

**Farmers Distress in Telangana State:  
A Case Study of Adilabad District**

*Dissertation submitted to the University of Hyderabad for the award of the  
degree of Master of Philosophy*

**BOMMAKA SHIVA KUMAR**

(Reg.No.14SEHL33)



**School of Economics**

**University of Hyderabad**

**Hyderabad - 500 046**

**June, 2016**

*Dedicated  
to the  
Families of Deceased Farmers*

**School of Economics**  
**University of Hyderabad**



**DECLARATION**

I, Bommaka Shiva Kumar, hereby declare that this dissertation entitled “*Farmers Distress in Telangana State: A Case Study of Adilabad District*” submitted by me under the guidance and supervision of Dr. G. Sridevi is a bonafide research work which is also free from plagiarism. I also declare that it has not been submitted previously in part or in full to this University or any other University or Institution for the award of any degree or diploma. I hereby agree that my dissertation can be deposited in Shodganga/ INFLIBNET.

**A report on plagiarism statistics from the University Librarian is enclosed.**

Place: Hyderabad

(Bommaka Shiva Kumar)

Date:

Regd. No.: 14SEHL33

**School of Economics**  
**University of Hyderabad**



**CERTIFICATE**

This is to certify that the dissertation entitled “*Farmers Distress in Telangana State: A Case Study of Adilabad District*” submitted by Bommaka Shiva Kumar bearing Regd. No. 14SEHL33 in partial fulfilment of the requirements for the award of Master of Philosophy in School of Economics is a bonafide work carried out by him under my supervision and guidance which is a plagiarism free thesis.

The dissertation has not been submitted previously in part or in full to this or any other University or Institution for the award of any degree or diploma.

(Dr. G. Sridevi)  
Assistant Professor  
School of Economics  
University of Hyderabad

Dean  
School of Economics  
University of Hyderabad

## **Acknowledgement**

First and foremost, it's my responsibility to convey my heartfelt gratitude to a person without whose immense sacrifices I would not have been able to come so far in my academic career; Bharata Ratna- BabaSaheb Dr. B. R. AMBEDKAR.

I would like to express my sincere thanks to my research supervisor **Dr. G. Sridevi** madam, for taking me as her student and for providing me inspiring guidance, continuous help at every stage and constant encouragement throughout the course of this study.

I am thankful to **Prof. B. Kamaiah**, Dean, School of Economics, for his constant support and encouragement to complete this work. I express my hearted regards to Prof. G. Nancharaiah and respect to all faculty members of School of Economics.

I would like to convey my gratefulness for the support and help that I have received from the non-teaching staff of the School of Economics. I would also like to thank the staff of Indira Gandhi Memorial Library, University of Hyderabad for their cooperation and help provided to me with ample books and reading materials.

I thankful to all households of deceased farmers of Adilabad district in Telangana state who were very cooperative during my entire field survey. I also thank my brother G. Shankar, Adilabad District Office, who gave entire list of the deceased farmers and also thanks to the families who gave us the accommodation in critical conditions during field survey.

I would like to specially thank my best friend, B. Sree Manasa for her support and being motivating in entire my research work as without the help of her this research may not be completed.

I would like to thank all my seniors specially; Dr. G. Jagadeesh, Venkatesh, Dibakar, Patturi Balaji, Vejju Balaji, Prashanth, Anju, Srinivas, Prashanth Kumar Das, Kiran Kumar, Priyanka, Kuldeep, Jithina, Ch.Ramji and my friends VVS Narayana Muppidi, Sundar Prasad and Daya Aruna, who helped me in completion of this dissertation.

I am eternally grateful to my beloved parents Sri Laxamiah and Smt. Savithree who have been my constant source of inspiration and encouragement. My humble salutations to my parents for their endless faith in me. I would also like to thank my family members, Naresh Kumar, Sindhuja, Manish Kumar, Mounika, Anish Kumar, Nirmanyu, and my relatives for their continuous interest in my research work.

**Bommaka Shiva Kumar**

# CONTENTS

	<b>Title</b>	<b>Page No.</b>
<b>Chapter- 1</b>	<b>Introduction</b>	<b>1-10</b>
	1.1 Agricultural Policy in India	1
	1.2 Background and issues from Review	3
	1.3 Major Issues from Literature	8
	1.4 Significance of the Study	9
	1.5 Objectives	9
	1.6 Methodology	9
	1.7 Chapter Scheme	10
	1.8 Limitations of Study	10
<b>Chapter- 2</b>	<b>Review of Literature</b>	<b>11-32</b>
	2.1 Changing Context of Agricultural Policy	11
	2.2 Agricultural Situation in India	14
	2.2.1 Cropping Patterns	14
	2.2.2 Production Patterns	16
	2.2.3 Capital Formation	18
	2.2.4 Trade	19
	2.2.5 Agricultural Subsidies	20
	2.3 Agrarian Crisis and Distress of Farmers	22
	2.3.1 Land Holdings	22
	2.3.2 Price Impact	23
	2.3.3 Credit System Impact	25
	2.3.4 Trade and Market Impact	28
	2.4 Various Farmer Suicides- Case Studies	30
<b>Chapter- 3</b>	<b>Changing Agrarian Structure</b>	<b>33-61</b>
	3.1 Introduction	33
	3.2 Land Holding Situation in India	34
	3.3 Changes in Size of holdings over the years	37
	3.4 Crop Intensity	39
	3.5 Cropping Pattern at All India Level	40
	3.6 Employment and Wages- All India level	41
	3.7 Changes in Cost of Cultivation	43
	3.8 Price Policy	45
	3.9 Credit Situation in India	47
	3.10 Farmer Suicides- All India Level	49
	3.11 Agrarian Structure	50
	3.11.1 Land Holding Situation in United Andhra Pradesh	50
	3.12 Cropping Pattern Changes in United Andhra Pradesh	53
	3.13 Changes in Cost of Cultivation in United Andhra Pradesh	54
	3.14 Credit Situation in United Andhra Pradesh	55
	3.15 Employment in United Andhra Pradesh	58
	3.16 Farmer Suicides in Telangana	59

