

CHAPTER - ONE

THE ROLE OF AGRICULTURE IN DEVELOPING ECONOMIES WITH PARTICULAR REFERENCE TO INDIAN ECONOMY

1.1 INTRODUCTION : AGRICULTURE, NATIONAL INCOME AND EMPLOYMENT

In almost all underdeveloped economies agriculture is still an industry of major proportion. Typically some 40 to 60 percent of the national income is originated in agriculture and from 50 to 80 percent of the workforce is engaged in agricultural production. While contributing to economic growth, the agricultural sector under goes a secular decline relative to other sectors.¹ An Indian economy cannot be an exception to this. The figures supplied by the national income committee and the central statistical organisation clearly saw that agriculture and allied activities (viz. animal husbandry, forestry etc.) contributed 59 percent of the national income in 1950-51. But it contributed about 36 percent of the national income in 1986-87. Two important facts must be noted here. First, Agriculture contributes a high share of the national income in India. Secondly, the share of agriculture in national income has been decreasing steadily. For example the share of agriculture in national output was 50 percent in 1950-51, 54 percent in 1960-61, 48 percent in 1970-71, 40 percent in

1980-81 and 37 percent in 1985-86.

In respect of employment too, it is not surprising that in the Indian economy with agriculture as the dominant activity, the main source of livelihood is agriculture itself. At one time 7 out of every 10 persons in India depended on agriculture. Indeed this proportion is very high and what is remarkable is that between 1901 and 1981. This proportion has come down only marginally from 70 percent to 63 percent. From this one may observe that agriculture dominates the economy to such an extent that a very high proportion of working population in India is engaged in agriculture. According to the 1981 census report 59.4 percent of working population in India was engaged in agriculture as compared to 69.7 percent in 1970 census and 69.5 percent in 1961 census (The figures are not really comparable) because of change in definition and coverage. Assam and Jammu and Kashmir are not included in 1981 census report.

1.2 IMPORTANCE OF AGRICULTURE FOR INDUSTRIAL DEVELOPMENT

Since the economic development of backward countries is identified with rapid industrialisation the significance of Indian agriculture originates from the fact that it has been the source of supply of raw materials to our leading industries, e.g. cotton and jute textile industries, sugar, vanaspati and plantation

all these depend on agriculture directly. There are many other industries which depend on agriculture indirectly. Many of small scale and cottage industries like handloom weaving, oil crushing, rice husking etc. depends upon agriculture for their raw materials. But in recent years the significance of agriculture to industries is going down as many other industries which are not dependent on agriculture. Under the planned economic development programme iron and steel, chemicals, machine tools, other engineering industries, aircraft etc. have been started. Despite this agriculture provides raw material for a number of industries. For example, sugar, tea, cotton and jute textiles, hydrogenated oils, food products, soap and some other agro-based industries which together account for 50 percent of income generated in the manufacturing sector in India.

1.3 AGRICULTURE AND ECONOMIC DEVELOPMENT

Now a days the development economists in developing countries have become aware of the fact that the various issues involved in the economic development process cannot be considered in terms of a false dichotomy of agricultural V/s. industrial development. It has also been realised that the process of planned economic development should proceed hand in hand in both agricultural and non-agricultural sectors of the economy. One should take note of the fact that agriculture makes substantial contribution to the process of overall

economic development. Johnston and Mellore mention the most important ways in which increased agricultural production and productivity contribute to overall economic growth which are as follows : (1) Economic development is characterised by a substantial increase in the demand for the agricultural products and failure to expand food supplies in pace with the growth of demand can seriously impede economic growth (2) Expansion of exports of agricultural products may be one of the most processing means of increasing income and foreign exchange earnings particularly in the earlier stage of development. (3) The labour force for manufacturing and other expanding sectors of the economy must be drawn mainly from agriculture. (4) Agriculture as the dominant sector of an underdeveloped economy can and should make a net contribution to the capital required for overhead investment and expansion of secondary industry and (5) Rising net cash income of the farming population may be important as a stimulus to industrial expansion.²

