

## **Chapter-I**

# **INTRODUCTION**

**AN INTEGRATED STUDY OF SMALL FARMERS IN INDIA**  
**(A CASE STUDY OF KURNOOL DISTRICT OF ANDHRA PRADESH)**

**Chapter – I**

**Introduction**

**ROLE OF AGRICULTURE IN INDIA'S ECONOMY**

India is an agriculture oriented country. The contribution of agriculture in India towards employment is often not rightly recognised and well appreciated, although it provides employment to a great majority of people, that is, about 60 per cent of the country's population. It is feeding its huge population with foodgrains and other food items. The foodgrain production is around 230 million tonnes. Agriculture is contributing to industrial development through supply of raw materials. Agriculture commodities constitute 25 per cent of India's exports, while its share in the national income works out to be 18 per cent. The agrarian economy is the base on which the entire distorted structure of the economy and the society is constructed<sup>1</sup>.

**PERFORMANCE AND PROBLEMS OF INDIAN AGRICULTURE**

**Performance**

One of the paradoxes of the Indian economy is that the decline in the share of agricultural workers in total workers has been slower as compared to the decline in the share of agriculture in GDP. The share of agriculture and allied activities in GDP declined from 57.7 per cent in 1950-51 to 25 per cent in 1999-2000 and further to 20 per cent in 2004-05. The share of agriculture in total workers however declined

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<sup>1</sup> Chowdry, K. R., (2011) "Imperialist Plunder, Agrarian Crisis and Peoples Struggles in India, XXIX Conference of the Andhra Pradesh Economic Association, held at Guntur, on 12 -13, February 2011.

slowly, from 75.9 per cent in 1961 to 59.9 per cent in 1999-2000 and further to 56.7 per cent in 2004-05. Between 1961 and 2004-05, there was a 34 percentage point decline in the share of agriculture in employment was of 19 percentage points only. As a result, the labour productivity in agriculture has increased only marginally, while that of non-agricultural workers has increased rapidly. There were about 259 million agricultural workers in the year 2004-05. About 42 per cent of these agricultural workers were females.

A structural transformation took place in four States, viz. Kerala, Tamil Nadu, West Bengal and Punjab. The share of agriculture in employment is less than 50 per cent in these States. On the other hand, the share of agriculture in employment in eight States was more than 60 per cent. It may take some more years for these States to achieve structural transformation.

**Table – 1: Structural Transformation across States: Share of Agriculture in Employment and GDSP: 2004-05.**

S. No.	States	Share of Agriculture in Total (Rural+Urban) Employment (%)	Ranks based on Employment Share	Share of Agriculture in GDSP (%)	Ranks based on Share in GDSP
1	Kerala	35.5	1	16.5	3
2	Tamil Nadu	41.3	2	12.5	2
3	West Bengal	45.7	3	23.5	7
4	Punjab	47.6	4	38.6	16
5	Haryana	50.3	5	29.3	12
6	Maharashtra	53.2	6	9.6	1
7	Gujarat	54.9	7	20.1	5
8	Andhra Pradesh	58.5	8	24.7	8
9	Karnataka	60.7	9	19.2	4
10	Uttar Pradesh	60.9	10	33.3	15
11	Rajasthan	61.7	11	27.6	9
12	Orissa	62.4	12	28.2	10
13	Himachal Pradesh	64.1	13	20.5	6
14	Assam	66.0	14	32.0	13
15	Bihar	68.8	15	32.7	14
16	Madhya Pradesh	69.2	16	28.3	11
17	All - India	56.7	--	21.7	--

Source: 61<sup>st</sup> Round of NSS Employment and Unemployment Survey and CSO data for GSDP.

In terms of growth, the performance of agriculture during the post-Independence era has been impressive as compared to that during the pre-Independence period. The all crop output growth was around 2.7 per cent per annum in the post-Independence period (during 1949-50 to 1999-00). This was much higher than the negligible growth rate of around 0.4 per cent per annum during the first half of the previous century. As a result, India achieved self-sufficiency in foodgrains at the national level by mid-1970s. The growth in GDP in agriculture was around 2.2 to 2.5 per cent per annum during 1950-51 to 1980-81. It recorded the highest growth rate of more than 3 per cent per annum in the 1980s. During the post-reform period, the growth rate declined to 2.6 per cent per annum. Growth in agriculture GDP, which was 4.7 per cent per annum during Eighth Plan (1992-97), declined to 2.1 per cent during Ninth Plan (1997-2002) and to 1.8 per cent per annum during Tenth Plan (2002-07). Thus, there has been a significant deterioration in the growth rate of agriculture since mid-1990s. However, there are signs of revival of agricultural growth to more than 3 per cent per annum during the past few years.

