

CHAPTER II

REGIONS UNDER STUDY : A BRIEF BACKGROUND

2.1 The three States : A brief Account

As noted earlier, the sample villages were selected from three districts of three different States namely Andhra Pradesh, Gujarat and Madhya Pradesh. Before embarking on an analysis of the various socio-economic aspects of the sample villages, it will not be out of place to briefly examine the variations existing in the three States and their districts from where the sample of villages have been drawn. This, it is hoped, will make the comparative analysis more meaningful.

2.2 The State of Andhra Pradesh

The State of Andhra Pradesh has a total geographical area of 2,76,700 square kms. constituting about 8.4% of the total area in the country. The State has an estimated human population of 43.5 million (1971 census) representing about 7.9% of the total population of India. The population density is 157 per square meter which is less than that of the All India Average of 177 per square kilometer (Source: India 1977 & 78). The State has 23 revenue districts. The climate of Andhra Pradesh is of tropical monsoon type. The average rainfall of the State is about 896 mm to 1000 mm.

Agriculture is the main occupation of the rural population in the State. Agriculture constituted approximately 45% of the total State's income during 1979-80. About 70% of the total working population is engaged in agriculture which comprises of

32% cultivators and 38% agricultural labourers. Small land holdings are predominant in Andhra Pradesh. About 83% of the cultivators have operational land holdings of less than four hectares. Average land holding size per cultivator is 2.51 hectares. (Source: Statistical Abstract - A.P.1979). Of the total area sown approximately 80% was under food crops and 20% under non-food crops. The major food crops are rice, jowar, bajra and pulses, groundnut, cotton, tobacco and coconut are the major non-food crops.

Of the total bovine population of 62.4 lakh (as per 1977 live-stock census), 31.8 lakh are buffaloes and 30.6 lakh are cattle. The only important breed of milch cattle is Ongole which is a dual purpose animal (work and milk production) with its origin from the districts of Nellore, Guntur, Krishna and Prakasham. The remaining bovine population is of non-descript type.

2.3 GUJARAT

The State of Gujarat, located along the north western coast spread over an area of 19.6 million hectares had an estimated population of about 32.2 million in 1978-79. It has a coast line extending over 1600 kms. with a number of ports. The soils range from sandy alluvium/sandy loam to medium deep black soils. Gujarat has a tropical monsoon climate. Annual rainfall ranges from less than 300 mm in the North West to over 2000 mm in a small area in the South East with most parts of the State receiving 500-800 mm.

The State is divided into 19 revenue districts comprising 184 talukas and has 8 cities with more than 1,00,000 population (1971).

About 30.5% of its population is living in towns and cities. The State has a well developed road net-work and some 90% of the villages are served with reasonably good all-weather roads and are located within 3 kilometres from a regular bus route.

Gujarat has a fairly well developed agricultural base, which contributes 30 to 40% of Gujarat's State income and employs about 65% of the labour force (31% of the total population). The State has about 18,300 inhabited villages (1971) having 69.5% population of the State. The average farm size in Gujarat is 4.1 hectares but there are large variations from one district to another. The present farm size distribution is largely determined by local agro-climatic conditions, and farms in the low rainfall areas are significantly larger than in rainfall areas. About 9.8 million hectares of land is under cultivation. Milch bovine density is about 0-4 cows per hectare of cultivated land. 50% of the cultivated area is under cash crops. The climate and soils are suitable for cotton, groundnut and tobacco. Gujarat produces about one-quarter of India's cotton and groundnuts and one-third of its tobacco. The area under tobacco (90,000) is small but cotton and groundnut are the most widely grown in the State, each accounting for about 1.8 M hectare of the cropped area. Cereals - primarily pearl millet (1.7 M ha.), sorghum (1.1 M ha.), wheat (0.7 M ha.) paddy (0.5 M ha.) and maize (0.3 M ha.) and pulses (0.4) account for less than half the cropped area. About 15% of the cropped area (1.58 M ha.) is presently irrigated.