1.4 PROVIDING FOR INCREASED DEMAND FOR FOOD

The economic development of developing countries is normally associated with rising demand for food. Demand for food is a derived demand determined essentially by the growth of population and of per capita income. An increase in the net output of the agriculture itself represents a rise in a country's GNP (Gross National Product), a marked advance of food supplies is

central in the chain of economic development.³ A rapid growth of agricultural productivity is important as it enables food supplies to be available at relatively lower prices. The non-agricultural sector then requires less of its income to purchase food so increasing the effective demand for the output of non-agricultural sectors. This in turn increases the profitability of an expanded output in the non-agricultural sector and encourages entrepreneurs to invest there. Consequently expansion of the non-agricultural sector will increase the availability of job opportunities in that sector, both for the urban population and the labour released from rural areas. Moreover relatively declining food costs imply higher real incomes, thus reducing the pressure to increase wage earnings. This maintains or increases the profitability of investment in non-agricultural sectors. The above pattern is critical for countries in the early stages of development; for the process of economic development in developing countries is generally associated with rising demand determined essentially by the growth of population and a per capita income. Growth of demand for food is of major economic significance in the developing countries for a number of reasons. Firstly, underdeveloped countries are characterised by high rates of population growth varying from $1\frac{1}{2}$ to 3 percent per annum e.g. in India the growth rate of population for the period of plan economic

development since 1950-51 worked out to be 2.5 percent per annum. The task of providing adequate food supplies to rapidly increasing population before these countries therefore is a formidable task. (India at present faces no problem of food supply). Secondly, as economic development proceeds and the rate of economic growth is accelerated it is presumed that the per capita output/income rises. The income elasticity of demand for food in the developing countries is higher than in developed countries. "In countries where the real per capita income is low and the majority of people have consumption levels that are less than the minimum required for decent human living, the income elasticity of demand for food would not be less than unity as long as consumption of food remains below the subsistence level."⁴

The income elasticity of demand for farm food in the developing countries ranges from 0.6 to 0.9 as against 0.2 to 0.3 in the developed countries such as Western European countries, United States and Canada. In the words of Johnston and Mellor, "This is a simple consequence of the dominant position of food as a wage good in lower income countries when 50 to 60 percent of the total consumption expenditure is devoted to food compared with 20 to 30 percent in developed countries."⁵ The income elasticity of demand for food worked out for India seems to have been in the range of 0.7 to 0.8.

Therefore a given rate of increase in per capita income and a given rate of population growth have considerably a stronger impact on the demand for farm products than in economically developed countries.

1.5 AGRICULTURAL SECTOR AND SUPPLY OF LABOUR

Industrial development in the developing countries requires a substantial and steady increase in man power to facilitate expansion of output. There are three potential sources of increased labour supply for the industrial sector, natural population increase, immigration of the farm population. But agriculture plays the most important role to release labourforce needed by the new expanding industries. In developing countries the vast majority of labourforce is engaged in agriculture. For instance according to 1981 census figures 72.8 percent of working population is engaged in agriculture. Agriculture will be able to realise labour for employment in other sectors of the economy if there is underemployment in agriculture. At least in the earlier stages in the economic development the agricultural sector has to release an increasing proportion of labour force required for rapidly expanding secondary and tertiary sectors. The transfer of man power from agriculture to the other sectors of the economy is facilitated by the marginal productivity of labour being zero or even negative in the agricultural sector. i.e. agriculture alone contributes the essential factors

of production - labour - without affecting adversely, the total agricultural production under the existing production techniques. With the economic development the techniques of agricultural production also improve so that lesser number of workers is required to carry out the agricultural production. This change also makes it possible to release a labour force for employment out side the agricultural sector. However, in India, considering the rate at which industrialisation is expected to take place in the next 15 years also it would not necessary to transfer any additional man power from agriculture. This is so because of two factors. (1) The existence at present of a large number of unemployed in the urban areas and the relatively fast rates of population growth noticed in the last two decades.⁶