It is obvious from the Table that the crop sector which showed a growth rate of 3.22 per cent during 1990-91 to 1996-97, decelerated to 0.8 per cent during 1996-97 to 2004-05. In the case of livestock and fruits and vegetables, there has been deceleration since the mid-1990s but still their growth rates are above 3 per cent per annum.

**Table – 2 : Growth Rate of Output of Various Sub-Sectors in Agriculture:  
1980-81 to 2004-05**

Period	Crop Sector	Livestock	Fruits and Vegetables	Non-Horticulture Crops	Cereals
1980-81 to 1989-90	2.71	4.84	2.42	2.77	3.15
1990-91 to 1996-97	3.22	4.12	5.92	2.59	2.23
1996-97 to 2004-05	0.79	3.67	3.28	0.05	0.02

*Source: Chand et al. (2007): Computed from National Accounts Statistics.*

According to the Table, there was no growth in the output of cereal crops like rice, wheat and coarse cereals. Similarly, there has been stagnancy in pulses and oilseed crops. The foodgrains output was 174.8 million tonnes in 2002-03, 213.2 million tonnes in 2003-04, 198.4 million tonnes in 2004-05 and 208.6 million tonnes in 2005-06. It may threaten our food security. Per capita production of cereals, pulses and foodgrains declined significantly since the early-1990s. However, foodgrains production achieved is 230 million tonnes in the year 2009-10. This is a record with paddy and wheat production touching 96 million tonnes and 78 million tonnes, respectively.

**Table – 3 : Per Capita Production of Foodgrains per Year (in Kg)**

Year	Cereals	Pulses	Foodgrains
1971-75	164	19	183
1976-80	172	18	190
1981-85	179	17	196
1986-90	182	16	198
1991-95	192	15	207
1996-00	191	14	205
2001-05	177	12	189
2004-07	174	12	186

*Source: Planning Commission (2007).*

The major concern during the post-reform period is the decline in yield growth for both foodgrains and non-foodgrains crops (Bhalla, 2006). During the period 2000-01 to 2003-04, all crop output growth declined further to less than 1 per cent per annum. Reduction was much higher for foodgrains than non-foodgrains<sup>2</sup>.

Recent data given in Table 4 also indicate the story of yield slackness in a fairly telling manner. For the past five years, yield levels for most crops or crop-groups stood almost frozen as shown by the 0.5 per cent growth (lowest ever in recent times) per annum for foodgrains. Yield growth for rice showed fluctuations. The growth was 1.63 per cent during 2001-02 to 2005-06. wheat recorded a negative growth in the past five years. Only the yield growth of oilseeds recovered during 2001-02 to 2005-06.

<sup>2</sup> Bhalla, G.S., (2006) "Agricultural Growth and Regional Variations", in Radha Krishna. R., Rao, S.K., S. Mahendra Dev and K. Subbarao (eds.), *India in a Globalizing world: Some Aspects of Macro economy, Agriculture and Poverty*, Essays in honor of Prof. C.H. Hanumantha Rao, New Delhi: Academic Foundation.

**Table – 4 : Growth Rate of Yields for Foodgrains and Oilseeds:  
1980-81 to 2005-06**

Year	Rice	Wheat	Coarse	Total	Total	Total	Oilseeds
			Cereals	Cereals	Pulses	Food-grains	
1980-81 to 1985-86	1.67	2.1	0.27	1.69	1.49	1.63	1.08
1985-86 to 1990-91	1.75	1.38	3.75	2.52	0.96	2.12	3.13
1990-91 to 1995-96	0.73	0.92	0.9	1.11	0.29	1.08	1.57
1995-96 to 2000-01	0.65	0.85	0.59	0.86	0.08	0.95	-0.53
2001-02 to 2005-06	1.63 (0.24)*	-0.71	1.71**	1.03	0.22	0.52	4.53

*\*Growth rate for the period 2003-04 to 2005-06, \*\*Covers the period 2001-02 to 2004-05.*

*Source: Economic Outlook for 2006-07, A Report prepared by the Economic Advisory Council to the Prime Minister (August, 2006).*

One of the reasons for the decline in output growth and farm business income was low yield growth during post-reform period. The reduction in yield growth, in turn, was largely a result of reduction in input growth in agriculture. Sen and Bhatia (2004) have shown that the growth of per hectare input-use at constant prices decelerated from 3.66 per cent per annum in the 1980s to 0.94 per cent per annum in the 1990s. The same study reveals that combination of input price increase and inadequate expansion of public infrastructure could be responsible for the deceleration in growth of input-use. Real input prices (deflated by CPIAL) declined at the rate of (-) 1.94 per cent per annum during the 1980s but had risen at 0.33 per cent per annum during the 1990s. Also, growth in the wages of hired labour was also responsible for the cost increase in non-cereal crops and this depressed the farm business incomes. Reduction in subsidies could contribute for the decline in yields and farm income. Mid-term Appraisal of the Tenth Plan also attributes part of the decline in agriculture growth to lower profitability during the post-reform period.