SOURCE: GUJARAT DAIRY DEVELOPMENT PROJECT UNDER OF-II

Gujarat is the home of the well known Gir and Kankrej breeds of cattle and Surti, Jaffrabadi and Mehsana breeds of buffaloes. Of the total milch bovines population of 3.8 million (1978-79), some 1.7 million are milch cattle and 2.1 million are the milch buffaloes. Milk production in the State is based mainly on feeding of crop residuals and vegetation from non-cultivable land and irrigation bunds. Fodder production is practiced mainly by progressive farmers. Average daily milk production in the State is estimated at 6-7 million litres of which 21% is handled by the organized modern dairy sector.

2.4 MADHYA PRADESH

The State of Madhya Pradesh is the largest State in the Country and is land-locked in the centre of India. The State has an estimated population of 417 lakh (as per 1971 census) and constituted about 7-6% of India's population. It is the 6th largest State in the estimates of population. The population density of the State is 94 sq.km as against All India Average of 177 (1971). Out of the total population in the State, about 16.3% was urbanised in the year 1971. The State is divided into 45 revenue districts and comprises of 76,914 inhabited villages.

Madhya Pradesh has a tropical monsoon climate. The average rainfall ranges from 668.3 mm in the north to 1623.2 mm in the South. The State lacks well developed transportation infrastructure. The total rail line and road length are 5709 km and 5346 km (1977) respectively. Only 30% of the inhabited villages are served with reasonably good all weather roads.

Although agriculture is the main occupation of the rural population the State is agriculturally less developed as compared to the other states of the Country. Out of the total area, 42.1% is under cultivation, 32.5% under forest and 25% of the area is not available for cultivation - being uncultivable land, cultivable waste and fallow lands. In the year 1976 there were 60,00,000 operational land holdings in the State. The average land holding size was 3.6 hectares as against the All India Average of 2.3 hectares. Of the land holding per cultivator, area sown was 2-3 hectares. There are 80-84 lakh cultivators, 40:62 lakh agricultural labourers and 31:48 lakh workers in the State.

Medium black soils dominate the North West region with portions of alluvial soil. Red and yellow soils are mostly found in the South East region. The ~~S~~oils in the North East region are mixed red and black while the soils in the South are mainly light black soil with patches of deep black soil and gravelly soil. Agriculture contributed 56.6% of the State income in the year 1977-78. The major food crops grown in the State are rice, wheat, and jowar. The other important crops include maize, bajra, kodonkutki, gram and other pulses. Cotton, groundnut and fodder crops are also grown. In 1977-78 a total of 216.20 lakh hectares area was sown under various crops. 175.36 lakh hectares was under the food crops and the remaining was under non-food crops. In the year 1977-78, 8.33 lakh hectares of land was under fodder crops. The major fodder crops include jowar, bajra, berseem, napier, lucenn, oats and cowpea. The State does not have well developed irrigation facilities except for the Chamble Valley Project in the North-West. Only 8.2% of the gross crop area

in 1971-72 was irrigated. The other sources of irrigation are canals, tanks and tube wells.

In the agricultural environment, dairying although a subsidiary activity, provides many farmers with their only source of cash income. The State has a bovine population of 104 lakh milch animals (1977). Milk production in the State is based mainly on feeding of crop residues and chance grazing. A large number of small and marginal farmers maintain one or two milch animals on an average. Concentrate feeding is rarely practiced. Fodder production is mainly practiced by the progressive farmers. Average daily milk production is estimated to be 43.00 lakh litres.

Dairy animals are mainly low yielding non-discript native types. Haryana, Malvi, Gir and Gaolao are the important breeds of cattle with lactation yield ranging between 1,000 to 1,500 litres and inter-calving period ranging between 400 to 500 days. The other breeds of cattle found in the State are Nimari and Kenkatha. They are poor yielders and the inter-calving period is much more than 500 days. Among the buffalo breeds, Bhadawari and Murrah are the most common. The average lactation yield in both the breeds is about 1,000 litres and inter-calving period is a round 600 days. Bhadawari breed is famous for its high percentage of fat (13% and above). The average milk yield in case of cows is 0.4 litre/day and 1.0 litre/day in case of buffaloes.

2.5 The Districts compared

From the brief descriptions of the states presented in the preceeding pages, it is clear that many diverse physical, technical socio-economic and institutional environments are represented.