1.6 AGRICULTURE AND SUPPLY OF CAPITAL

A mere transfer of both unemployed and underemployed man power from the agriculture to the industry would not have accelerated. They accelerate industrialisation and raise per capita income. Nor is the transfer of surplus manpower from the pressurised agricultural sector possible without an adequate provision of capital and industrial sector. It is, therefore, pointed out that the transfer of man power to other sectors should go hand in hand with increasing supply of capital. In point of fact an adequate provision of capital is indispensable for industrial development and

consequent absorption of surplus man power by the other sectors of the economy. The developing countries which are making planned efforts to achieve economic progress and sustain it through development of industries are faced with formidable requirements of capital to finance initiations and expansion of manufacturing sector and for socio-economic overhead investments such as transportation, communication, education, public health and other public utilities. The agricultural sector, the only major existing industry may, therefore, be regarded as a source of capital for overall economic development. This presumption is strong especially during the early stages of economic growth in as much as, reinvestment of profits, historically the major source of capital formation, cannot be significant so long as the industrial sector forms a very small segment of the economy.⁷

Generally there are three ways in which the agricultural sector contributes to the industrial capital formation (1) increase in agricultural productivity benefits the non-agricultural sector through lower food and agricultural raw material prices, entering its real income and so providing the means for increasing the saving and the capital accumulation in the urban sector. (2) Increased farm output may generate higher level of agricultural income, part of which may be saved. These saving may be utilised for financing the growth of the non-agricultural sectors. This contribution loses

gradually, its importance in the latter stages of development because as growth proceeds the relative share of country's savings derived from agriculture becomes smaller and smaller. (3) The third contribution to capital formation takes place if the government imposes a compulsory transfer of funds from agriculture for the benefits of other sectors deriving more tax revenue from agriculture. But this requires a strong government having sufficient political will to implement it. This contribution was large in the earlier stages of economic development of developed countries. "Tax revenue from agriculture thus provided a large part of the funds that the government of Japan used in fostering development by construction model factories, by subsidising the creation of merchant marine and industry and by strategic investments in overhead capitals such as railways, roads, education and research."⁸

It should be recognised that agriculture can and should play a strategic role in contribution to the capital formation in the developing economies.

1.7 AGRICULTURE AND EXPORT

Developing economies most often buy capital goods and technical know-how from developed countries. In order to be able to trade with these developed countries the developing countries must develop the products in which they will have comparative advantage typically the industries based on natural resources.

Expansion of agricultural export is likely to be one of the most promising means of increasing incomes and also augmenting foreign exchange earning in country's stepping up development efforts. Development of export crops has an advantage in catering to the existing market and individual country that accounts for only a small fraction of world exports faces a fairly elastic demand. In view of the urgent and growing need for enlarged foreign exchange earnings and the lack of alternative opportunities, substantial expansion of agricultural export production is frequently a rational policy even though the world supply demand situation for the agricultural products is unfavourable. One of the rewards of the structural transformation associated with economic development is the greater flexibility of a diversified economy. Of much greater immediate importance, however, is the fact that for most of the underdeveloped countries of an expanded production of agricultural export crops can and should play a strategic role in providing enlarged supply of foreign exchange.

1.8 DEVELOPMENT OF AGRICULTURE AND DEMAND FOR INDUSTRIAL PRODUCTS

The simplified assumption of two sector growth model is that expansion of the capitalist sector that is industries sector is limited only by shortage of capital. Given this assumption an increase in rural net cash income is not a stimulus to rapid



industrialisation but an obstacle to the expansion of the industrial sector. As Arthur W. Lewis points out "Any thing which raises the productivity of the subsistence sector (average product per person) will raise real wages in the industrial sector and, therefore, will reduce the capitalist surplus and the rate of capital accumulation unless it, at the same time, more than correspondingly, moves the terms of trade against the subsistence sector."⁹ But here it should be remembered that investment decisions may in fact be influenced not only by the availability of capital but also by demand condition (i.e. market) and estimate of the future profitability of additions to productive capacity.