The reform strategy for agriculture relied on making terms of trade (TOT) favourable to the sector is done by reducing the protection to industry and trade liberalisation. These favourable relative prices may attract investible resources into agriculture and lead to higher growth of agricultural production.

As shown in Table-5, TOT for agriculture during the 1980s increased significantly, from 88.7 in 1981-82 to 99.4 in 1989-90. In spite of this increase, the terms of trade for agriculture were unfavourable. With liberalisation and reduction in protection to industry, terms of trade were favourable to agriculture since 1990-91. In the years 1999-00 and 2000-01, there was a reduction in the index before recovering in the subsequent two years. The index based on implicit prices of GDP also shows that during 1998 to 2004, there was four point decline in the agricultural TOT, although it is still favourable to agriculture as compared to non-agriculture (Sen, 2007)<sup>3</sup>. However, the private investment in agriculture improved due to increase in terms of trade. Although private investment increased at a faster rate during the 1990s, it has started declining in recent years. It may be noted that terms of trade is one of the factors responsible for enhancing agricultural growth. There are many non-price factors which are important for higher growth in agricultural production.

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<sup>3</sup> Sen, Abhijit (2007) "Presidential Address", Indian Journal of Agricultural Economics, Vol.62, No.1.

**Table – 5: Index of Terms of Trade between Agricultural and Non- agricultural Sectors (Base 1988-91 = 100)**

Year	Index	Year	Index
1981-82	88.7	1994-95	106.6
1982-83	91.4	1995-96	105.3
1983-84	91.6	1996-97	103.1
1984-85	93.9	1997-98	105.6
1985-86	93.6	1998-99	105.2
1986-87	95.7	1999-00	102.7
1987-88	97.4	2000-01	100.7
1988-89	98.3	2001-02	102.8
1989-90	99.4	2002-03	103.6
1990-91	101.9	2003-04	101.0
1991-92	105.6	2004-05	100.3
1992-93	103.9	2005-06	101.9
1993-94	103.6	2006-07*	102.0

*\*Provisional, Source: Directorate of Economics and Statistics, Ministry of Agriculture, Government of India*

The governments both at the levels of all India and states have implemented policies and programmes for boosting agrarian economy. The public investment in agriculture has been quite substantial. Both in the five-year plans and annual budgets good amount of allocations are made to agriculture. The institutional finance to agriculture has been steadily and significantly improving ever since the nationalisation of banks by Smt. Indira Gandhi in 1969. From a meagre amount of Rs. 136 crore to more than 4 lakh crore, the institutional finance to agriculture has moved up. Co-operative credit societies also contributed to the agricultural credit in large amounts. The government has focused its attention on the development of agriculture technology. A large number of agricultural research stations and agricultural universities have been established for conducting research on agriculture. Thousands of new crop varieties are evolved. Improved agricultural

practices are developed. A new thrust on soil nutrition and land protection is given. The improved agricultural technology is transferred to the farmers through extension services.

Several institutional changes are effected in the agricultural sector. Immediately after achieving Independence, irrigation is given top priority. Large and medium irrigation dams are constructed. Minor irrigation is also taken up seriously. Facilities are provided for digging up wells, bore wells etc. in addition to electric power for lifting the water. More than 40 per cent of the cultivated area has been brought under irrigation. However, dryland agriculture continues to be on 60 per cent of the cultivated area. Rainfed agriculture is uncertain and risky. Government has been implementing several programmes for the development of dryland agriculture.

The crux of Indian agriculture is marketing. The farmer gets a very low share in the consumer price. There are many defects in the Indian agricultural marketing system. In order to overcome the problems and remove the defects in the marketing system regulated markets are established. These markets have been regulated to remove the malpractices adopted by private traders. These have helped the farmers to improve their share in the consumer price. Price policy plays an important role in the development of agriculture as well as farmers' welfare. Indira Gandhi established Agricultural Prices Commission (APC) to recommend Minimum Support Price (MSP), to agricultural commodities. This rescued the farmers from fluctuations in agricultural prices.