Guntur is agriculturally the most progressive and demographically most densely populated of the three districts. Irrigated agriculture has long been practiced. Use of new farm inputs is fairly widespread and consequently crop yields are high. Marginal and small farmers predominate in the district.

Bhopal is the largest of the three districts in terms of area. The methods of crop and livestock production are traditional. The land holdings are large but crop yields are low. Cows outnumber buffaloes and the seasonal variation in milk production is low. Village dairy cooperatives are the only channel for disposal of fluid milk in the rural areas and thus competition from private milk vendors is almost non-existent. Large scale implementation of OF-I is of relatively recent origin.

Surat occupies an intermediate position between Guntur and Bhopal in terms of agro-ecological and technical features. It is a buffalo dominated area and has the highest milk production of the three districts. The cooperative union was established long before the OF-I was launched in the district. Competition from private milk vendors is not entirely absent. The Gujarat State Govt. has given greater support of OF-I to Gujarat than to its counterparts in Madhya Pradesh and Andhra Pradesh.

2.6 The Seven Sample Villages

The sample of the current field survey consisted of 7 villages

chosen from 3 different States of the country. Of these 3 were cooperative villages namely Krishnayapalem (Andhra Pradesh), Anawal (Gujarat) and Khaikheda (Madhya Pradesh). The other 4 villages namely Abbarajupalem, Dondapadu (Andhra Pradesh), Sunvalla (Gujarat) and Charnal (Madhya Pradesh) were control villages. The objective of the study was to attempt an assessment of economic, social and psychological change over time in different environments of members of farmer households in different States. A brief description of each of the 7 villages studied is given below :

2.7 Krishnayapalem Village

Krishnayapalem Village is the cooperative village located about 130 kms away from Guntur coming under Mangalagiri taluka. It was registered in 1977. The village has an area of about 1520-51 acres and in 1982 had a population of 2,200 and a population density of 30 persons per sq.km. There were 396 households each having an average of 6 or 7 members. About 74 families belonged to Scheduled Castes and Backward caste. The village has alluvial soil. Crop production is almost dependent on rainfall and is thus subject to a high degree of risk. Paddy, Bengal gram, tobacco and groundnut are the main crops all grown in the kharif season. Mixed cropping is a common practice and has a justification, as a means of reducing weather risk. Sugarcane, pulses and gram, vegetables and turmeric are also raised with the main crops. Use of new farm inputs is wide-spread and consequently the crop yields are high.

Milk production is an important enterprise in the village, about 61% of the households in the village own milch animals mostly buffaloes. Each house had, on an average, 1-2 milch cows. The village milk producers cooperative has been functioning in the village since 1977. The village has a bovine population of 390 (346 black and 44 white).

The village is electrified and has a school from nursery to class VII. It has a rice mill and a telephone. One of the large farmers has a Television and Video. There are 15 large farmers with a land holding of over 10 acres each, 80 medium farmers and 250 small and marginal farmers. Krishnayapalem has a relatively prosperous and diversified economy and well provided with supporting facilities.

2.8 Abbarajupalem Village

Abbarajupalem is the control village located about 140 kms from its district town Guntur. The village is well connected to its tehsil and district towns.

The village extends over an area of about 286.94 acres and as per 1981 census had a population of 539 persons (265 men and 269 women). The village had 150 households each having 4-5 members on an average. Like Krishnayapalem it is a multi-caste village. The SC population constitutes about 10.9% of the total village population (31 men and 30 women). The village has no concrete houses but has 25 tiled houses, 115 mud houses and 10 thatched houses. Farming is the main occupation of the village and labour and milk production are the second most important enterprises after crop production. The crop pattern is similar to that of Krishnayapalem as are the crop yield rates. There are 3 big farmers with land holdings of over 10 acres each, 10 medium farmers with land holdings between 5-9 acres; 57 small farmers with

land holdings below 5 acres and the rest are landless farmers. The animal population is approx. 325 out of which 150 are milch animals, 2 crossbreds and 4 pairs of he-buffaloes. The market outlet for fluid milk is very unsatisfactory. The total milk production per day is around 300 litres. Two vendors collect 35 ltrs. of milk each only in the mornings @ Rs 2 per 1200 gms of milk and payment is made monthly. During the lean period the vendors pay Rs 2.25 per 1200 gms. The ghee produced is sold to each other within the village @ Rs.24 per kg and whenever a farmer's milch animal is dry, he buys milk from his neighbour @ Rs 2.50 per litre.