"Arthur W. Lewis himself emphasised in his report on industrialisation of the Gold Coast" anything that increases the rural purchasing power is ^{an} available stimulus to industrial development. Ragnar Nurkse has given the concise statement of the problem. "The trouble is this, there is not a sufficient market for manufactured goods in a country where peasants, farm labourers and their families comprising typically two-thirds and four-fifths of the population are too poor to buy any factory products or anything in addition to the little they already buy there is lack of real purchasing power."¹⁰ From this it can be observed that there is great need for extending the rural market for manufacturing goods without an enlarged rural market for manufactured

goods, there shall be no incentive for investment in the non-agricultural sector. It is, therefore, expected that in the initial stages of economic development it is the agriculture sector that is expected to trigger off development in the secondary and tertiary sectors of the developing economies. After attaining a certain stage of economic development a need for concurrent growth in the agricultural and non-agricultural sectors rises. The economy needs both an agricultural base and industrial base, these are not in conflict but are really complementary and beyond a certain initial stage of development the growth of one conditions and facilitates the growth of the other.¹¹ To conclude rising income with farmers thus acts both way : It provides rural saving and rural purchasing power to buy new industrial goods which can help economic development.

1.9 PROGRESS OF AGRICULTURE FROM 1950 ONWARDS - A RESUME

In the Indian conditions with a very backward agriculture and an overwhelming number of small and poor farmers, a growth-cum-welfare promoting policy is the most desirable thing to wish for but it was something that was conspicuous by its absence during the British rule and when such one was devised after independence, it remained for many years weak in some of its components and grossly inadequate in the implementation of its key parts. The policy for future has been laid down and

in various documents and reflected in the priorities and programmes of the current plan is a distinct departure from and, in a sense, an improvement over the past.

In every Five Year Plan the Planning Commission fixed specific targets for each crop and for different commodity groups such as foodgrains, oilseeds, sugar-cane etc. The Planning Commission also specified the various programmes for increasing agricultural production such as irrigation, soil conservation farming and land reclamation, supply of fertilizers and manures, better plough and improved agricultural implements and adoption of ^{more} scientific practices etc. From the beginning of the Third Plan, the emphasis was laid on 'Intensive Agricultural District Programme' (IADP) and 'High yielding varieties programme' (HYVP), 'Multiple Cropping and raising the yield of major commercial crops etc.'

1.10 GROWTH RATES IN AGRICULTURE

The following table No.1.1 regarding the growth of areas, productivity and output reveals that the growth of agricultural output during 1951-52 to 1964-65 was 3.2 percent per annum, out of which 1.7 percent was accounted for by increasing area and 1.4 percent by increase in productivity. But after 1964-65, since there was very limited scope for expansion of area under cultivation. The main source of increase in output was

increase in productivity per unit of land, obviously between 1964-65 and 1985-86. The average annual increase in production was of the order of 2.6 percent. Out of this 2.0 percent was attributable to rise in per hectare productivity. Thus, the high yielding varieties programme accompanied with improvement of the application of fertilizers and increased irrigation resulted in higher agricultural production.¹²

Table No.1.1

Index of Arable areas, productivity and output
Triennium ending with 1969-72 = 100

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Index	Area	Productivity	Output
1951-52	79.7	76.4	59.4
1964-65	98.4	99.7	96.9
1985-86	106.0	140.0	153.5
Annual Growth Rates			
1950-51 to 1964-65	1.7	1.4	3.2
1964-65 to 1985-86	0.3	2.0	2.6
1951-52 to 1985-86	0.9	1.7	2.8

Source : Quoted in 'INDIAN ECONOMY' by Ruddar Datt and K.P.M. Sundharam, p.404.

1.11 THE TREND TOWARDS INCREASE IN LAND PRODUCTIVITY

The trend towards increase in land productivity in respect of important crops is illustrated in the following Table No.1.2.