	3.17 Conclusion	60
<b>Chapter- 4</b>	<b>Agrarian Distress And Farmers Suicides in Adilabad</b>	<b>62-84</b>
	4.1 Introduction	62
	4.2 Profile of Adilabad District	62
	4.3 Major Crops Produced	64
	4.4 Irrigational Situation	65
	4.5 Land Holding Situation	66
	4.6 Micro Level Analysis	68
	4.7 Personal Profile of the Deceased Farmers	70
	4.8 Irrigated Land, Crops Produced and Cost of Cultivation of Deceased Farmers	71
	4.9 Land Holdings Situation of Deceased Farmers	73
	4.10 Employment Status of the Deceased Farmers	74
	4.11 Cropping Pattern of Deceased Farmers	76
	4.12 Cost of Cultivation of Deceased Farmers	77
	4.13 Total Income of the Deceased Families	78
	4.14 Credit of the Deceased Farmers	79
	4.15 Reasons behind Farmer's Distress	82
	4.16 Conclusion	84
<b>Chapter- 5</b>	<b>Major Findings And Policy Issues</b>	<b>85-89</b>
	5.1 Objectives of the Study	86
	5.2 Analytical Framework	86
	5.3 Major Findings of the Study	86
	5.4 Policy Recommendations	89
	References	<b>90-94</b>
	Plagiarism Report	

## List of Tables

Table No.	Title	Page No.
3.1	Plan Expenditure on Agriculture, Irrigation And Flood Control (in lakh)	33
3.2	Number of Holdings of All Size Groups	34
3.3	Operated Area of All Size Groups	35
3.4	Average Size of Holdings of All Size Groups	36
3.5	Growth rate of Area, Yield, Production of Major Crops from 1971 to 2015	40
3.6	Average Daily Earnings of Rural Labor House hold Workers in Agricultural Operations All India (in Rs)	42
3.7	Selected State/Crop-wise Estimates of Cost of Cultivation in India from 2008-09 to 2011-12	43
3.8	Compound Annual Growth Rate of Minimum Support Price for Food grains According to Crop year (Fair Average Quality) (Rupees per Quintal)	46
3.9	Compound Annual Growth Rate of Minimum Support Price for Non-Food grains According to Crop Year (Fair Average Quality)	46
3.10	Direct Institutional Credit for Agriculture and Allied Activities- Total (Short-term and Long- term)	47
3.11	Indirect Institutional Credit for Agriculture and Allied Activities	48
3.12	Non-Institutional Rural Credit	48
3.13	All India Total Farmers Suicides 1995-2013	49
3.14	Share of Number of Holdings by All Size Groups in United Andhra Pradesh	51
3.15	Share in Operated Area by All Size Groups in United Andhra Pradesh	51
3.16	Social Group Wise Number of Operational Holdings in 2005-06 and 2010-11 (in lakh hectore)	52
3.17	Social Group Wise Area Operated in 2005-06 and 2010-11 (in lakh hectore)	52
3.18	Cropping Pattern Changes in United Andhra Pradesh from 1970 to 2011 (in million hectares)	53
3.19	Selected Crop-Wise estimates of Cost of Cultivation in United Andhra Pradesh from 2008-2009 to 2011-2012 (Rs. /Hectare)	54
3.20	Disbursement of Agricultural Credit in United Andhra Pradesh	55
3.21	Year Wise Distribution of Credit to Tenancy Farmers in Telangana State	57
3.22	Agricultural Workers in United Andhra Pradesh (in million number)	58
3.23	List of Farmer Suicides by Government of United Andhra Pradesh in Telangana from January, 1997 To 2011	59
4.1	Compound Growth Rates of Area, Production and Yield in Adilabad District	64
4.2	Number of Irrigation Sources in Adilabad District	65
4.3	Number of Holdings in Adilabad District	67
4.4	Area Operated in Adilabad District	67

4.5	Sample Representation	68
4.6	Household Characteristics of Deceased Farmers	71
4.7	Cultivated Land under Irrigation	72
4.8	Social Group Wise Irrigated Land, Crops Produced and Cost of Cultivation	73
4.9	Total Number of Land Holdings	74
4.10	Social Group-Wise Employment Status of Deceased Farmers	75
4.11	Crop Cultivation of Deceased Farmers	76
4.12	Crop Wise Average Cost of Cultivation	78
4.13	Social Group-Wise Total Income of the Deceased Families	79
4.14	Total Average Credit from 2012- 2015 according to Social Groups and Income Wise	80
4.15	Total Average Credit from Institutional and Non-Institutional Sources	81
4.16	Total Average Credit from 2014- 2015, Comparison with Income and Expenditure	82
4.17	Social Group-Wise Response pertaining to Reasons of Farmers Distress	83