2.9 Dondapadu village

Dondapadu village is also a control village very similar to Abbarajupalem and is located about 20 kms from Abbarajupalem. The village extends over an area of 1508.05 acres and has about 330 households. It had a population of 2424 persons (1222 men and 1202 women). While it was not necessary to study this control village in addition to Abbarajupalem a small sample was studied only to strengthen the findings.

2.10 Anawal Village

Anawal village is the cooperative village located about 90 kms from Surat (Mahuva taluka). It is well connected to its taluka and district towns. The village extends over an area of about 900 hectares and in 1982 had a population of 4,233 persons. There were 638 households each having an average of 6 to 7 members. It is a multi-caste village where about 70% of the total population are tribals. In brief the population could be classified as 60% (7% ST, 5% SC, 5% ^{Baniyarch} Basupach, 15% Muslims and 15% Hindus/Rajputs). Baniyas, Patidars and Sutharas also fall within these groups. In 1981, 11 of the households were classified

as large, 22% as medium, 22% small, 13% marginal and the remaining landless. 39.5% of the total land holdings are owned by large farmers, 30.3% by medium farmers and 30.16% by small/marginal farmers.

Anawal village has black soil with high moisture which facilitates crop cultivation. The average rainfall is 1270 to 2302 mm. 40% of the cultivated land is irrigated. Paddy, sugarcane and jowar are the major crops while pulses, vegetable and fodder are also grown simultaneously. Use of new farm inputs is widespread and consequently crop yields are high.

Milk production is an important enterprise in the village with about 78.73% of the households in the village owning milch animals mostly buffaloes. In 1982 the number of cows in the village were estimated to be 500 and buffaloes around 1700. Each household had, on an average 2-3 milch buffaloes. The village milk producers cooperative has been functioning in the village since 1960.

In 1982, there were 25 graduate, 25 undergraduates, 200 persons who had passed HSC, 70% of the village population have had primary school education.

The village is electrified and has a school, clinic, AI centre, mill and several shops. Anawal has a relatively prosperous and diversified economy well provided with supporting facilities.

2.11 Sunvalla village

Sunvalla village is the control village located about 100 kms from Surat. The village is well connected to the district towns. The

village extends over an area of about 367 hectares and in 1982 had a population of 1374 persons. The village had 216 households. Like Anawal, it is a multi-caste village with 90% belonging to SC (mainly Docha Patels and a few Koli Patels and Mistry Brahmins). Out of the 215 farmers, 131 were large/medium farmers and 56 small/marginal, 28 landless farmers. The population included 218 labourers and 239 jobless persons.

The soil in this village and average rainfall are similar to that of Anawal village. Crop cultivation is practically a year round activity due to availability of assured irrigation water, 90% of the cultivated land is irrigated. Paddy, Jowar and sugarcane are the major crops. Fodder and tuvar are also grown. The only source of income is from agriculture. Other occupations prevailing in the village are sheep and goat rearing, poultry, diamond cutting, carpentry etc.

In 1982 the village had a cattle population consisting of 117 buffaloes, 130 cows, 14 heifer bulls and 63 buffaloes. Buffaloes thus are the main source of draught power. The average milk production is 500 litres per day. Surplus milk is sold to vendors @ Rs 2.50 per litre.

The village is electrified and has 18 wells. It has a school from nursery to secondary levels. On the whole, the level of prosperity in this village is somewhat lower than that in Anawal.

2.12 Khaikheda village

Khaikheda village is the cooperative village located about 120 kms from Bhopal. The village has an area of 964.565 hectares and in 1982 had a population of 1396 persons (53.4% males and 46.6% females). There

were 186 households each having an average of 6 or 7 members. About 23 families belonged to the SC, 10 families to ST and the remaining 153 were divided among other castes. The 1980 census classified about 20% of the households as large, 19% as medium, 24% small and 25% marginal and 12% landless. Out of the total land holdings about 63.7% of the land was owned by large farmers, 17.7% by medium farmers, 11% by small and the remaining by marginal farmers.