Table No.1.2

Increase in Land Productivity in India
(1951-84)

Items	(Kgs./hectare)			
	1950-51	1960-61	1970-71	1983-84
Rice	668	1,013	1,123	1,458
Wheat	663	851	1,630	1,851
Maize	547	926	1,279	1,346
Groundnut	778	745	834	954
Sugarcane	33,420	45,550	48,320	55,900
Cotton (Bales)	88	125	106	144
Pulses	441	549	524	541

Source : Department of Agriculture and Cooperation, Annual Report, 1984-85. Quoted in 'Indian Economy' by Ruddar Datt and K.P.M. Sundharam, p.375.

Under the impact of new technology, yield per hectare in almost all crops had taken place. But the most spectacular rise has been in the case of wheat in which the increase has been 200 per cent, potato was another crop which has registered over 100 percent increase since 1961. In other cases, the rate of increase has ranged between 20 to 50 percent. There has been almost no growth in the case of pulses. India has

a long way to go before it can catch up with the top producing countries of the world. This is both an opportunity as well as a challenge to our Indian agricultural scientists.

Table No.1.3

Compound Growth Rates of Agricultural Production

I Period : 1967-68 to 1975-76

II Period : 1976-77 to 1983-84

(percent per annum)

Items	Area		Productivity		Production	
	I	II	I	II	I	II
All crops	0.5	0.3	1.3	2.3	2.3	3.0
All cereals	0.3	0.4	1.9	2.9	2.2	3.2
Rice	0.7	0.3	1.0	2.3	2.0	2.6
Wheat	3.2	1.8	2.5	4.1	5.8	6.0
All pulses	0.8	Neg.	1.3	0.9	0.5	0.9
<u>NON-FOODGRAINS</u>						
All oilseeds	0.6	1.6	2.3	2.9	2.9	4.5
Sugarcane	2.8	1.3	0.5	1.2	3.4	2.5
Cotton	-0.6	0.9	3.0	0.2	2.3	1.1
Jute	-1.9	-0.5	1.4	2.5	-0.1	1.9

Source : Economic Survey, 1984-85, p.12, Quoted in 'Indian Economy' by Ruddar Datt and K.P.M. Sundharam, p.379.

Table No.3.1, brings out clearly the trends in agricultural production are primarily due to increase in productivity, through increase in area too, is important

in some crops. Further the green revolution which gave big push to Indian agriculture in the mid-sixties gathered further strength in subsequent years. Besides, the trend which had a narrow base in regions with developed infrastructure and particular crops like wheat has now extended to most regions and to most crops.

REGIONAL VARIATIONS IN LAND PRODUCTIVITY

From Table No.1.4, it can be observed that land productivity shows marked regional variations. Productivity of land is dependent on the quality of the soil, extent of irrigation facilities available, favourable natural factors like rainfall, climate etc. It is also dependent on the extent of government effort in improving agricultural inputs and infrastructure. Difference in natural endowments can be narrowed down by human effort but it is not possible to completely eliminate them.

In Table No.1.4 we have taken two leading cereals and two prominent commercial crops. In every case, the first two states are the top producers in the country and the next two states are the poorest producers. Punjab is at the top in the case of rice, wheat and cotton. In the matter of rice, Madhya Pradesh can produce only 25 percent of Punjab's capacity to produce rice. In wheat, Rajasthan at the bottom can produce only one-third of Punjab the top producer. In the case of cotton lint, the ratio between the top and the bottom

Table No.1.4Regional Variations in Agricultural Productivity
(Average of 1974-75 to 1979-80)RICE (Quintals per hectare)

Punjab	...	27.4
Haryana	...	23.3
All India	...	12.0
Orissa	...	8.9
Madhya Pradesh	...	7.0

WHEAT (Quintals per hectare)

Punjab	...	25.27
Haryana	...	21.3
All India	...	14.6
Maharashtra	...	8.6
Rajasthan	...	8.2

COTTON LINT (Kgs. per hectare)