### List of Figures

Figure No.	Title	Page No.
3.1	Land use classification in India from 1960 - 2013	38
3.2	Crop Intensity in India	39
4.1	Geographical Map of Adilabad District	63

## **Abbreviations**

APC	Agricultural Price Commission
APMC	Agricultural Produce Market Committee
ARC	Agricultural Refinance Corporation
AIRCS	All India Rural Credit Survey
AIDIS	All India Debt and Investment Survey
CSO	Central Statistical Organization
CACP	Commission for Agricultural Costs and Prices
DES	Directorate of Economics and Statistics
FCI	Food Corporation of India
GATT	General Agreement on Tariffs and Trade
GOI	Government of India
GDP	Gross Domestic Product
IPM	Integrated Pest Management
MLE	Ministry of Labor and Employment
MNC	Multi- National Company
MSP	Minimum Support Prices
MSPI	Ministry of Statistics and Programme Implementation
MIS	Market Intervention Schemes
NAP	National Agricultural Policy
NCRB	National Crime Records Bureau
NSSO	National Sample Survey Organization
PDS	Public Distribution System
RBI	Reserve Bank of India
SC	Schedule Caste
SEZ	Special Economic Zone
ST	Schedule Tribe
WTO	World Trade Organization

# **Chapter- 1**

## **Introduction**

Agriculture is the most illustrious and inextricable sector of the Indian economy in recent times. The contributory share of agricultural sector to the gross domestic product declined drastically from 57 percent in 1950-51 and 52 percent in 1960-61, to 14.1 percent in 2011-12 and 11.2 percent in 2013-14. In India more than 68 percent of population is directly or indirectly dependent on agricultural and allied activities. One of the major factors affecting the farm households is farmer suicides. Agriculture changed its nature from low cost to high cost because of rise in input cost and low returns from output. As per the existing studies, there is a change in agrarian structure of the country.

### **1.1 Agricultural Policy in India**

Agricultural policies in India can be grouped into four important phases. In phase one, emphasis was mainly on agrarian reforms, abolition of zamindari system, elimination of intermediaries and empowerment of rural poor. The state has emphasized on institutional changes, irrigation development and cooperative credit institutions and also other aspects such as rise in agricultural output so as to meet the demand of food grains for the increase in population and to produce sufficient raw material for the industrial sector to maintain sustainability. On the contrary, the increased focus on the production targets of food grains, led to the lack of attention on the land less and daily wage laborers.

In second phase, importance was given to the programs on agricultural production to strengthen the agricultural administration in all states by focusing mainly on agriculture, cooperation, community development and irrigation. However, the serial droughts in 1965 and 1966 caused severe food grain crisis in agrarian system which brought new agricultural strategy called green revolution (Sen, 1997). Green revolution led a positive impact on the agricultural output at a compound rate of 3.2 percent and food grains at 3.4 percent and it benefited the large farmers, money lenders and land owners. However, it had a negative impact on the other sections of the society which constituted the small and marginal farmers. The new agricultural strategy which led to the expansion of private irrigation resulted in high use of chemical fertilizers and pesticides which ultimately led to the rise in input price as well as production cost. The asymmetric

information regarding usage of chemicals steered decline in soil fertility and crop failure which majorly affected the small and marginal farmers. Most of the farmers who are financially backward were trapped in indebtedness. The ultimate aim of green revolution to reduce poverty remained unrealized due to lack of institutional support. More and more fertilizer companies were built, but the government was not given any clarity regarding the effects of fertilizers. There was an emphasis on five percent agricultural growth rate and to achieve the planned targets government decided to enable the large proportions of rural population such as small and large cultivators and agricultural laborers on one path. Focus was made on growth rate but due to drought, recession and famine in India it was impossible to take extreme steps like long term goals to increase growth rate. The phase witnessed a need for foreign reserves (Mukherjee, 1992). The emphasis was mainly on country's self-reliance in agricultural production in accordance with the increase in population and also to meet the demand for food and raw material for industrial sector through primary sector. Due to inflation in the period of 1972-73, effected with the rise in price of food products, oil and fertilizers by 65 percent. Because of this reason, focus was on only agricultural sector and neglected the other sectors.

Phase three, during 1980's government, gave more importance to the industrial sector and information technology, by neglecting the agricultural sector and also declining the public sector investment that led to decline in the agricultural output. Growth of the agricultural commodities both for domestic as well as export purpose at the same time lead to the process of diversification and fast transformation from food to non-food crop production. This phase concentrated mainly on integrated approach to pest control, nutrients and energy supply, production, conservation, consumption and trade to maintain stability in agriculture sector. Increase in non-food grains was also targeted. Dry farming, oil seeds and afforestation were considered as well. Watershed program was initiated in rural areas to develop more agriculture. Demand for labor increased and more concentration was given to the development of employment. The phase saw disparities in inter-cropping growth pattern.

In fourth phase, in 1991, initiation of economic reforms gave more importance to fiscal deficit, private sector investment, liberalization, privatization and globalization which ultimately led to an enormous agrarian distress and a deepening of the agrarian crisis. Privatization, involved in sale of assets of public sector, became the root cause for decline in domestic prices.

