 97 per cent share. Receipts from other items like sale of bags and manure were very small. (Table 3.7)

Table 3.7 Gross receipts of poultry units- per bird cycle, Jabalpur district, M.P.

Sr. No.	Item	Size of farms							
		Small Leased-in		Medium Leased-in		Large			
						Own		Leased-in	
		Rs.	%	Rs.	%	Rs.	%	Rs.	%
1.	Sale of broiler	49.75	99.40	49.15	98.00	47.75	97.77	48.30	97.87
2.	Manure	-	-	0.65	1.30	0.70	1.42	0.65	1.31
3.	Sale of gunny bags etc.	0.30	0.60	0.35	0.70	0.40	0.81	0.40	0.82
	Total	50.05	100.00	50.15	100.00	48.85	100.00	49.35	100.00

3.2.3 Net Return Per Bird Per cycle

The estimated net return on small, and medium leased in-farms and large own farms and large leased in farms came to Rs.11.15, Rs.10.00, Rs.8.80 and Rs.9.35 respectively. It is revealed from the table that small farms received highest per bird net return. These farmers informed that due to proximity of the populated areas they

were able to fetch higher price as compared to the larger farms operating around the city (Table 3.8). However, due to low annual turn over their total income is very low as compared to the large farms.

Table 3.8 Net Return per bird per cycle, Jabalpur district, M.P.

Particulars	Size of broilers farms			
	Small Leased in	Medium Leased in	Large own	Large Leased in
1. Gross receipts/per bird (Rs.)	50.05	50.15	48.85	49.35
2. Total cost per bird (Rs.)	38.90	40.15	40.05	40.00
Nett Return per bird(Rs.)	11.15	10.00	8.80	9.35

3.2.4 Cost of Production per Kg. Body Weight of Broilers

The cost of production of per kg. body weight in the total production cost of a bird minus the receipts from sale of manure and gunny bags etc. divided by the total production in kilograms.

$$\text{or, cost of production per kg. body weight of broiler} = \frac{\text{Cost-Income from manure and gunny bags}}{\text{Total production in Kg's}}$$

Table 3.9 Cost of production- per kg. body weight, Jabalpur district, M.P.

Particulars	Size of farms			
	Small Leased in	Medium Leased in	Large own	Large Leased in
a) Total cost/farm per batch (Rs.)	10,308.50	22,885.50	190,237.50	2,00,000.00
b) Income from gunny bags & manures(Rs)	79.5	570.00	5,225.00	5,250.00
c) (a-b)	10,229.00	22,315.50	185012.50	1,94,750.00
d) Total production per batch (kg.)	385.00	885.00	7500.00	7,515.00
Cost/Kg.	26.55	25.20	24.65	25.90
Receipt/Kg.	34.50	32.35	30.90	32.90
Net return per kg.	7.95	7.15	6.25	7.00
Cost Benefit ratio	1:1.30	1:1.28	1:1.25	1:1.27

It is revealed from the table that the cost of production of per kg. of body weight is lowest (Rs.24.65) on large own farms followed by large leased in farms (Rs.25.90), medium leased in farms (Rs.25.20), and small leased in farms (Rs.26.55). However the cost benefit ratio is lowest on large own farms as compared to other farms and the estimated earning over per rupee investment on per kg. body weight came to Rs.0.25, Rs.0.27, Rs.0.28, and Rs.0.30 on owned large farm, leased-in large farms. Medium leased-in farms and small leased-in farms, respectively. This is due to higher price received per bird by small leased-in farms.

3.3 Economics of Unorganised (Backyard) Poultry Farms

Since backyard poultry is a part of the house hold activities it is very difficult to quantity the cost and return. Moreover, it is a supplementary enterprise of the family where return is like a bonus. However, an attempt has been made to work out some economics of backyard poultry production.

The farms were classified in to three groups : small (Average 7 birds), medium (Average 15 birds) and large (Average 32 birds).

3.3.1 Costs of Production

All the backyard birds are reared without readymade feed and prescribed feeding methods with few exceptions. Normally, backyard poultry birds are deshi breed which survive on food pickings from surroundings supplemented by food leftovers. Moreover these birds are resistant to host of poultry deseases and therefore are not given any medicines or administered vaccines (Table 3.10).

Table 3.10 Cost of production per bird, unorganised sector, Jabalpur district, M.P.

Particulars	Size of farms					
	Small	%	Medium	%	Large	%
1. Cost of birds (D.O.C.)	4.00	41.67	4.00	39.80	4.00	16.56
2. Cost of structure	1.75	18.23	2.00	19.90	1.50	6.21
3. Cost of equipments	1.60	16.66	1.55	15.42	1.00	4.14
4. Cost of feed (purchased only)	2.25	23.44	2.50	24.88	16.60	68.75
5. Medicine etc.	-	-	-	-	1.05	4.34
Total	9.60	100.00	10.05	100.00	24.15	100.00

3.3.2 Gross Receipts

On an average the per bird gross receipts from eggs and receipts from cull birds came to Rs.264.60, Rs.266.00 and Rs.284.00 for small, medium and large farms respectively.

It is evident that in backyard poultry farms the value of the cull birds was comparatively higher than that of organised farms because people have a liking for meat of deshi birds over hybrid layer's meat. (Table 3.11)

Table 3.11 Per bird receipts of the backyard farms

S.No.	Particulars		Size of farm					
			Small	%	Medium	%	Large	%
1	Eggs	(Rs.)	213.00	80.50	216.00	81.20	236.00	83.10
2	Cull birds value	(Rs.)	51.60	19.50	50.00	18.80	48.00	16.90
	Total	(Rs.)	264.60	100.00	266.00	100.00	284.00	100.00

3.3.3 Net Return Per Bird

Study showed that on an average the net return per bird came to Rs.255.00, Rs.255.95 and Rs.259.85 for small, medium and large backyard poultry farms respectively. (Table 3.12). This sounds quite high because of two reasons-

1. It includes the value obtained for eggs
2. The cost of feeds is negligible

Table 3.12 Net return, per bird, Jabalpur district, M.P.

S. No.	Particulars		Size of farm		
			Small	Medium	Large
1	Total receipts	(Rs.)	264.60	266.00	284.00
2	Total cost	(Rs.)	9.60	10.05	24.15
	Net return	(Rs.)	255.00	255.95	259.85

3.3.4 Egg Production

On unorganised farms small and medium farmers received lower egg production because of deshi birds. However, some large farms inducted exotic breed in their production stock and managed higher egg production (Table 3.13).