Realising the need for supporting the agricultural sector the government has extended subsidies, to agriculture not only in the input supply, but also in price fixation. The government extended subsidies for various purposes, such as irrigation, power, seeds, fertilisers, agricultural machinery etc., further the government is also engaged in supplying seed, fertilisers, pesticides, implements and machinery through public sector organisations. Government is also encouraging the exports of agricultural commodities through several incentives. It is reported that above 25 per cent of India's exports are agricultural commodities.

Agriculture in India has made significant achievements. The food grain production has increased from 50 million tonnes in 1950 to 230 million tonnes in 2009-2010.

## **Problems**

### **Decline of agriculture**

Agriculture is decelerated since 1990s. Both foodgrains and non-foodgrains grew at faster rate during 1980s at 3.33 and 3.89 per cent per annum, respectively. The overall growth rate during that period was 3.45 per cent. As against this, the growth rates of both foodgrain and non-foodgrains have decelerated in 1990-91 to 2004-05 into 1.64 and 2.81 per cent, respectively. The overall growth during this period is 1.96 per cent. This is much lower than the growth during the 1980s.

## **Indebtedness**

Forty nine per cent of farmers at All India level are trapped into debts (National Sample Survey Organisation Report<sup>4</sup>). The Report stated that farmer spends upto ₹.12,000 annually per acre on an average, while he gets an income of ₹. 9,000 from all crops put together on an average annually. He is continuing his cultivation at a loss of ₹. 3000 per year.

Farmers' family expenditure on an average is ₹. 28,600 per annum. His income from all sources is ₹. 19,600. It is obvious that expenditure is more than the income. The peasants are thus trapped into debts.

## **Lower Incomes in agriculture**

Sixty per cent of the people depending on agriculture are having a share of 18 per cent only in national income. Income of mainly farmers and agricultural labour have been much less as compared to the people in manufacturing and service sector. The National Commission for Unorganized Sector<sup>5</sup> has estimated that about 70 per cent of the workforce is living with less than ₹. 20 a day on an average per person. This is in great contrast with the top 10 per cent of the population whose income constitutes more than 80 per cent of the total income of the people of the country.

## **Per acre yields of important crops**

The per acre yields of crops in India as reported are of low level. These yields are half of the average per acre yields at world level and about one third of the developed countries.

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<sup>4</sup> National Sample Survey Organisation Report (NSSO) (2006), Government of India.

<sup>5</sup> National Commission for Enterprises in the Unorganised Sector (2008), New Delhi.

## **Distress of Farmers**

In many areas of the country farmers have committed suicides. Farmers' suicides are more in agriculturally prosperous states than in less developed regions. Small and marginal farmers and tenant farmers are the worst sufferers of agrarian crisis. Farmers in several areas are in distressed conditions.

## **Loss – making occupations**

Forty per cent of the farmers want to quit farming (NSSO Report). The foregone discussion clearly brings out the picture about agrarian crisis in India, which threatens the livelihoods of millions of agricultural communities.

## **Loot of moneylenders and others**

More than 80 per cent of the loans are received from private sources, including moneylenders, traders; input suppliers rich landlords and others. The rate of interest charged by the above sources ranges from 24 per cent to 120 per cent per annum<sup>6</sup>. They charge compound rate of interest. The principal and interest become a big burden on the borrower farmer. The input dealers and traders also give loans in the form of inputs on hedging condition. Indebtedness of farmers is increasing. The financial institutions are advancing loans more to agri-business, agro-industries, hi-tech agriculture than real crop production. They give loan more to corporate sector than to peasants. This clearly indicates the pro-corporate approach of the state. Peasants indebtedness is one of the important causes of agrarian crisis.

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<sup>6</sup> Lavanya, T (2000), "Agricultural Indebtedness in Andhra Pradesh", Unpublished thesis, Acharya N.G. Ranga Agricultural University, Rajendra Nagar, Hyderabad.

## **Exploitation of peasants by traders or middlemen**

The share of producers in the consumer's price is ever very low in India. According to Chowdry<sup>7</sup>, producer's share in the consumer price for paddy is 55 – 65 per cent, cotton 70 per cent, groundnut 67 per cent, pulses 30 – 50 per cent and vegetables and fruits 20 – 40 per cent. Sixty per cent of trade in agricultural products has come under futures trading. Trading in commodity stock exchanges has increased from 5 billion dollars in 2000 to 175 billion dollars in 2006. Big corporate and MNCs trading in agriculture products are hoarding the stocks and raising the prices.