Globalization, which resulted in removing the trade barriers and allowed foreign finance capital into domestic economy, made no contribution to the growth of real capital. All this situations led the farmers to lose in market competition and due to fall in market prices, farmers remained in loses leading most of the farmers to commit suicide in the era of economic reforms. Nevertheless, Seed policy was introduced. Bio-fertilizers and Integrated Pest Management (IPM) were also considered as inputs. The phase gave more importance to the industrial sector through privatization. Doubling the food production was focused to eliminate food security. Public Distribution System (PDS) was introduced. Credit and infrastructure was considered. Employment was increased through schemes in agriculture. Women participation was increased in other allied activities. However, poverty and food insecurity was not eradicated and price stabilization remained unsuccessful. On the other hand, National agricultural policy was introduced. Minor-irrigation and food security issue was concentrated. Kisan credit cards were given. Organic farming was introduced. Separate markets were given as farmers can do marketing directly. Subsidies were given to the small and marginal farmers. Nonetheless, only the industrial sector developed. Agriculture sector declined and agricultural and allied activities were given less importance (GOI, five year plan periods).

## **1.2 Background and Issues from Review**

Since mid-seventies, Indian Agriculture has undergone transformation due to the changes in agrarian structure as a consequence of technological changes. Agriculture needs land for cultivation. In India, total land area is around 328 million hectares in which total 162 million hectares of land is utilized for agriculture in which 42 million hectares of land is not cultivated as it consists fallow and other waste land includes grazing pastures. Land use is related to conversion of one use to other general use. Land use is basically referred to the land which is used for a purpose such as cultivation, house, etc. The land use pattern is complex and dynamic and can be related to the physical characteristics of land, the institutional and other resources framework like labor and capital available.

In India, land use data was collected from the village level. The statistics of land use is a part of the agricultural statistics which comes under the Ministry of Agriculture, whereas it collects primary data from individual state authorities. In 1948, Ministry of Food & Agriculture, set up a

technical committee on Co-ordination of Agricultural Statistics, which recommended a nine-fold land-use classification and also delineated the standard concepts and definitions for all the states to follow for better comparability and comprehension. Basically, land use statistics which was collected is available in five categories, i.e., (i) forests (ii) area not available cultivation (iii) other uncultivated land excluding current fallows (iv) fallow land and (v) net area sown. However, the new categories were formed by further detailing the existing categories which consists cultural waste land, current fallows and tree crops and groves which are not included in net sown area. (Mohanty, 2007).

Land use pattern was changing over a period due to various factors such as increase in population, urbanization, industrialization, change in consumption patterns, deforestation, soil erosion, changing life styles, etc. Presently, the land use pattern changes were also affecting the agricultural output. Increase in population led to an increase in demand for land, food, etc. Deforestation due to conversion of forest land for various purposes such as industries, houses, etc and the resultant soil erosion became some of the main reasons for the agrarian crisis. All this resulted in the reduced output of crop which had an adverse effect on the farmers (Premakumara and Seema, 2013)

Changes in agrarian structure has created stagnation in productivity and farmer distress which lead to the agrarian crisis. India faced different structural changes in agriculture since independence. During the British rule, land was under the control of few people. Most of the population worked as laborers. So, after independence, first emphasis was made on removal of zamindari system and other systems like mahalwari and ryotwari. The focus was on land distribution and tried to re-distribute the land to poor. The government introduced land reforms but was unsuccessful in implementing them. The important structural change in agriculture is the introduction of Green revolution technology in the late 1960's which introduced high yielding varieties of seeds for cultivation. Punjab was the first to adopt this technology and also laid down the concept of capital production relations. However, small and marginal farmers were not able to adopt this technology. Government took initiative by setting up various commissions and Food Cooperation of India (FCI) and by giving subsidies for seeds, fertilizers and pesticides. By forming rural cooperative and commercial banks, small and marginal farmers also adopted the technology through credit system. This growing predominance of small and marginal farmers in agriculture

which does not stop at the process of marginal size of land holding but manifests itself in ‘marginalization’ of the peasantry itself (Deshpande and Shah, 2010).

The other major change in agriculture was the introduction of the liberalization and globalization policies. The state governments slowly withdrew their role of intervention in the agriculture sector. The irrigation facilities or the infrastructure facilities were not provided according to the need of the farmers. Even, the credit finance was not helping the farmers as the priority of banks were changing over. Also, the private intervention and MNC’s in agriculture was affecting mainly small and marginal farmers as the agriculture was shifting over to capital formation relations. The seeds were also produced by the private industries. The structural changes in the agricultural sector had immense effect on the farmers which led to distress among them. Due to the introduction of globalization policies in India, the economy opened up to do exports which initiated a shift in the crops produce from food to non-food because of the high prices involved with it, i.e., export of cash crops outside the country. With this the overall country’s area of agriculture cultivating food grains declined by 18 percent after 1990-91, whereas cultivation of cash crops like cotton and sugarcane increased by 25 percent to 10 per cent respectively. This shifting of crops initially led to a decline in food grains production. However, because of this shift, India started to save the food for future generations to develop a ‘food secure’ nation. Slowly production of crops like vegetables, fruits, etc were also given importance. Even, the consumption pattern also saw a change from this phase (Sahay, 2010).