Table 3.13 Egg production, unorganised farm, Jabalpur district, M.P.

(Numbers)

S.No.	Size of farm	Total egg production	Per bird egg production
1.	Small	8,768	137
2.	Medium	20,850	139
3.	Large	29,682	153

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CHAPTER-IV

MARKETING OF POULTRY PRODUCTS

4.1 Marketing of Eggs

In this chapter different marketing channels for the sale of eggs and price spread between producer and consumer in different channels are studied.

The channels of marketing of eggs were following-

4.1.1 Marketing Channels

The functionaries involved in the marketing of eggs are almost same as in other parishable commodities viz. vegetables and fruits. The marketing system differs according to the distance between the producer and consumer. The longer the distance between the producer and the consumer the more complex becomes the marketing system and more marketing agencies are involved in marketing system. Following are the main channels of disbursing the eggs from the producer to consumer.

1. Producer - Consumer
2. Producer - Retailer - Consumer
3. Producer - Wholesaler-Retailer - Consumer

1. Producer - Consumer

Through this channel of marketing very few poultry owners sold eggs directly to the consumers, particularly some small size poultries, which are situated very near or within the populated areas.

2. Producer - Retailer - Consumer

This channel is also not very popular and between 2.00 and 5.00 per cent of the total eggs sold are routed through this channel in different size groups.

3. Producer - Wholesaler - Retailer - Consumer

This is the most important channel operating in egg market and more than 90 per cent of the total eggs are marketed through this segment. (Table 4.1)

Table 4.1 Different marketing channels for eggs, selected farms, Jabalpur district, M.P.

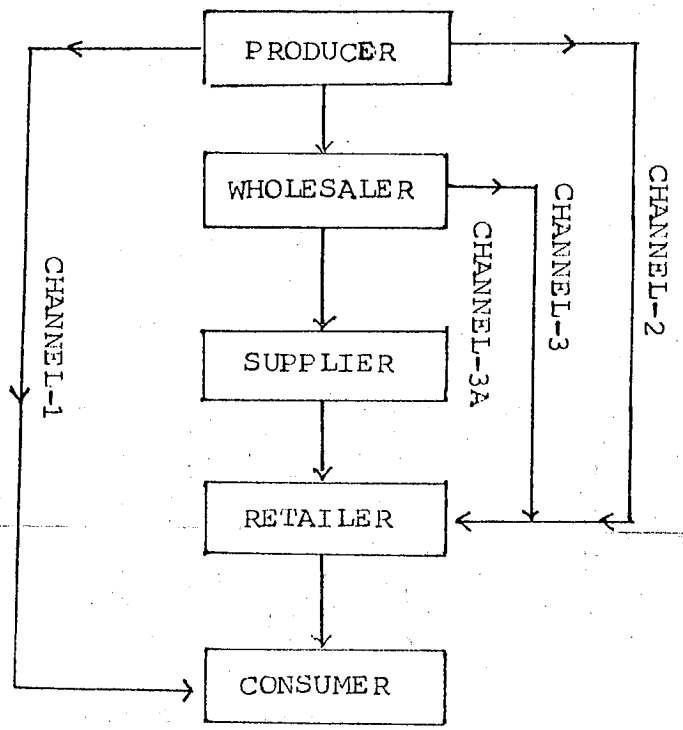
(Figures in percentage)

Size of farm	Percentage of total eggs marketed			Total
	P-C. (%)	P-R-C (%)	P-W-R-C (%)	
Small	2.00	5.00	93.00	100.00
Medium	1.00	3.50	95.50	100.00
Large	-	2.00	98.00	100.00

Now another intermediary namely supplier in between wholesaler and retailer entered in the market.

Thus the channel - Producer-Wholesaler-Supplier-Retailer-consumer is an extended version of the channel P-W-R-C. and controlled nearly 75 per cent of the marketing business of the Channel P-W-R-C. This intermediary works independently in the market.

MARKETING CHANNELS FOR EGGS



4.1.2 Price Spread

The difference between the price received by the producer and the price paid by the consumer and its spread over different marketing channels refers to the price spread. It varies according to the time, space, marketing costs incurred by the intermediaries and their profits.

The knowledge regarding price spread is useful to understand the marketing mechanism.

Table 4.2 showed that the producers share in consumer's rupee is highest in channel-1 (99.80). In this channel the producer sells the eggs directly to the consumer. As the intermediaries' number increased the producer's share decreased in channel-2 (89.50 per cent). It further declined in channel-3 and channel 3-A (85.71% each).

In channel-3A the total marketing cost comes to Rs.20.00 per hundred eggs. The major items of costs are retailer's margin (7.14%), wholesaler's margin (0.89%) transportation (1.5%), suppliers margin was 1.54% at wholesaler and supplier's level and labour charges were (0.97%). The breakage allowance at different level is charged and it amounts to 0.76 per cent of the total cost. The recurring miscellaneous expenditure of shop/rent, meeting, correspondence, electricity, telephone charges amounted to 1.75 per cent at wholesaler, supplier and retailer levels of the total cost.

Some retailers purchased directly from the wholesalers and got more retailer's margin by avoiding or eliminating supplier's charges from his profit. However, the price paid by the consumers remains the same as in the case of P-W-R-C channel. (Table 4.2)

Table 4.2 Break up of Price Spread (1997-98)

Functionary/ item cost	Channel-I		Channel-II		Channel- III		Channel- IIIA	
	Per 100 eggs	Per-cent-age	Per 100 eggs	Per-cent-age	Per 100 eggs	Percen-tage	Per 100 eggs	Percen-tage
A. Net price to the producer including margin of profit)	125.00	99.80	123.50	89.50	120.00	85.71	120.00	85.71
Expenses incurred by producer								
1. Packaging	0.25	0.20	0.20	0.14	0.20	0.14	0.20	0.14
2. Labour	-	-	0.05	0.03	1.10	0.79	1.10	0.79
3. Breakage	-	-	0.25	0.18	0.25	0.18	0.25	0.18
4. Other (postage meeting etc.)	-	-	-	-	0.45	0.32	0.45	0.32
B. Producer's sale/ wholesaler's purchase price	-	-	124.00	89.85	122.0	87.14	122.00	87.14
Expenses incurred by wholesaler								
1. Transportation	-	-	-	-	1.85	1.32	1.65	1.18
2. Breakage	-	-	-	-	0.45	0.32	0.35	0.25
3. Other(Telephone postage etc.)	-	-	-	-	0.60	0.43	0.50	0.36
4. Wholesalers margin	-	-	-	-	1.35	0.96	1.25	0.89
5. Labour	-	-	-	-	0.25	0.18	0.25	0.18
C. Wholesalers sale/ supplier's purchase price	-	-	-	-	-	-	126.00	90.00
Expenses incurred by supplier								
1. Transportation	-	-	-	-	-	-	0.50	0.36
2. Supplier's margin	-	-	-	-	-	-	1.50	1.07
D. Suppliers sale/ retailers purchase price	-	-	124.00	89.85	126,50	90.35	128.00	91.43
Expenses incurred by retailers								
1. Transportation	-	-	0.35	0.25	0.75	0.54	-	-
2. Breakage	-	-	0.50	0.36	0.50	0.36	0.50	0.36
3. Others cost (Wrappern ent of shop, electric bill, labour etc.)	-	-	1.20	0.87	1.50	1.07	1.50	1.07
4. Margin	-	-	11.95	8.67	10.75	7.68	10.00	7.14
Retailers sale/ consumer purchase price	125.25	100.00	138.00	100.00	140.00	100.00	140.00	100.00