## **Minimum Support Price for agricultural commodities**

Minimum Support Prices fixed by Government of India are not remunerative to farmers. The parity between prices of agricultural commodities and non-agricultural commodities is not maintained. It is said that crisis cannot be removed only by paying remunerative prices to farmers.

## **SMALL FARMERS**

### **STATUS AND PROBLEMS OF SMALL FARMERS**

#### **i) Number and size of holding of small farmers**

Indian agriculture consists of mostly small and marginal farmers. The land ownership is highly skewed. According to National Sample Survey Organisation Report: No. 491, the top 5.2 per cent of rural households have 42.8 per cent of the

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<sup>7</sup> Chowdry, K.R., (2008) "Agrarian Crisis in India and Peoples Struggles", Paper presented at the Third Assembly of International league of people struggle, held at Hong Kong, 2008.

land ownership. Top 9.5 per cent of the rural households own 56.6 per cent of the land. In other words, 90.5 of the rural households possess only 43.4 per cent of the land. It is reported that 82.5 per cent of the farmers are small holders. The details of distribution of operational holdings are given in the Table (6). It is noted from the Table that 62.3 per cent of the farmers are marginal, while 19 per cent are small. Together these farmers are operating about 39 per cent of the area. In 2001 the average size of holding is 0.40 hectares and 1.42 hectares of the marginal and small farmers, respectively. In this study, marginal farmers are also included under the small farmers' category.

**Table – 6: Distribution of Operational Holdings – All India**

No. of Holdings: ('000 Number)

Area Operated: ('000 Hectares)

Average Size: (Hectares)

Category of Holding	No. of Operational holdings		Area Operated		Average Size of holding	
	1995-96	2000-01	1995-96	2000-01	1995-96	2000-01
Marginal (< 1 ha)	71179 (61.6)	75408 (62.3)	28121 (17.2)	29814 (18.7)	0.4	0.4
Small (1 to 2 ha)	21643 (18.7)	22695 (19.0)	30722 (18.8)	32139 (20.2)	1.42	1.42
Semi-Medium (2 to 4 ha)	14261 (12.3)	14021 (11.8)	38953 (23.8)	38193 (24.0)	2.73	2.72
Medium (4 to 10 ha)	7092 (6.1)	6577 (5.5)	41398 (25.3)	38217 (24.0)	5.84	5.81
Large (10 ha and above)	1404 (1.2)	1230 (1.0)	24163 (14.8)	21072 (13.2)	17.21	17.12
All Holdings	115580 (100)	119931 (100.00)	163357 (100.00)	159436 (100.00)	1.41	1.33

*Excluding Jharkhand,*

*Source: Agriculture Census Division, Ministry of Agriculture, New Delhi. Note: Figures in parentheses indicate the percentage of respective column total.*

## Small farmers in Andhra Pradesh

The situation in Andhra Pradesh does not present any marked difference compared to the all India picture. In 2005-06 it is observed that 95.48 of the operational holdings in the State were held by the farmers below 4.0 hectares. They operate in the total area of 10.85 million ha. This constitutes 74.90 per cent of the cultivated area. The number of farmers in small and marginal farmers' category is under gradual increase and the average landholding size is reducing. Small holders have their own identifiable disadvantages and vulnerabilities in terms of their socio-economic background in the Indian context as well as access to agricultural support systems and services from the State.

**Table.7 – Distribution of Operational Holdings in Andhra Pradesh, 1995 – 2006**

Category	No. of holdings (in lakhs)			Area (lakh ha)			Average landholding (ha)		
	1995-96	2000-01	2005-06	1995-96	2000-01	2005-06	1995-96	2000-01	2005-06
Marginal (<1ha)	63 (59.42)	70.23 (60.91)	74.17 (61.59)	29.04 (20.20)	31.04 (21.56)	32.87 (22.69)	0.46	0.44	0.44
Small (1 to 2 ha)	22.62 (21.33)	25.18 (21.84)	26.39 (21.91)	32.29 (22.47)	35.65 (24.75)	37.30 (25.75)	1.43	1.42	1.41
Semi medium	13.95 (13.16)	14.23 (12.34)	14.44 (11.99)	37.36 (25.99)	37.95 (26.36)	38.35 (26.47)	2.68	2.67	2.66
<b>Sub total</b>	<b>99.57</b> <b>(93.91)</b>	<b>109.64</b> <b>(95.08)</b>	<b>115.00</b> <b>(95.48)</b>	<b>98.69</b> <b>(68.67)</b>	<b>104.64</b> <b>(72.67)</b>	<b>108.52</b> <b>(74.90)</b>	--	--	--
Medium	5.63 (5.31)	5.01 (4.34)	4.87 (4.05)	32.31 (22.48)	28.55 (19.83)	27.59 (19.04)	5.74	5.7	5.66
Large	0.83 (0.78)	0.66 (0.57)	0.56 (0.47)	12.73 (8.86)	10.80 (7.5)	8.78 (6.06)	15.34	16.36	15.66
<b>Total</b>	<b>106.03</b> <b>(100.00)</b>	<b>115.31</b> <b>(100.00)</b>	<b>120.44</b> <b>(100.00)</b>	<b>143.73</b> <b>(100.00)</b>	<b>143.99</b> <b>(100.00)</b>	<b>144.89</b> <b>(100.00)</b>	<b>1.36</b>	<b>1.25</b>	<b>1.2</b>