Cropping pattern means the proportion of area under different crops at a point of time. That is, if there is a change in cropping pattern the area proportion will also change. It can also be considered as the result of many physical, natural and socio-economic factors. Government consider the cropping pattern of a state through its agricultural policy. The cropping pattern also changes according to the irrigation facilities, rainfall, soil fertility, market, storage, self-sufficiency, price, size of holdings, size of farm, etc. (Mohan, 2007). After the green revolution technology, there was an increase in the share of non-food crops. However, the change in cropping pattern also led to the increased demand for irrigation. The use of fertilizers and pesticides entailed the use of more water for the crops to grow. All this eventually led to deforestation as at some point of time the farm loses its soil fertility and starts giving low output. The cropping patterns

were reformed in the agricultural sector but the other essential requirements such as irrigation were not getting fulfilled which in due course led towards agrarian crisis (Narasaiah and Suresh, 1999).

In agriculture, land used to have low input cost but from past few years, the cost of land became high as there is an increase in demand even for cultivable land for the purposes of other services and cooperate buildings, due to Special Economic Zones (SEZ). The cost of cultivation started increasing with time and the farmers were facing loss in the output as the price of inputs itself were high. The costs of inputs like fertilizers, pesticides and even the seeds increased. The government investment in agriculture and the subsidies declined. Moreover, as the irrigational facilities were low, the farmers tried digging bore wells but still they were not getting sufficient irrigation because of the degradation of ground water. These factors led the farmers to depend on the market where the costs are high. Furthermore, the excessive use of fertilizers and pesticides resulted in reduced crop output. As most of the farmers were uneducated they did not know the exact quantity to be used. In short, the cost of inputs increased than the output for most of the farmers. Farmer income reduced as he paid more for the cultivation of crops but sold the output at low cost. Hence, the income derived from these activities were not sufficient enough to meet the expenditure of the cultivators. All these directly led the farmers to distress causing agrarian crisis (Suri, 2006).

Indebtedness is the major problem in agrarian crisis which affects almost every farmer. The government formed rural banks to give credit for the farmers to adopt the green revolution technology. But, the banks do not give second agricultural loan until the first loan gets cleared. So, most of the farmers were depending on private money lenders for credit with high interest rates to buy the inputs and also for basic day to day needs as the cost of living increased. The output declined due to low rainfall and irrigation facilities and also due to the techniques of green revolution methods. Mostly, small and marginal farmers were affected. The income they got through agriculture was insufficient to repay the loans they had taken for cultivation. Commercialization of agriculture trapped the farmers in indebtedness which consequently left them in distress. (Nancharaiah and Jagadheesh, 2013).

Indebtedness is one of the most important factors which is affecting the agricultural sector of the country. According to national sample survey reports of 2011, 49 percent of the farmers are

debt trapped because of increase in investment in the crop cultivation. Seasonal changes like monsoon also have an impact on agriculture. However, it is not a main reason for the increasing number of farmer suicides, The issue of debt traps, hyper-commercialization, exploding input costs, water use pattern, severe price shocks and certain state policies also lead to farmer suicides. Around 48 percent of the farmers are indebted and nearly two- third of the farmers are frustrated with their profession (Deshpande and Prabhu, 2005).

Due to the globalization and liberalization policy, the economy was opened to the outside world and started exports. Due to this, most of the farmers shifted their cultivation from food crops to commercial crops such as cotton, sugarcane, etc. But, even today the farmer faces market exploitation while selling his output. The government initiated minimum support price to help the farmers. But, the farmers were not getting the minimum price to their crop because of the exploitation of the middlemen and the buyers. Some smallholder farmers were left with the option of selling their crop only for an initial price told by the dealer. Privatization and marketization of agriculture is also a cause for distress in farmers (Vyas, 1999).

Distress among farmers is the main reason for the increasing number of suicides among farmers in India. This thesis examines in detail the major reasons behind farmer suicides in India with a special focus on the newly formed state of Telangana. The recent spate of farmer suicides has become an important aspect of research and policy debates in the Indian economy. According to National Crime Records Bureau-2013, a total of 2.9 lakh farmers have committed suicide between 1995 and 2013. There are various reasons for suicide among farmers. According to Mohanty (2013), the main causes of farmer suicide are egoism and anomie. In India, most of the farmers are committing suicides mainly because of the socio-economic factors. Social factors includes social stigma, increased family burden, growth of aspirations and non-cooperation of family members; while economic factors include inherited poverty, insufficient farm income, mounted pressure on limited income, sole dependency on farm income and increased cost of living (Saptapathy and Mishra, 2012).

Telangana is a newly formed state in India, which is in its infant stage of development. It has a distinct tradition and culture of its own. The climate of Telangana is predominantly hot and dry and is a semi-arid area. Here, summer starts in March and monsoon in June and winter by the

month of October. Ground water level is very low in Telangana where majority of the farmers depend on bore wells. After the formation of Telangana, there was a drastic change in the agrarian structure of the state. Around 429 farmers committed suicide after the formation of Telangana due to lack of rain fall, there was a massive crop failure coupled with lack electricity (Praja Shakthi Telugu newspaper on 7/8/9<sup>th</sup> November, 2014.)

According to National Crime Records Bureau- 2014, Telangana ranked number two in farmer suicides whereas Maharashtra stood at number one. There are many reasons behind massive crop failure like lack of irrigation facilities, non-availability of inputs in time, high labor cost, high cost of inputs, poor farm management, climatic hazards, etc. Agrarian crisis and farmers suicides are crippling the nation's economy and also breaking the spine of the farmers. Agriculture should be protected and farmers saved in the interest of the people of the country as a whole (Kanthi, 2014).