4.1.3 Monthly fluctuations in the prices of eggs

As the price of any commodity is never constant the price of eggs also fluctuated with the time, season and supply. (Table 4.3)

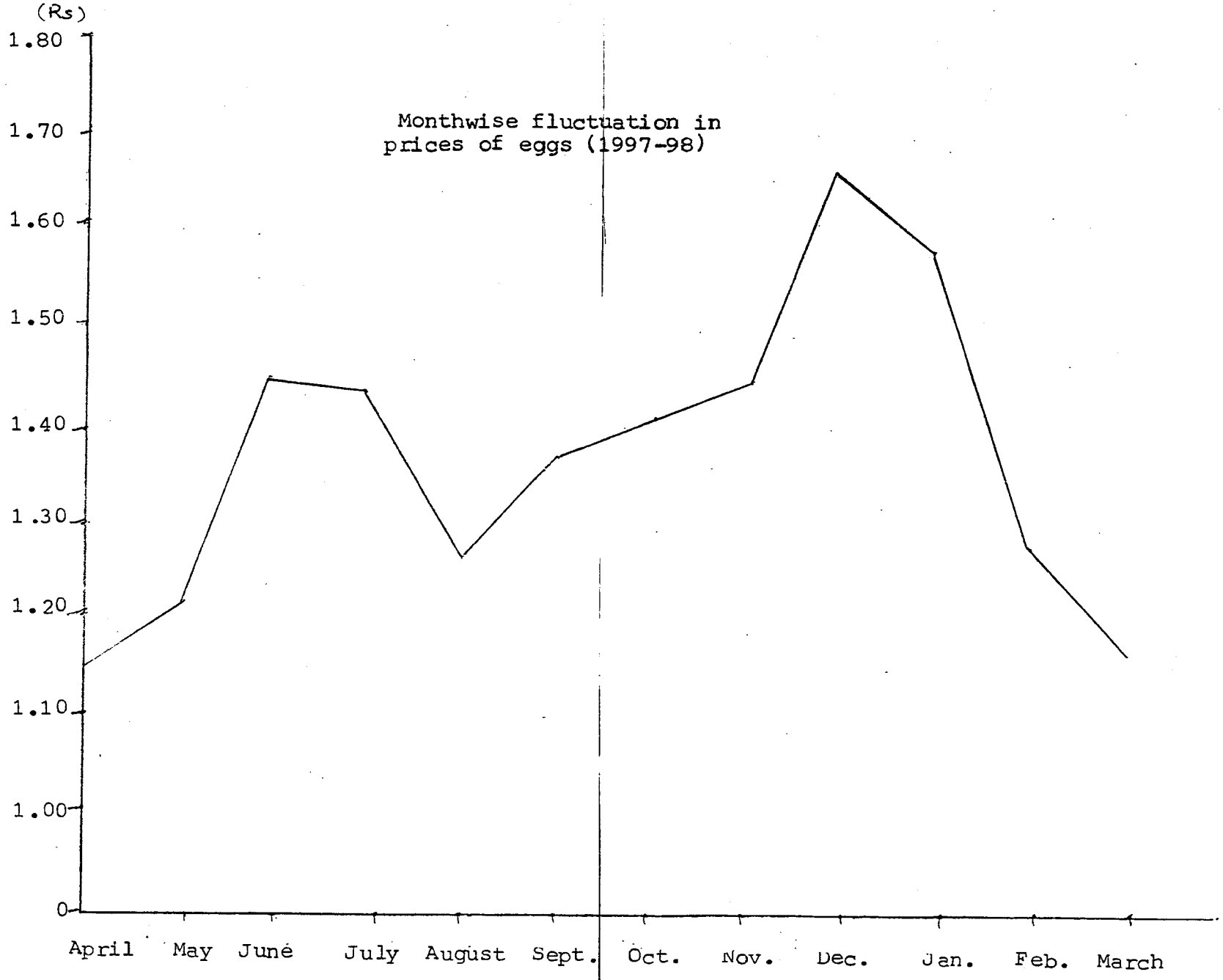
Table 4.3 Monthwise variation in eggs prices in 1997-98