*Source: Directorate of Economics and Statistics (Figures in parentheses are percentage of total)*

## **ii). Small Farmers Development Programmes**

Realising the importance of small and marginal farmers in Indian agriculture, especially from the point of view of the vast number of small and marginal farmers involved in agriculture and also the sizable quantity of agriculture production coming from small farmers, the governments both at the Central and State levels have implemented some important schemes, programmes and packages for the improvement of small farm economy. It may further be clarified that by improving small farmer's economy the lot of the large number of people in rural areas can be bettered by augmenting the incomes and improving the livelihoods of the small farmers. One particular scheme called Small Farmers' Development Agency (SFDA) is worth – mentioning in this context. It has been implemented in several states from 1971-72. Similarly, Marginal Farmers' and Agricultural Labourers Development Agency (MFALDA) scheme was also implemented. Several subsidies to small and marginal farmers are extended through various packages.

According to the guidelines of National Bank for Agriculture and Rural Development (NABARD), 65 per cent of the agriculture loans are to be provided to small farmers, which include marginal farmers as well. It is also clarified that no guarantee or surety is required for extending a loan up to ₹. 1, 00,000 for the farmers. Despite the so called schemes, packages of Central and State Governments, the problems of small farmers are not solved and no improvement in their living standards is made possible.

### iii). Problems

The problems of small farmers are many and varied. The most important problem is lack of resources or access to resources. The land holding is tiny, small and fragmented. In recent times, it is observed that many small farmers do not possess either cattle or farm implements for carrying out agricultural operations. Since their economic position is also weak, they do not have capital for investment. Their access to institutional finance is extremely marginal. Shortage of capital for investment adversely affects the farm production. Their incomes are also small. They are subjected to frequent production and price risks. Their access to modern agriculture production technology is peripheral. Lack of infrastructure is also a stumbling block in their progress. They have neither storage facilities nor economic withholding capacity. Hence they are resorting to distress sales. Consequently their incomes are not only low but unstable. The family expenditure is terribly increased, due to the raising prices of essential commodities. The lack of welfare schemes especially pertaining to education and health is also driving them into debts and crisis.

The governments, for various reasons, have characterised small farms as unviable. The productivity of small farmers, according to Government sources is of low order. Government maintains that mechanisation is not possible in tiny landholdings. They are not capable of cultivating commercial crops and also export-oriented crops for reaping profits. The employment for all the members of the family on the fragmented farms is also limited. In essence small farm economy is beset with many knotty problems and further it is said to be a losing proposition. It is true that

small farmer's investment on farming is marginal and adoption of technology is inadequate. Their farming is associated with risks and losses. But the question is who is responsible for this atrocious condition of small farmers?

#### **iv). Agricultural small farms policies**

At this juncture, it is necessary to emphasise that small farms are more efficient. According to studies conducted by various scholars including Professor Ch. Hanumantha Rao the small farmers are more efficient in utilising the labour of all the members of the family fully and resources more efficiently. It is concluded that productivity of small farm is higher than that of large farm. This standpoint is supported by the experiences gained the world over, especially in Asian countries, namely, Japan, China, Taiwan, South Korea, Vietnam, Malaysia and Thailand. In all these countries, the average size of farm holding is much smaller when compared to that of India. The farm productivity is nearly three times more in the above countries than what it is in India. The pro-farmer policies formulated and programmes implemented such as land reforms, supply of inputs, credit, technology, marketing infrastructure, and protection from foreign competition, processing facilities, provision of health, education and other welfare measures are some of the important programmes implemented by the Government of those countries which boosted the farm productivity and production.

## v). NEED FOR THE STUDY

An overwhelming proportion of total farmers households, that is, more than 80 per cent of them are small farmers households. Though they account for more than 80 per cent of total farmers households, their share in total operated area is only a little more than 43 per cent. Despite this, their contribution to the total value of crop output exceeds 50 per cent. These facts underline the importance of small farmers, not only in terms of the economy of the country as a whole, but also in terms of poverty and suffering they are undergoing. In view of this, an in-depth study is needed.