### **1.3 Major Issues from Literature**

The major issues which were discussed in the review of literature, are: a) productivity b) marketing and prices of agricultural products, Agricultural Policy issues, c) indebtedness, d) farmer suicides, e) farmers distress and f) land policy issues. Agricultural situation in India has changed a lot after the introduction of green revolution technology. Also due to the unfavorable climatic conditions, there are a lot of changes happening in the agricultural sector from the past few years. Review of literature mainly explains about the cropping patterns, production patterns, capital formation, trade and agricultural subsidies.

- Agrarian crisis was leading the farmers into distress and due to this reason most of the farmers were committing suicides. It also explained about the land holdings and impact of price, credit system, trade and market within the existing literature.
- Land was also considered as a primary issue. Because large number of holdings are in the hands of few people and small number of holdings were in the hands of large number of people. Most of the small and marginal farmers are landless. There is an urgent need for the re-distribution of land to landless people which can further improve the productivity.
- Indebtedness is a primary problem which most of the farmers are facing in the economy and it was the main reason for farmer distress. Issue of farmer suicide is shrinking the

growth of economy, so it was considered as a major issue behind decline in the production rate.

- There are various factors affecting the farmer's livelihood which lead them to face the problem of distress, because of which most of the farmers are ready to give up their farming profession which ultimately lead to a rise in urbanization.

#### **1.4 Significance of the Study**

There are few studies which tries to bring out the inter-linkages between agrarian changes and distress as a process leading to farmer suicides. In the context of newly formed Telangana state there is a dearth of studies on how the degree of indebtedness varies across different regions (Districts) and size of land holdings among different social groups. Here the crucial question is on how the indebtedness has become one of the major causes of distress leading to farmer suicides? Hence, this study conducted in the context of prevailing agrarian distress and farmer suicides in Telangana state tries to adopt a holistic approach to understand the rising debt burden among farmers within the context of changing agrarian condition. Indebtedness and continuous crop failures will lead to distress among farmers. The present study examines this process by locating the crucial factors in the agrarian change leading to farmer's distress by using the primary data from Adilabad district as a case study.

#### **1.5 Objectives**

1. To study the changes in agrarian structure in Telangana state.
2. To locate the crucial factors in agrarian change leading to acute indebtedness and farmers distress in Adilabad district.
3. To study the impact of agrarian distress and farmer suicides at household level.

#### **1.6 Methodology**

To understand the changing agrarian structure and its impact on increasing distress among farmers we have used both primary and secondary source of information. The study is presented at three levels namely - macro (State level), meso (District level) and micro level (Household level). For macro-level study, we have selected Telangana state. In secondary data analysis, we have largely used cross sectional and time-series data published by various data sources. These

include publications from Directorate of Economics and Statistics; National Sample Survey Organization (NSSO); Central Statistical Organization, RBI reports, etc. indicators used for this study are: Operational holdings, commercialization/ cropping pattern, low income generation from farm household- cost of production and price of the output, cash loan outstanding by purpose of borrowing, share of debt to total income of the house hold, interest rate payment, percentage of farm household indebted and social indicators such as caste, gender and education were used as indicators for this study. For a better understanding of the nexus between agrarian change and distress we have used ‘case study approach’. This provided us opportunity to have in-depth case studies of the problem. For the case study purpose, we have selected Adilabad region considering the fact that large number of suicides have taken place in this region after the formation of Telangana state.

Adilabad district was selected for this study on the basis of the secondary data facts published by newspapers and Government of Telangana State regarding the farmer suicides. Highest number of farmer suicides occurred after the formation of Telangana state in 2014. Data collection was done through case study method. This provides the opportunity to have in-depth analysis to understand the process with which the farmers themselves undergo the distress.

## **1.7 Chapter Scheme**

Chapter scheme was considered in six chapters. Chapter one deals with the introduction, second chapter deals with review of literature, third chapter deals with the agrarian situation in India, fourth chapter deals with the agrarian distress in Telangana state, fifth chapter deals with the agrarian distress and farmer suicides in Adilabad and finally, sixth chapter deals with the conclusion.

## **1.8 Limitation of Study**

The study is limited to one particular district i.e., Adilabad district of Telangana state.

## **Chapter- 2**

### **Review of Literature**

This chapter, mainly, is an attempt to review the literature, which focuses on the agrarian changes in India from the colonial period to the present era and various factors leading farmers to commit suicides in India.

The agricultural sector is the most dominant sector in the Indian economy. More than 60 percent of the population depends on this sector for their livelihood. In the present era, farmer suicide is a significant threat to the growth of the agricultural sector. There are different reasons behind every farmer suicide. In Indian agrarian system, many issues were raised to support the problems of farmer suicide.

The present chapter discusses the various agricultural policies initiated by the government from colonial period to the present. Issues related to cropping patterns, production patterns, capital formation, trade and agricultural subsidies are discussed. The various reasons leading to farmer suicides like the land holding situation of farmers, the role of land in farmer's distress, the impact of price and credit system in market conditions are also examined. There are two types of credit systems which prevailed in the rural community: 1) the private credit system such as private moneylenders, loans from friends, relatives and landlords, etc. and 2) the public credit system. Furthermore, effect of trade and marketing conditions on farmers is also analyzed.