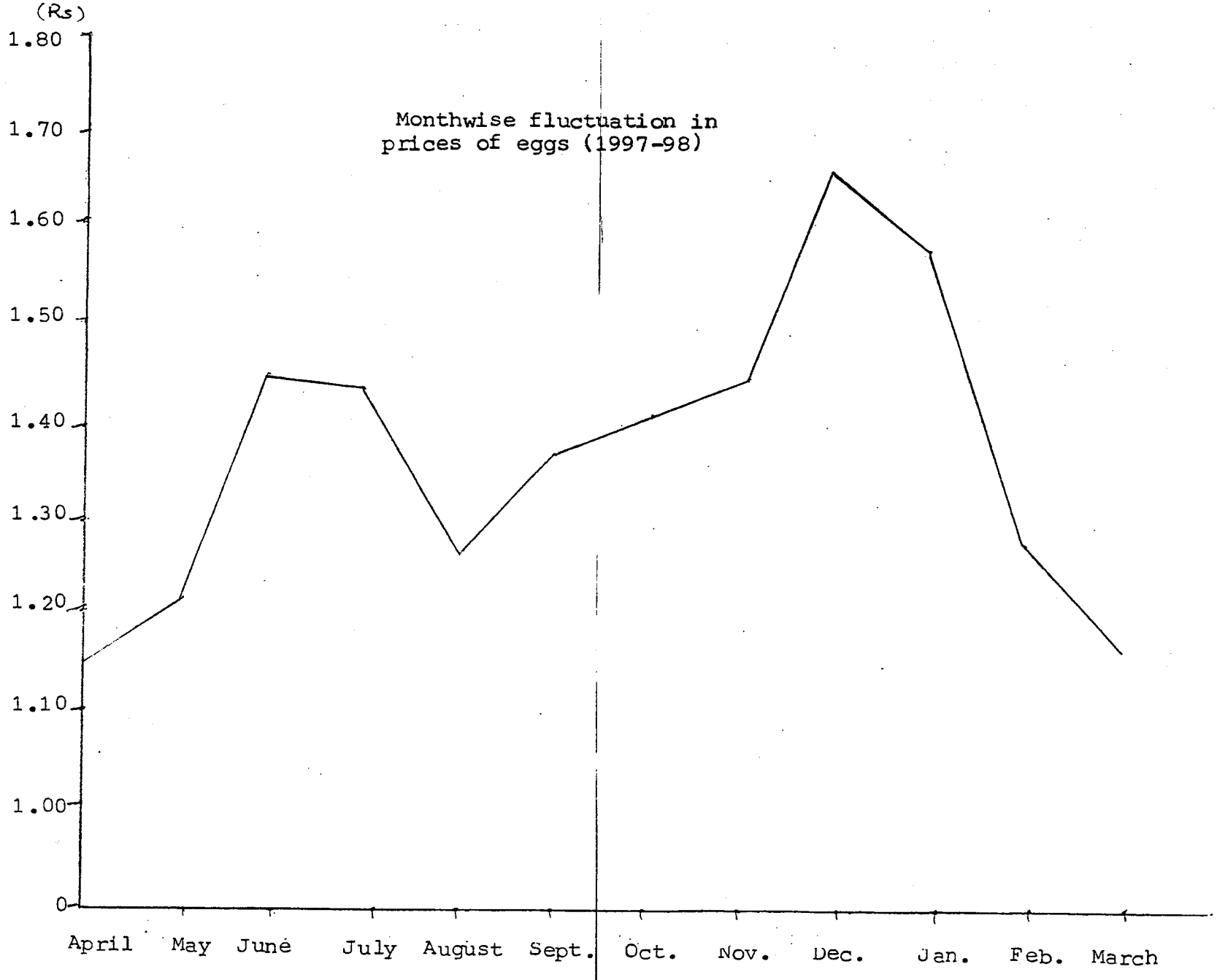
S. No.	Month	Average price (Rs.)	S.No.	Month	Average price (Rs.)
1.	April 97	1.15	7.	October 97	1.41
2.	May 97	1.23	8.	November 97	1.54
3.	June 97	1.44	9.	December 97	1.67
4.	July 97	1.43	10.	January 98	1.58
5.	August 97	1.26	11.	February 98	1.26
6.	September 97	1.36	12.	March 98	1.17

Source : NECC, Jabalpur.

It can be seen from the table that the price of eggs fluctuated between Rs.1.15 (lowest) in April,97 to Rs.1.67 (highest) in the month of December,97 during the period of study.

Generally the egg prices start rising from the month of June and are highest in December. The average egg prices were found higher during the months of November, December and January, because the demand for eggs starts rising during winter season, whereas, February, March, April, May and August months are generally lean months because of lower consumption of eggs.


(Rs)
1.80
1.70
1.60
1.50
1.40
1.30
1.20
1.10
1.00
0
Monthwise fluctuation in prices of eggs (1997-98)
April
May
June
July
August
Sept.
Oct.
Nov.
Dec.
Jan.
Feb.
March


(Rs)
1.80
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1.00
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Monthwise fluctuation in prices of eggs (1997-98)
April
May
June
July
August
Sept.
Oct.
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Jan.
Feb.
March

4.2 Marketing of broilers

4.2.1 Marketing Channels

In Jabalpur district broiler market is not as organised as the egg market and mainly 3 channels are operating. These are -

1. Producer - Consumer
2. Producer - Retailer - Consumer
3. Producer - Wholesaler - Retailer - Consumer

1. Producer - Consumer

This channel exists only where consumer has direct access to the broiler farms. Small broiler farms sold 20 per cent of their produce through this channel. Medium farms sold 12 per cent of the produce likewise. Large farms did not contribute any thing in this channel. Moreover, the large farms operated far from the access of the consumers.

2. Producer- Retailer - Consumer

This channel was popular among small and medium size farmers who had transport facility and had interest in marketing. This channel of marketing was preferred especially by small size farms which sold 80 per cent of their produce through this channel. Medium size farms sold 48 per cent of the produce through this channel. Large farms marketed only 4 per cent of the produce through this channel. In this channel farmers themselves took the retailing business also and got higher profits for their produce through retailers margin.

3. Producer - Wholesaler - Retailer - Consumer

All the big size broiler farmers preferred this channel keeping long term business prospects in their minds because this channel provided them the less or no marketing burden, year long assured market and timely or spot payment facility.