Punjab	...	348
Haryana	...	325
All India	...	154
Maharashtra	...	83
Madhya Pradesh	...	73

SUGARCANE (Tonnes per hectare)

Tamil Nadu	...	99
Maharashtra	...	91
All India	...	52
Bihar	...	33
Madhya Pradesh	...	38

Source : Centre for Monitoring Indian Economy : Basic Statistics relating to Indian Economy, 1982, Vol.II : States. Quoted in Indian Economy by Ruddar Datta and K.P.M. Sundharam, p.375

producing states is nearly 5:1 and in the case of sugarcane, the ratio is 3.5:1. This is true of other

cereals and other cash crops. It is, thus, clear that there is a big gap between the advanced states and the least developed states. Further, while the leading states in India are making persistent efforts to catch up with the agricultural productivity in other leading countries of the world, the efforts of less developed states have not been adequate. Accordingly, the gap between the rich and the poor states has been widening this is one more clear index of regional imbalance.¹³

1.12 THE ECONOMY OF MAHARASHTRA AND ITS STRUCTURE

The following Table No.1.5 and 1.6 gives an account of the economic structure and the structural income of the Maharashtra State. It will be seen from the table that the working population engaged in agriculture and allied activities far out numbered the other sectors of the economy. Agriculture and allied activities contributed 41.6 percent to the State's domestic product (at current prices) in 1960-61. Since then the share of the primary sector, however, went down to 28.5 percent in 1982-83. On the other hand the mining, manufacturing and construction improved its share from 26 percent to 30.2 percent during the same period. The income from agriculture and allied activity in Maharashtra was 28.5 percent of the net domestic product in 1978-79 as against 39.7 percent for all India. It compounded very badly with 54 and 55 percent respectively for that of Punjab and Haryana for that period.

Table No.1.5
Economic Structure

Workforce engaged in	1961		1971		1981	
	Number (Lakhs)	Per cent	Number (Lakhs)	Per cent	Number (Lakhs)	Per cent
1.Agriculture and allied activities	132.5	69.9	122.3	66.5	155.3	63.9
2.Mining, Manufacturing and construc- tion	27.8	14.7	27.1	14.8	38.5	15.9
3.Other	29.2	15.4	34.5	18.7	49.2	20.2
Total	189.5	100	183.9	100	243.0	100

Source : 'COMMERCE' A Survey Vol.150 No.3865, Bombay,
June 22, 1985, Twenty Five Years of
Maharashtra, p.6.

AGRICULTURE IN MAHARASHTRA

Maharashtra accounts for 5 to 11 percent of the country's area under different crops except cotton where it is roughly 33 percent and jowar where it is 40 percent. Although about two-third of the states population is engaged in agriculture and allied activities only one-third of the States' income comes from agriculture. The corresponding share of this sector for the country as a whole in the national income is about 38 percent. The per capita food grain production in Maharashtra is one of the lowest among the states. It is only 150 kgs. as against 782 kgs. in Punjab and 192 kgs. for

Table No.1.1.6

State income at Current Prices (Rs. in crores)										
Sector	1960-61	1970-71	1980-81(a)	1981-82(b)	1982-83(b)					
	Income Total	% to Income Total	% to Income Total	% to Income Total	% to Income Total	% to Income Total	% to Income Total	% to Income Total	% to Income Total	
1. Agriculture and Allied Activities	664.3	41.6	1101.1	28.4	3898.2	27.9	4494.3	28.5	4630.9	28.5
2. Mining, Manufacturing and Construc- tion	416.0	26.0	1276.0	32.9	4611.5	33.1	4859.0	30.9	4922.0	30.2
3. Others	517.1	32.4	1498.4	38.7	5441.6	39.0	6387.3	40.6	6719.2	41.3
Total	1597.4	100	3875.5	100	13951.3	100	15740.6	100	16272.1	100

Source : 25 Years' of Maharashtra, Commerce Special Issue.

all India 1980-81 to 1982-83 average. The State has to go a long way in achieving self-sufficiency in agriculture though that was one of the major objectives of the State's Sixth Five Year Plan. The per hectare yield of the State for food-grains was only about two-third for that of India and little less than one-third for that of Punjab. The yield per hectare for cereals at 792 kgs. was the lowest in the country. Only next to Madhya Pradesh with 784 kgs. Similarly for pulses the per capita production in the State at 348 kgs. was low only next to Andhra Pradesh 330 kgs. Tamil Nadu 301 kgs. and Himachal Pradesh 262 kgs.