### **2.1 Changing Context of Agricultural Policy**

The situation of agricultural sector during British India was very pathetic. Commercialization of agriculture with different land revenue policies oppressed the Indian farming community as a whole. With the effect of revenue policies, farmers remained indebted to moneylenders and lost their land and subsistence to those greedy moneylenders. Different tenure systems like, zamindari, mahalwari and ryotwari hampered the livelihood of the farming community in India. During British India, they encouraged only cash crops like coffee, tea, sugar and indigo for more revenue. From 1891 to 1947, the annual rate of growth was 0.01 percent whereas the food grain production per acre was 0.98 percent. From 1922 to 1947, the production of rice declined to 0.57 percent (Pray, 1984). World War II affected the agricultural research and

administration. During the war, production of food grains were majorly affected. Unpredicted famine hit India during 1943, which caused the death of millions of people (Mukherjee, 1992). There were severe food shortage and the prices of basic food grains were hiked which led to starvation. This famine can be divided into three phases: the first phase, from 1942 to March 1943 when famine has not yet begun; the second phase, during which death rate due to starvation reached its peaks and the third phase, which can be referred to as the most starvation period. Famine totally damaged the growth of the country (Sen, 1997).

In Indian economy agricultural sector occupied a very prominent place. Evolution of agriculture policies in India can be seen in four phases. The first phase was the pre-green revolution period (1950-65) with major focus on the agrarian reforms, zamindari abolition act, and elimination of land intermediaries, changes in ownership rights and land holdings and joining the land reforms. The second phase was the green revolution period (1965-80), which focused on the increase in food grains by using technology, fertilizers and high-yield variety seeds by setting up various commissions like Agricultural Price Commission and Commission for Agricultural Costs and Prices; forming Food Corporation of India and by nationalizing the banks. In phase three, the post-green revolution period, focus was on the development of agrarian policies and economic reforms whereas phase four focused on markets, land reforms, public sector investments, liberalizing trade policies and implementing National Agricultural Policy. As, the role of credit policy in agricultural sector is very crucial, there is an urgent need to create an institution to provide funds for investment in agricultural sector. This resulted in the establishment of Agricultural Refinance Corporation (1963) and Lead Bank Scheme (1969). However, there are several issues in rural credit system, which remained to be addressed. Markets plays a critical role in the agrarian sector. The process of market sector regulation started in mid-1960s with the enactment of Agricultural Produce Market Committee (APMC) Act formed for the regulation of market system, functions and duties with the aim of development. The regulation act proposed 17 reforms in August 2007. The role of electronic spot exchange in maintaining transparency in the price system was considered. Achieving food self-sufficiency and protecting consumers from scarcity-induced speculative price rise were the overriding objectives of the price policy. The main function of prices was to act as signals for allocation of resources and the main objective was to provide equity, productivity and stability in marketing society. The role of price policy and its importance in

agricultural growth can be explained with the help of Market Intervention Schemes (MIS). Minimum Support Prices (MSP) have an insurance as well as an incentive component which serves both the purposes very effectively, and role of price policy in procurement of food grains to meet the food requirements of the poor people. Government taxes on MSP to drive away the private traders from market to protect the farmers from risk, and other reforms in price policy where only 30% of people are benefiting from subsidies. To ensure food security, price policy should concentrate on the low productive states, mainly by reintroducing green revolution in those states and by maintaining objectives mentioned in food security bill, 2013. Development in the area of agricultural research, extension and education reforms should take place from the base level to build a strong base for long-term agricultural growth in any country. There is a need to control the exports as well because only after meeting domestic demands should the farmers export to the outside world. Without this, inflation may affect our domestic economy. Major challenge of policy makers is to be aware of what should be included or excluded while framing a policy for growth in the sector (Arora, 2013).

There are four weaknesses of deceleration of agricultural growth. They are: the preponderance of low-value agriculture, low cost benefit ratio, inefficient use of natural resources and deterioration of self-help groups. Firstly, after production of most of the crops, per hector value added is very low. Not only the farmers cultivating food crops but also the farmers who are cultivating the large value of crops other than sugar are getting low returns of income. Secondly, in our society farmers use more fertilizers and pesticides resulting in crop failure and rising the cost of inputs. Thirdly, efficient allocation of resources is critical for the sustainable development of the country. However, present methods of agriculture are depleting the level of natural resources. There are several steps taken to stop deforestation and factors affecting soil degradation and level of water. Lastly, deterioration of small groups affecting the farming community enables the bureaucracy to extend its way without delivering decent results. The inappropriate and exploitative behavior of markets is affecting households. The biggest asset of the economy is the common sense of farmers, which enables them with the changing situations, enables farmers to reach the heights of the productivity (Vyas, 1994).

Acceleration of agricultural growth will save country from agricultural crisis. Deceleration of agricultural growth is mainly due to the lack of appropriate policy framework rather than technology. Other factors like economic and ecological factors and institutional fatigue play vital role in deceleration of agricultural growth in the sector. Policies should address some specific problems like soil structure, climatic conditions, and efficient allocation of natural resource that helps in strengthening the agriculture industry. Group farming can help the farmers not only to resolve technological issues but also to improve productivity. Policies will enable the functioning of institutions, and safe guard the farmer's entitlements. Both policy fatigue and institutional fatigue are responsible for the deceleration of growth. There is an urgent need for micro as well as macro level institutions for the effective functioning of the farming community in all aspects for higher growth rate. It facilitates reduction of transaction cost, easy access to the input and output markets, sustainable management of natural resources, controls the uncertain predictions and strengthens the agriculture industry linkages (Behera and Mishra, 2007).