Although the yields on small farmers are higher, the incomes of the small farmers are low. This is because of smallness in the size of holdings besides higher cost of production per unit. The disparities in absolute income among different categories of farmers are very high. The government programmes have not helped small farmers to overcome the inherent diseconomies faced by them. Further they have reaped only smaller benefits as compared to large farmers.

Several problems, constraints and impediments continue to confront small farmers with regard to production opportunities; marketing facilities; institutional support; etc. They continue to live in abject poverty and distress conditions. A focused approach towards the development of small farmers is needed. Keeping all the points in view, a need for an indepth study on small farmers is felt. Hence, the present study is undertaken to suggest appropriate measures for the integrated

sustainable development of small farmers. Based on the study, the thesis is prepared, which is presented in six chapters.

## **Objectives**

The specific objectives of the study are:

- i. To ascertain the resource endowments of the selected small farmers.
- ii. To identify the factors influencing cropping pattern and to study cropping pattern of the selected farmers.
- iii. To analyse the economy of small farmers.
- iv. To study the adoption of technology, pattern of input use and constraints
- v. To assess impact of small farmer's development as well as Rural Development programmes and
- vi. To suggest policy implications for integrated development of small farmers.

## **METHODOLOGY:**

The study is based both on secondary and primary sources of data and information. The secondary sources include published and unpublished reports, monographs; books and other literature of the government, local bodies, academic institutions, NGOs etc. The primary sources include the small farmers, Government officials, bankers and other development agencies.

Kurnool district in Andhra Pradesh is purposively selected for the study. Three mandals in the district are selected based on the preponderance of small

farmers at the rate of one mandal in each revenue division, Viz: Kurnool, Banaganapalli, and Adoni. From each mandal, two villages are selected based on the probability proportion of small farmers. The selected villages are Utkonda and Hussainapuram in Peapully mandal; Mittapalli and Bathulapadu in Banaganapalli mandal; and Peddaharivanam and Peddatumbalam in Adoni mandal. From each village, 50 small farmers are selected by adopting random sampling technique. Thus a total number of 300 small farmers constitute the sample for the study. The sample frame for the study is one district, three mandals in three revenue divisions, six villages and 300 small farmers.

#### **DATA COLLECTION:**

The data and information are collected from primary sources by adopting personal interview method with the help of pre tested schedules, specifically designed for the purpose. Focused Group Discussions (FGD) are also conducted in the villages. Officials of various departments are also contacted for information on the subject. The period of study is 2009- 10.

#### **DATA ANALYSIS**

The collected data and information are processed, tabulated and analysed by making use of standard statistical tools and techniques, such as, averages, percentages, ratios, production functions etc.

## Functional analysis:

Functional analysis was done to identify the variables affecting cost of production and to estimate Marginal Value Products (MVPs) of the various resources.

## Cob Douglas production function

Production function analysis was used to work out the resource use efficiency and returns to scale. Cobb - Douglas production function has been chosen for its flexibility and suitability. It is a power function and log-linear. The function is in the form

$$Y = ax_1^{b_1} \cdot x_2^{b_2} \cdot x_3^{b_3} \dots \dots \dots x_n^{b_n} \cdot U$$

Where

Y = Dependent variable

$x_1$   $x_2$   $x_3$  .....  $x_n$  = The variable inputs selected for the study.

$b_1$   $b_2$   $b_3$  .....  $b_n$  = Regression coefficients of the input factors.

U = ERROR TERM AND

a = intercept

The function logarithm form both sides would be

$$\text{Log } Y = \text{Log } a + b_1 \text{Log } x_1 + b_2 \text{Log } x_2 + \dots \dots \dots B_n \text{Log } x_n + \text{Log } U$$

### Specification of the variables selected

$$Y = a x_1^{b_1} \cdot x_2^{b_2} \cdot x_3^{b_3} \cdot x_4^{b_4} \cdot x_5^{b_5} \cdot x_6^{b_6} \cdot U$$