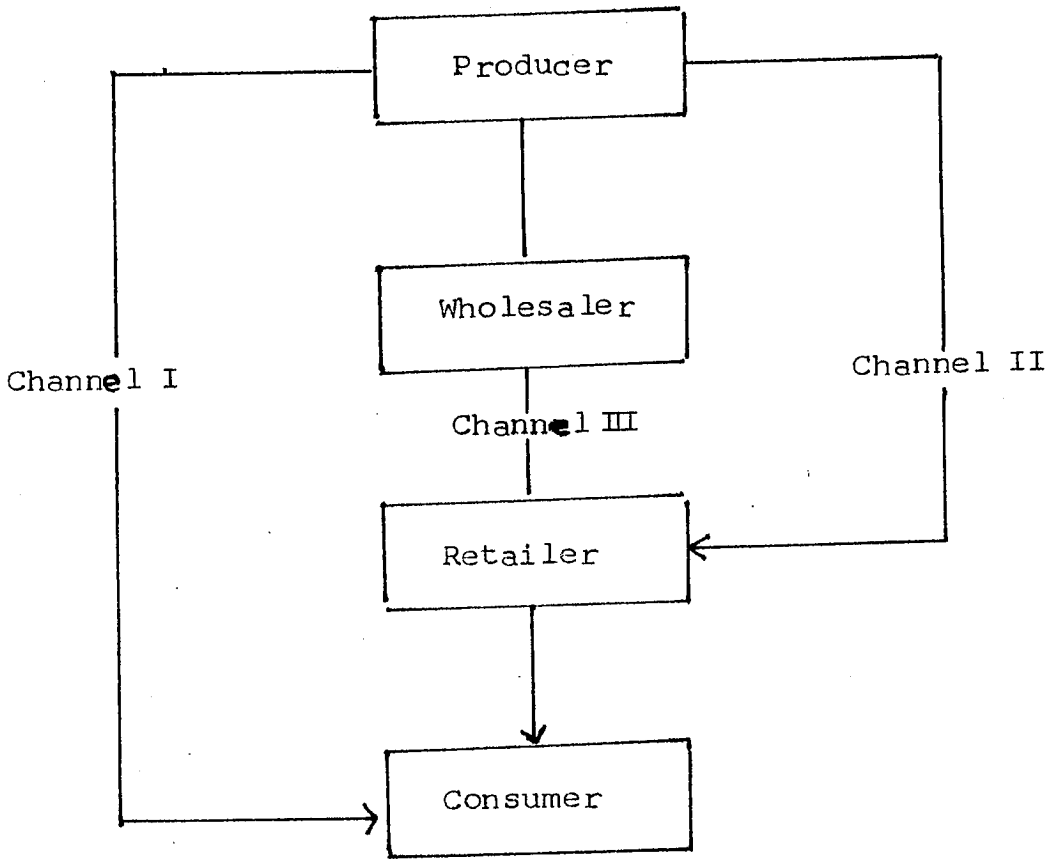
This channel controlled more than 90 per cent of the total broiler produce of large farms. (Table 4.4)

Table 4.4 \ Different marketing channels for broilers, selected farms, Jabalpur district, M.P.

Size of farms	Percentage of total broilers marketed			Total (%)
	P-C (%)	P-R-C (%)	P-W-R-C (%)	
Small	20.00	80.00	-	100.00
Medium	12.00	48.00	30.00	100.00
Large	-	4.00	96.00	100.00

Source : Mahakoshal, Broiler Farmers Association

Marketing Channels for broilers



4.2.2 Price spread :

The study showed that the producers share in consumer's rupee is highest in channel I (99.70%). In this channel the broiler farmers especially smaller farmers sold their produce (broiler) directly to consumers, because they operated within the thickly populated areas like consumer or hotels etc. As the intermediaries like retailers and wholesalers increased, the share of broiler farmers decreased in channel II (80.00 per cent) and it further declined to 79.09 per cent in Channel III which is the most active channel and commanded 90 per cent share of the total broiler market.

In this channel the total cost of marketing came to Rs.12.70 per bird of 1.5 kg body weight. The major items of costs were wholesaler margin (7.41%) and retailers margin (9.07%). These two alone increased the marketing cost by Rs.10 (16.48%) without increasing any efficiency in the marketing of broiler and rest by the other items including labour, transport, electricity/ telephone and rents etc.

Some retailers purchased broilers directly from the farmers and got higher retailers margin by circumventing the wholesalers margin and costs incurred by wholesalers.

Thus it could be concluded that the producer receive roughly the same price and it does not vary due to marketing channels in the marketing of broilers. On the other hand the consumer's could purchase at less price if approach the farmer directly. Study also revealed that the dressed chicken costs the consumer more due to wastages (beak, legs, intestines, feathers, etc.) which accounted for nearly 300 to 350 gms. of a bird of 1.5 kg body weight (Table 4.5).

Table 4.5 Break-up of price spread of a broiler

Functionaries/ Item cost	Channels I		Channels II		Channels III	
	Rs.	%	Rs.	%	Rs.	%
A. Net price to the producer (including margin of profit)	49.00	99.50	48.00	80.00	48.00	79.09
Expenses incurred by producers						
1. Labour	0.20	0.40	-	-	-	-
2. Other expenses	0.05	0.10	0.15	0.25	0.10	0.16
B. Producer's sale/ wholesalers purchase price	-	-	-	-	**48.10**	**79.25**
Expenses incurred by wholesaler						
1. Labour	-	-	-	-	0.10	0.16
2. Transportation	-	-	-	-	0.25	0.41
3. Other expenses (Electricity/ Telephone/ Postages etc.)	-	-	-	-	0.05	0.08
4. Profit margin	-	-	-	-	4.50	7.41
C. Wholesaler's sale/ retailer's purchase price	-	-	48.15	80.25	53.00	87.31
Expenses incurred by retailers						
1. Labour	-	-	0.30	0.50	0.35	0.58
2. Transportation	-	-	0.70	1.17	0.50	0.82
3. Other expenses (Rent of shop, Telephone/Electricity charges/ Postage etc.)	-	-	1.40	2.33	1.35	2.22
4. Margin of profit	-	-	9.45	15.75	5.50	9.07
D. Retailers sale/ consumer's purchase price	49.25	100.00	50.00	100.00	60.70	100.00
(Dressed chicken)	-	-	(74.00)	-	(74.70)	-

4.2.3 Monthwise Variation in the Prices of Broilers

As the price of any commodity is never constant and fluctuates between seasons the same is also true in the case of broiler prices.

Table 4.6 Monthwise variation in broiler prices Jabalpur district, M.P.

S.No.	Month	Price(Rs.)*	S.No.	Month	Price (Rs.)*
1.	April 97	38.0	7.	October 97	37.0
2.	May 97	32.3	8.	November 97	37.0
3.	June 97	38.4	9.	December 97	37.0
4.	July 97	39.0	10.	January 98	39.5
5.	August 97	34.0	11.	February 98	39.5
6.	September 97	33.4	12.	March 98	39.5

* Per kg. of live bird

The above table indicated that average monthwise broiler prices fluctuated between Rs.32.3 in the month of May to Rs.39.5 in the months of January, February and March. However, the fluctuation was not as volatile as in the case of eggs wher prices fluctuated between a very wide price band.