AREA, PRODUCTION AND YIELD OF MAJOR CROPS IN MAHARASHTRA

With regard to the changes in the above dimensions of the crops, the following quotation reveals the dismal picture except for sugar cane, all the other categories namely food-grains, cotton and ground nut have not improved much in area, production and yield per hectare, dry spells and untimely rains being regular feature, agricultural production has been fluctuating from year to year. The index number of agricultural production in the State (base 1967-70 minimum = 100) fell to 75.0 in 1965-66. From 107.8 in 1960-61 the highest production was reported in 1982-83 with the index rising to 160.8 the state government has now taken steps to stabilise the production through

various schemes from 1981-82. The whole of the State is divided into 72 ecological units consisting of rainfall zones and soil classification. Production planning is now attempted on the basis of these ecological units during the Sixth Five Year Plan and still of the current plan. The major objectives of agricultural development are self-sufficiency of food-grain production, near self-sufficiency in oilseeds, maximisation of value addition at farm level, improvement in crop productivity of small and marginal farmers and increasing employment opportunities in rural areas. In view of the over dependency on rainfall, the Government of Maharashtra decided to initiate dry land farming on a watershed basis with the employment guarantee scheme to achieve twin objectives of improving the productive potential of the land and guaranteeing job opportunities to rural unskilled workers. The actual achievement of the agricultural production target with the implementation of these measures could be gauged only in the long run.¹⁴

1.13 KOLHAPUR DISTRICT AND ITS GEOGRAPHICAL FEATURES

Kolhapur district of the Maharashtra State, from the view point of topography can broadly be divided into three zones (1) Hilly tracks on the western side, (2) The western zone of a traditional tract and (3) Eastern tract. The western hilly tract comprises of Shahuwadi, Radhanagari, Bhudargad, Chandgad, Panhala, Gaganbavada and Ajara talukas. The hilly tract is

covered by lateritic soils and are red to brown red in colour, mostly eroded and shallow with good drainage. In these vallies lateric soils are mixed with trap soils varying in colour from brown to black. It gets heavy rain-fall and hence it is most suited to grow crops like rice, nachani, vari, sawa and kodra. It forms about two-thirds area of the district. The other two zones have not been described as they are not concerned with our area of study.

The geographical unit purposively selected for the present study is the Chandgad taluka which comes in the first zone of the district. Since it comes under the zone of assured rainfall and having rich water resources, our objective is to study the behaviour of the area, out put and yield of major different crops since the beginning of the Five Year Plans in the country. The period covered is of 34 years from 1950 to 1984. For all these three dimensions, that is, area, production and yield of major crops, we have constructed a series of index numbers and also worked out the annual compound growth rates for two short periods (1) 1950-51 to 1965-66 (2) 1966-67 to 1983-84 and (3) 1950-51 to 1983-84 by using the following formula:

$$Y = A(1 + r)^t$$

The scheme of the study will be to highlight the changes in the land utilisation pattern in chapter two, to analyse the growth rates of major cereals in

chapter three and to analyse the growth rates of principal commercial crops along with the changing production structure in chapter four and summing up and the conclusions in chapter five. The unit however, being a smaller, the analysis of the changing agricultural production pattern could be extended to other small units that is talukas, falling under the hilly tracts zone of the district. For the stastically information we relied heavily on census report of 1960-61 and " Socio-Economic Review - District Statistical Abstracts of Kolhapur District " for the year 1960-61 to 1983-84, published by the department of agriculture of the Government of Maharashtra.

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