Y = Gross income in Rs. Per acre

$x_1$  = Human labour in Rs. Per acre

$x_2$  = Bullock labour in Rs. Per acre

$x_3$  = Seed in Rs. Per acre

$x_4$  = Manures in Rs. Per acre

$x_5$  = Fertilizer in Rs. Per acre

$x_6$  = Plant protection chemicals in Rs. Per acre

$b_1$  to  $b_6$  = Production elasticities of factors  $x_1$  to  $x_6$

a = Intercept

Thus, in all six independent variables and one dependent variable were selected for fitting the Cobb-Douglas production function to test the productivity of the selected resources. The function was fitted by means of ordinary least square estimates (OLS) and its significance was tested by working out the analysis of variance and estimation of standard error. Finally after calculating 't' value, it was tested for its significance at 5 per cent and 1 per cent level of significance. Production elasticities or regression coefficients were subjected to 't' test to know significance. 't' value was calculated using the formula

Where

$$t = \frac{b_i}{\text{S.E of } b_i}$$

$b_i$  = Regression co-efficient or production elasticity of input  $x_i$

S.E of  $b_i$  = Standard error of  $b_i$

### Returns to scale

Returns to scale are said to be increasing, constant or decreasing, if it is greater than unity, equals to unity or less than unity respectively. It is worked out by summing up all the partial regression coefficients. Just, mere the arithmetic figure may not depict the type of relationship and the value is to be tested for its significance, which will decide whether increasing, constant or decreasing returns to scale.

- If  $\Sigma b_i = I$       Constant returns to scale
- $> I$       increasing returns to scale
- $< I$       decreasing returns to scale

't' test was used to know whether  $\Sigma b_i$  is significantly deviating from unity or not. The formula is

$$t = \frac{\Sigma b_i - I}{\text{S.E. of } \Sigma b_i}$$

$$= \frac{\Sigma b_i - I}{\sqrt{S(C_{11} + C_{12} + \dots + C_{nn} + 2C_{12} + 2C_{13} + \dots + 2C_{mn})}}$$

Where,

$$S = \frac{\text{Sum of squares due to errors}}{\text{Number of d.f of estimate}}$$

$C_{11}, C_{12}, C_{13}$ , are the elements of variance, covariance, obtained from inverse matrix.

### Resource use efficiency:

The production function analysis provides the coefficients which explain the relationship of each of the independent variable with the dependent variable of output. The production function analysis could help in planning resource use at the farm level. Hence, an attempt has been made to discuss the resource productivity, resource use efficiency and returns to scale with the help of production function analysis. Among different types of production functions Cobb-Douglas production function was selected for the study because of its relative advantage over other production functions and it provides production elasticities directly measuring returns to scale by summing up regression co-efficient. If the sum is less than one, it indicates diminishing returns to scale, if the sum is more that one, it indicates increasing returns to scale. The most important limitation of this function is that, it allows either constant, increasing or decreasing marginal productivity or not an input-output curve embracing all the three stages. The Cobb-Douglas function was fitted with six independent variables namely human labour ( $X_1$ ), bullock labour ( $X_2$ ), seed ( $X_3$ ) manures ( $X_4$ ) fertilizer ( $x_5$ ) and plant protection chemicals ( $x_6$ ). As per the farm base the model adopted is of the following functional form.

Cob-Douglas production function

$$Y = a x_1^{b_1} x_2^{b_2} x_3^{b_3} x_4^{b_4} x_5^{b_5} u$$

$$Y = a x_i^{b_i} u$$

Where,

Y = Output per hectare

a = intercept

$b_i$  = elasticity co-efficient

$x_i$  = input

$u$  = error term

$i = 1, \dots, n$

For convenience the following log linear form is adopted.

$$\text{Log } Y = \text{Log } A + b_1 \log x_1 + b_2 \log x_2 + b_3 \log x_3 + b_4 \log x_4 + b_5 \log x_5 + b_6 \log x_6 + U$$

Where:

$Y$  = Gross returns in Rs. Per acre

$A$  = Intercept

$X_1$  = Human labour in Rs. Per acre

$X_2$  = Bullock labour in Rs. Per acre

$X_3$  = Seeds in Rs. Per acre

$X_4$  = Manures in Rs. Per acre

$X_5$  = Fertilizer in Rs. Per acre

$X_6$  = Plant protection chemicals in Rs. Per acre

$b_1$  to  $b_6$  = Respective production elasticity co-efficient

$U$  = error term

## CHAPTERISATION

The thesis is presented in six chapters.

The introduction of the study is presented in the first chapter, The relevant literature is reviewed in chapter II, Agro-economic background of the study area is described in chapter III, Chapter IV deals with Results and Discussions, Chapter V reviews the small farmers Development programmes and Rural Development Programmes, Summary, conclusions and policy implications are presented in the last chapter VI. Bibliography is presented at the end of the thesis.

To understand the rural issues and problems of small farmers, the relevant literature is reviewed and presented in the ensuing chapter.

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