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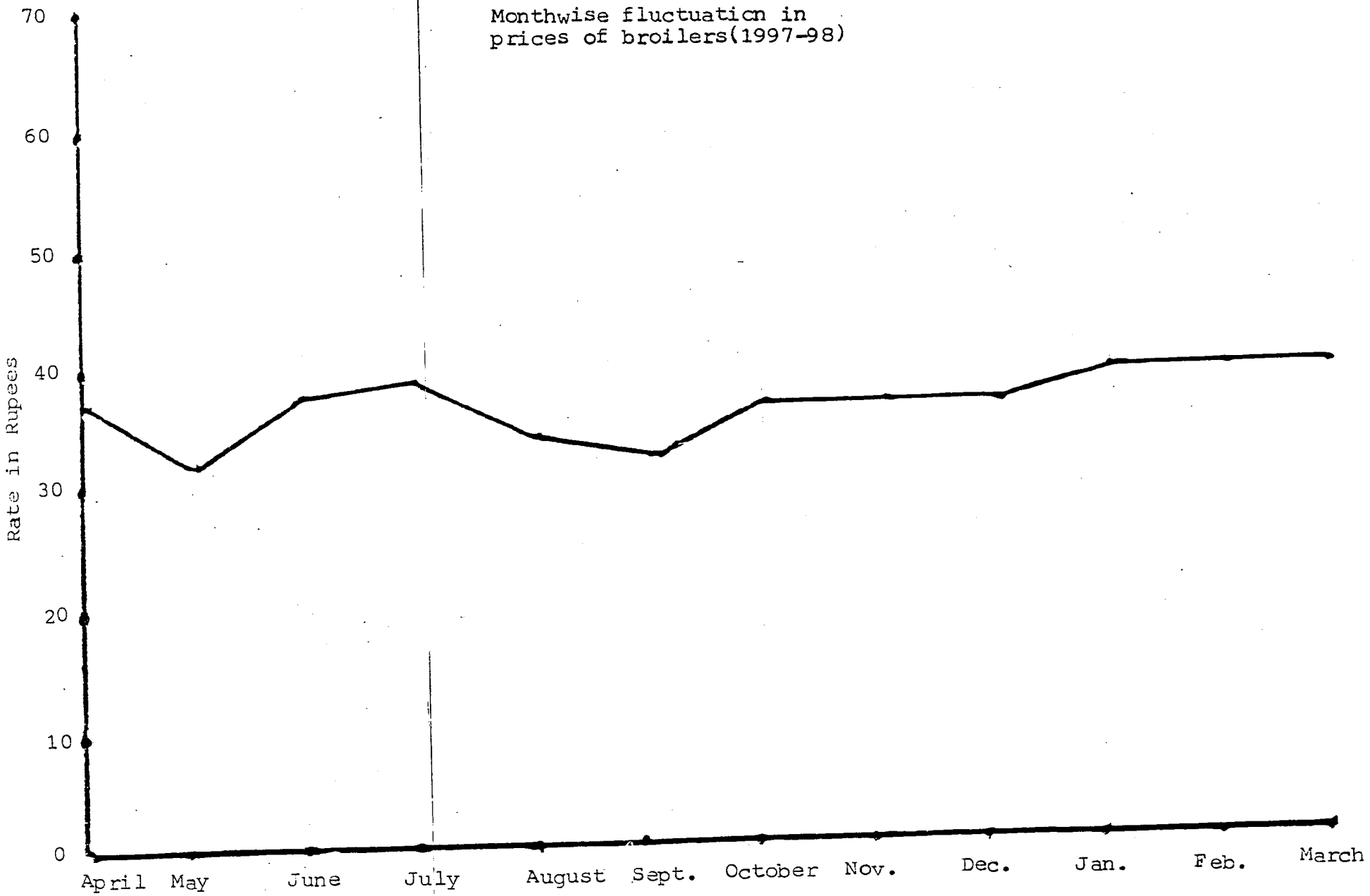
Monthwise fluctuation in prices of broilers(1997-98)



CHAPTER-V

SUMMARY AND CONCLUSIONS

5.1 Poultry Farms in Jabalpur District

In Jabalpur district two types of poultry farms are in operation (1) Organised farms comprising commercial layers and broiler farms and (2) Unorganised farms mainly backyard poultry units. In the organised units the Babcock breed is most popular and majority of unorganised farmers preferred only deshi breed for both eggs and meat purpose.

5.2 Socio-Economic Background of the Poultry Farms

Forward castes like Brahmin, Kshatria, Kayastha, Rajpur, Sikh, Muslim and Christian took this activity mainly and none of the farmers from scheduled castes and scheduled tribes communities took to poultry on an organised basis.

Poultry farmers were mostly educated and from the financially well off families and all of them were well versed with poultry business.

However, in unorganised sector farmers mostly belonged to lower strata of society and their education standards were very low. Moreover, farming was their main occupation.

5.3 Capital Investment

On an average, per bird capital investment made by organised farmers on housing, land and equipments came to Rs.130.70, Rs.120.85 and Rs.117.00 for small, medium and large size layer farms respectively and Rs.6.78 on large size broiler farms. All the small and medium size broiler farms were leased-in farms.

On unorganised farms, the investment on sheds, equipments etc. was negligible irrespective of farm size.

The size of farm and capital investment were negatively correlated on the organised farms.

5.4 Economics of Poultry Production

On the organised poultry farms the total cost of production came to Rs.337.35, Rs.372.70 and Rs.367.60 for small, medium and large size layer farms respectively. The cost of production of the layer birds and broilers was dominated by working/operational costs and accounted for more than 90 per cent. (91.93 per cent on small, 92.15 per cent on medium and 92.44 per cent on large farms) leaving the balance as fixed cost. Again, in the variable cost the feed cost alone accounted for 85 per cent followed by interest on working capital (around 10 per cent), labour cost (around 2 per cent) and medicines etc. (around 1.5 per cent).

The cost components of the broilers revealed that the per bird cost of production was almost equal on all the farms irrespective of size of farms (Rs.38.90, Rs.40.15, Rs.40.05 for small and medium lease-in and large own and leased-in broiler farms respectively).

On backyard poultry farms all the birds were reared without much investment on fixed and variable items. Normally, backyard poultry birds are deshi birds which survive on food pickings from surroundings supplemented by food left overs. Moreover, these birds are resistant to various poultry diseases and therefore, are not given medicines/vaccines.

5.5 Production

The average production of eggs per bird per cycle came to 280. There was no significant difference in the average production of eggs per bird per cycle on different sizes of organised farms as all the farms reared same "Babcock" breed. However, it is not true in the case of backyard farms where the per bird egg production varied from 137 to 155 eggs because some town based farms had inducted exotic breeds also.

5.6 Receipts

The return per unit of layers and broilers consisted mainly of sale of eggs meat, as the case may be plus market value of culled birds in the case of layers. The value of manures and empty gunny bags is also treated as income. In the case of layer farms, the market value of eggs produced and the culled birds are the dominant sources of income and these together accounted for more than 98 per cent of the total receipts in all sizes of farms. In the case of organised broiler farms the sale of birds alone accounted for the lion's share and contributed 99.4 per cent on small leased-in farms, 98 per cent on medium leased-in-farms, 97.77 per cent on large own farms and 97.87 per cent on large leased in farms.