The village has black soil and 54% of the cultivable land is irrigated. Jowar, wheat, soyabean and gram are the major crops, the other crops being maize, sugarcane and toor (dal). The area that can be classified as net sown area is 910.957 hectares the rest being cultivable waste. The average rainfall in this area is 1244 mm. Use of new inputs was fairly well prevalent. Only large farmers had electric motor facilities. Buffaloes are used for draught purposes.

Animal Husbandry is the second most important occupation after crop production for most of the households in the village. Almost 76% of the village households had milch animals mainly Surti buffaloes. The average number of milch animals per household was 3-4. The animals are mostly pasture fed though use of cattle feed was not uncommon. The village milk producers cooperative was set up in 1977 and in 1981 had a membership of 44%. The average daily milk production was 124 ltrs.

The village is electrified and has a primary/middle school, a clinic and an Artificial Insemination (AI) centre. There were 264 'Pucca' houses and the rest 'kacha'. There were no huts.

2.13 Charnal village

Charnal village is the control village located about 150 kms away from Bhopal. The village has an area of 1316.096 hectares and in 1982 had a population of 1523 persons. There were 256 households each having an average of 7 or 8 members. The Dangithakars constitute the dominant caste group in the village, but the population also included Brahmins, Baniyas, Rajputs and other castes. The 1981 census classified 101 households as large, 83 as medium, 38 small and the remaining as marginal and landless. The percentage of land held by the various categories were 52.3 in the case of large farmers, 32.4 in the case of medium, 10% by small and 5.3% by marginal farmers.

Like Khaikheda, Charnal also has black soil. About 62% of the cultivable land is irrigated. The crop pattern is similar to that in Khaikheda as are the crop yield rates. Land holdings are large. Bullocks are used for draught purposes.

As in Khaikheda village, animal husbandry in this village is the second most important occupation of the people. The village had 114 cows and 36 buffaloes. The average milk production per animal is 2.2 ltrs. and the average daily milk production is 113 ltrs. However the farmers rarely sell surplus milk due to lack of remunerative price. They use the milk for ghee production or sell only when the vendors offer Rs.2.50 per litre.

The village is electrified and about 71 houses are 'Kacha'. The rest are 'Pucca' houses. The village has a primary/middle school and a clinic. The crops grown, yield, rainfall etc. were similar to that of Khaikheda.

2.14 The cooperative and control villages compared

Although the research design envisaged that the pair of villages selected in each district be comparable in all respects, other than the existence of a dairy cooperative, there were a number of operational difficulties in selecting such pairs of villages for the study. Some compromise had, therefore, to be made between comparability and operational feasibility taking into consideration manpower and time constraints.

In all the three milksheds, in general the villages selected were, by and large comparable but for the absence of a dairy cooperative in the control village.

TABLE 2.1

Number of Districts, Towns & Villages in the three
States

STATE	DISTRICT (a)	TOWNS (b)	VILLAGES (c)
Andhra Pradesh	21	224	29,428
Gujarat	19	216	18,697
Madhya Pradesh	45	250	76,847

SOURCES : (a) Panchayat Raj at a glance - Statistics 1974-76 for number of districts.

(b) Census of India - 1971 - Table A-I

(c) Includes 53,428 uninhabited villages.

The data is based on census of India 1971

SOURCE : Indian Agriculture in brief , 17th edition (1978)

TABLE 2.2

Population and area of the three
States

STATE	Population (thousand persons)	Geographical area according to Sur- veyor General of India(Sq.kms.)	Density per Sq. mt.	Percentage of rural popula- tion to total population.	Percentage of workers to total popu- lation.
ANDHRA PRADESH	43,503	2,76,814	157	80.69	41.39
GUJARAT	26,697	1,95,984	136	71.92	31.45
MADHYA PRADESH	41,654	4,42,841	94	83.71	36.72

SOURCE : Registrar General of India