On backyard poultry farms the revenue came mainly from the sale of eggs and sale of the unproductive birds for meat purpose. The meat/eggs produced on the backyard farms commanded higher price in the market because customers have a liking for deshi eggs and meat over hybrid layers' eggs and meat.

The net return per bird on organised layer farms came to Rs.8.30, Rs.16.45 and Rs.20.85 for small, medium and large farms respectively. In the case of broiler farms the net return per bird on small and medium leased in farms and large own farms and large leased in farms came to Rs.11.15, Rs.10.00, Rs.8.80 and Rs.9.35 respectively. The absence of any own farms revealed the fact that due to paucity of finance small and medium farmers were not interested in establishing own permanent infrastructure and preferred leased in old farms.

On unorganised farms the net return per bird was quite high as compared to the organised layer farms (Rs.255.00, Rs.255.95 and Rs.259.85 for small medium and large farms). This is because the cost incurred on rearing the birds was very meagre or almost negligible as against the higher production cost incurred by organised farms. Therefore, all the return was actually a bonus to the backyard poultry farmers. Even the scrap value (cull birds) was many times higher then the rearing cost.

5.7 Net Return per Egg per Kg. and Body Weight of Broiler

The net return per egg came to Rs.0.19, Rs.0.22 and Rs.0.24 on small, medium and large size layer farms respectively. The net return per kg. of body weight came to Rs.7.95, Rs.7.15, Rs.6.25 and Rs.7.00 for small leased-in, medium leased-in, large own and large leased-in farms respectively.

5.8 Marketing of Eggs and Broilers

In Jabalpur district, mainly 4 channels operated viz. (i) Producer-Consumer, (ii) Producer-Retailer-Consumer, (iii) Producer-Wholesaler-Retailer-Consumer and (iv) Producer-wholesaler-Supplier-Retailer-Consumer. The channel Producer-Wholesaler-Retailer-Consumer or (P-W-R-C) and its extended version Producer-Wholesaler-Supplier-Retailer-Consumer(P-W-S-R-C) commanded 75 per cent share of the total market.

Similarly, in the marketing of broilers mainly three channels (1) Producer-Consumer (2) Producer-Retailer-Consumer and (3) Producer-Wholesaler-Retailer-Consumer were the main channels of marketing.and like eggs market, Producer-Wholesaler-Retailer-Consumer channel was the most popular channel and dictated the terms in the broiler market.

5.9 Price Spread

Direct sale of eggs by producer to consumer resulted in the 99.80 per cent producer's share in the consumer's rupee. In the P-R-C channel 10.50 per cent represented the marketing cost and margin of intermediaries. The same behaviour was also observed in P-W-R-C and P-W-S-R-C where the marketing cost and margin of intermediaries came to 14.29 per cent for each channel.

In the broiler market which is not as developed as the egg market producers received highest percentage share in consumers rupee in Producer-Consumer channel (99.50%) as compared to other channels. The other two channels spread the price of a broiler by 20 per cent.

5.10 Price Fluctuation

During 1997-98 monthwise price variation of eggs and broiler in Jabalpur ranged from Rs.1.15 to Rs.1.67 per egg as per the NECC rates and Rs.33.40 to Rs.39.50 per kg. of live bird. Study also revealed that price fluctuation was more volatile in eggs market than in broilers market.

Conclusions

Commercial units of layer and broiler production particularly larger farms are well managed and cost effective. However, smaller units are unable to benefit from the economics of large scale and are on the verge of fast disappearing. Smaller units are also unable to support the farmers financial needs due to lower net profit per unit.

Backyard poultry farming is a social phenomenon rather than an economic preposition. It needs to be experimented on large scale and on large number for full utilisation of resources without additional overhead cost because backyard poultry has a tremendous scope and has a potential to support the farmers dietary and financial needs.

Broiler market is not as organised as the egg market and it needs to be addressed properly. Broiler market is functioning without any effective price intervention mechanism.

Suggestions

The analytical results and the discussion on emerging policy issues lead to following recommendations -

(1) Poultry farming in M.P. in general and in Jabalpur in particular has tremendous scope due to relatively cheaper land, labour input originating from tribal areas and should be exploited.

(2) Rural areas from where there is a seasonal migration of labour in search of jobs need to be well connected with roads and other modes of communications so that marketing net work may be strengthned for the growth of poultry farming.

(3) Regional Rural Banks (RRB's) should explore the possibilities of financing even smaller units for unemployed youths, landless workers and farm women as a source of livelihood and additional income.

(4) The infrastructure and training facilities should be created especially for the backyard poultry farmers.

(5) Storage facilities for feed ingredients/eggs/broilers should be created to avoid the losses due to seasonal fluctuations.

(6) Quality feed and vaccine should be made available in plenty and at reasonable rates.

(7) All the benefits extended to the agricultural sector should be extended to this sector such as 1) exemption from income tax 2) concessional electricity tariff 3) land and labour laws as applicable to agriculture and 4) concession/exemption from sales tax, octroi, etc.

(8) A national thrust and multi pronged initiative are necessary to make available cheaper inputs for poultry ~~with particular~~ emphasis on feed ingredients like maize. Surplus wheat available with food corporation of India can be made available for poultry feed.

(9) In broiler farming the system of "all in" and "all out" should not be the criterion for finance to broiler units by NABARD/Banks but the relay system of raising broiler should also be equally considered.

(10) Exotic breed which are fast growing and productive should be encouraged and popularised with adequate training facilities and technical know how from Agricultural University particularly for the tribal and rural areas.

(11) The state poultry farms should be developed as good training centres particularly for young rural unemployed youths or should be transferred to State Agricultural

Universities where qualified and experienced staff is available for conducting job oriented trainings to meet the man power requirements of the poultry sector because this business demands high quality trained personnel.

(12) Poultry marketing especially broiler marketing is not well organised and the absence of "N.E.C.C.".like organisation worsened the situation further. Moreover, due to absence of any practical solution (technologies) the withholding of broilers during slump is not practically possible and forced many small farmers out of the business. Therefore some organisational set up like N.E.C.C. for broilers marketing should also be formed.

(13) Processing units for making egg powder and meat processing units should be encouraged and farmers should also be encouraged to integrate the chicks with quail, ducks turkey in their production stock to minimise any unforeseen losses and maximise the profit.

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ANNEXURE-I

COMMENTS & SUGGESTIONS BY
A.E.R.C. ALLAHABAD

Chapter I : The introductory (1.1) and the Poultry Development In India (1.2) have not been supported by the requisite secondary data. Importance of Poultry (1.3) is satisfactory. But in the sub-heading- Poultry in Madhya Pradesh (1.4) it is surprizing that the mention about organized and unorganized sectors is not at all described. Regarding objectives (1.5) the first two objectives are correctly put and covered. The 3rd objective must be corrected as to study the various marketing aspects. The 4th objective is not at all covered, hence it may be removed. The design of study (1.6) must be elaborated and clarified for both organized and unorganized sectors separately. About 25 back-yard poultry farmers nothing is mentioned. About method of analysis (1.7) it is again surprizing that only costs are touched. There must be full description of total analysis done in the report. The reference period of the study is also not clear as it is not covering the production and marketing of poultry products fully. Thus, it should be clarified.

Chapter II : The profile of Jabalpur district (2.1) is not covering the statistics (data) on poultry production etc. The poultry farms in Jabalpur (2.2) should have the statistics on organised and unorganised farms. The sample farms (2.3) should be detailed clearly mentioning about the bird cycle, categories (size-gro ups) of unorganised farms and accordingly Table 2.2 must be changed. The socio-economic background (2.4) for organised and (2.5) for unorganized must be revised by clarifying the size-groups etc. and in all the tables percentages may be calculated for better representations. The capital investment (2.6) must be calculated on per farm, per bird and per egg basis for both sectors.

Chapter III : The economics of Poultry Production as mentioned Economics of Commercial Layer Farms (3.1) should be firstly described about all the categories of samples undertaken and then category-wise costs and production must be analysed. The bird-cycle (72 weeks) must be mentioned clearly in the reference period of the study. The costs, gross receipts and net return (3.1, 3.2, 3.3) must be analysed on per farm, per bird and per egg basis per bird cycle in cases of both the sectors. In cases of unorganised farms the size-groups of farms i.e. small, medium and large must be clarified in terms of number of birds in each size-group like that of organised farms.

Chapter IV: The Marketing of Poultry Products mentioning Marketing of Eggs (4.1), Marketing Channels (4.1), Price spread (4.12), Price Fluctuations (4.13) etc. must be analysed for all i.e. chicks, birds (both layers and broilers) and eggs on the basis of per bird cycle if it has been the basis of calculations. In this chapter only the marketing of eggs and broilers are analysed. It must include chicks, broilers, layers, eggs and other products to cover the objectives fully. Objective No.4 i.e. to study the various problems by farmers..... poultry business has been left untouched. It has not been covered at all. Thus, it should be deleted.

Chapter V: The Summary and Conclusions, there must be mentions about only the summary of findings and suggestions based on these fingings and conclusions drawn from the findings of the study when there is a separate executive summary too of this study.

ANNEXURE II

Notes on Action taken on the Comments on the Study Economics of Poultry Production and Marketing in Jabalpur district, M.P.

S. No.	Comments	S. No.	Action taken
	Chapter I		
1.	The Introductory (1.1) and the Poultry Development in India (1.2) have not been supported by the requisite secondary data.	1.	Secondary data not available.
2.	In sub heading Poultry in Madhya Pradesh (1.4) mention about organised and unorganised sectors is not described.	2.	This is not possible as the data was not available for organised and unorganised poultry separately.
3.	The third objective must be corrected as to study the various marketing aspects.	3.	We have restricted the study only to analyse eggs and broiler marketing channels.
4.	The 4th objective be removed.	4.	Removed
5.	The design of study (1.6) must be elaborated and clarified for both organised and unorganised sectors separately.	5.	Incorporated as per suggetion.
6.	About 25 backyard poultry farmers nothing is mentioned about method of analysis(1.7).	6.	Incorporated.
7.	Only costs are touched. There must be full description of total analysis done.	7.	--
8.	The reference period of the study is not clear as it is not covering the production and marketing of poultry products fully.	8.	The clarification regarding reference period and period covering production and marketing have been described in para 1.9 on page 6A.
	Chapter-II		
9.	The profile of Jabalpur district is not covering the statistics (data) on poultry production etc.	9.	Not available
10.	The poultry farms in Jabalpur (2.2) should have the statistics on organised and unorganised farms.	10.	The number of total organised farms in the district has now been given, The number of total unorganised farms was not available.

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S. No.	Comments	S. No.	Action taken
11.	The sample farms (2.3) should be detailed clearly mentioning about the bird cycle, categories (size groups) of unorganised farms and accordingly table 2.2 should be changed.	11.	Given
12.	The Socio-economic background (2.4) for organised and (2.5) for unorganised must be revised by clarifying the size groups etc.and in all the tables percentages may be calculated for better representation.	12.	Since the figures are too small the percentage need not be mentioned size groups mentioned.
13.	The capital investment (2.6) must be calculated on per farm, per bird and per egg basis for both sectors.	13.	All the calculations have been done according to per farm and per bird basis. The figures in table 2.9 given out of paranthesis are for per farm and those in parenthesis are for per bird. On the advice of poultry experts the calculations were not done per egg.
	Chapter-III		
14.	Economics commercial layer farms (3.1) should be firstly described about all the categories of samples undertaken and then categorywise costs and production must be analysed.	14.	This has been done and described on page 18,19, and 20 and given in tables 3.1 to 3.5.
15.	The bird cycle (72 weeks) must be mentioned clearly in the reference period of the study.	15.	See para ~~1.9 page 6A.~~
16.	The costs, gross receipts and net return (3.1, 3.2, 3.3) must be analysed on per farm, per bird and per egg basis per bird cycle in cases of both the sectors.	15.	On the suggestion of poultry experts the measures have been calculated on per bird basis.
17.	In cases of unorganised farms the size groups of farms i.e. small, medium and large must be clarified in terms of number of birds in each size group like that of organised farms.	16.	Incorporated.

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S. No.	Comments	S. No.	Action taken
	Chapter IV		
18.	The marketing aspects must be analyses for all i.e. chicks, birds, (both layers and broilers) and eggs on the basis of per bird cycle.	18.	We have restricted the study **only to analyse eggs and broiler marketing. No chick marketing system exists in the district.**
19.	Objective No.4 i.e. to study the various problems by farmers has been left untouched. It should be deleted.	19.	Deleted.
	Chapter V		
20.	In summary and conclusions, there must be mention about only the summary of findings and suggestions based on **findings and conclusions drawn from the findings of the study.**	20.	Revised accordingly.

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