## **2.2 Agricultural Situation in India**

Agricultural situation in India changed a lot after introducing green revolution technology. In addition to this, due to the unfavorable climatic conditions there are many changes happening in agriculture from the past few years. This section mainly analyzes the cropping patterns, production patterns, capital formation, trade and the agricultural subsidies.

### **2.2.1 Cropping Patterns**

In India, cropping season is classified into two main seasons: Kharif (from July to October) and Rabi (from October to March). Crops grown in sole or mixed or rotational and in one season, one crop or two crops can be cultivated in a year based on the land. Irrigation will be provided to the crops which declining those seasons and they will depend on monsoon rainfalls. In kharif season, rice is grown in most of the areas and in some areas like Meghalaya, rice is alternated with cotton and vegetables where as in Arunachal Pradesh, where rice do not grow much, crops like maize, millets and oilseeds are considered. Other than rice, crops like maize, bajra and reyl are grown. Alternatively, to maize, crops like bajra, groundnut, sugarcane, pulses and ragi are considered. In rabi season, wheat is the main crop. However, alternatively oats, jowar, gram are

grown, and rabi sorghum is seen mostly in the Deccan. Commercial crops and plantation like sugarcane, tobacco, potato, jute, coffee, rubber, coconut, spices and tea are also cultivated in the cropping patterns. Horticultural crops, mainly apple, mango and citrus are importantly considered. Mixed cropping is also considered in the Kharif season; pulses and oilseeds are grown with maize, jowar and bajra. In rabi season crops like wheat, barley and gram are grown. Adoption of technology in cropping system is influenced by both institutional and infrastructural factors. Due to globalization, farmers faced problems in area to grow the crops. Price and trade policies will become powerful instruments in directing area allocation to farmers. Technology declined the cropping intensity, also the irrigation sector need more development (Mohan, 2007).

Agricultural growth and farmer's distress are both interrelated terms, and they are interdependent towards each other. Healthy competition among farmers leads to the acceleration of agricultural growth but at same time distress can result in fall in growth rate. In Karnataka, the farming community is affected because of drought, inappropriate policy regimes, and negligence of state policy. Karnataka has a very productive agrarian system by which they can easily cope up with the present market conditions and changes in technology. Performances and growing patterns of eight crops in Karnataka in different districts are examined, namely jowar, ragi, maize, tur, cotton, groundnut, rice and sugarcane. To measure all the crops, growth and performance per hector are considered. The results show that the poor weather conditions are affecting the performance of crops especially like those of maize. Cotton is a volatile crop, which leads to more fluctuations in the market conditions. Tur, groundnut, rice and sugarcane crops need to be ratified. Crops like rice and sugarcane are crops, which needs more water for irrigation. Most of the Karnataka farmers are facing drought and inadequate policy regimes, which need proper supervision, policies measures and safety nets. Mainly government should focus on extension and expansion of research programs, which leads to the effective functioning of the agricultural sector with farmer friendly policies (Rao and Gopalappa, 2004).

The problem of farmer suicide is lowering the growth rate of the nation mainly because of failure in policies and changing the methods and patterns of farming. Reasons behind farmer suicide in the district of Wayanad of Kerala are explained in two phases. Firstly, cropping patterns, market integration and agrarian distress. Secondly, reasons behind agrarian distress in Wayanad.

Most of the farmers depend on export-oriented crops or cash crops. However, the fall in prices of push the farmers into debt traps because of negative returns of profit. There are four export-oriented crops namely coffee, pepper, tea and rubber. These crops have high export intensity and prices of these crops will not remain stable, it fluctuates all the time. Secondly, 47 percent of farmer suicides in Kerala is reported from Wayanad. Major crops in this district are pepper and coffee. In India, 95 percent of pepper exports and 80 percent of the coffee exports is from Kerala. Kerala holds the monopoly for these crops. At the same time, high volatility of prices is hampering the livelihood of the small and marginal farmers. They are not even getting subsistence wages and income from their crops as most of the farming community in Kerala depend solely on cash crops. Various factors mentioned above and the drought of 2002-03 led the farmers into debt traps. To repay the debt the farmers had to sell their land at very low cost, as it remained their last resort of repayment of debt. Most of the farmers belonging to small and marginal section having less than one acre of land committed suicide; 47 percent of suicides reported solely from vulnerable sections. The average size of holdings of the deceased farmer is 1.72 acre at the age of 50 years, depending only on farming as their profession for their livelihood (Mohanakumar and Sharma, 2006).

### **2.2.2 Production Patterns**

Agricultural productivity in India mainly depends on land productivity and labor productivity. In India, the main problem is to meet the food according to the demand primarily in rural areas as it relates to poverty. Allocation of resources should be efficient. Both land and labour can determine the productivity. Here, land consists fertilizer use, irrigation and labor consists wages. Land productivity can be provided regarding quality and labor productivity is different from land. Modern agriculture techniques were initiated to increase the agricultural productivity. However, the population density and prices were inversely related to the productivity. In addition, most of the farmers have smallholdings. Regional differences should be considered. The most important factor to increase the agricultural productivity is to increase the irrigation facilities and fertilizer supply. In addition, there is a need to improve credit facilities and to transfer the population from agriculture to non-agricultural activities in highly populated areas. In agriculture,

wages are low, substantially less in proportion to the cost of living. All these issues should be considered to increase the agricultural productivity (Dayal, 1984).

Agriculture in Punjab is well known for its productivity and potential growth, which provides good farm income to the producers. Success of the Punjab agricultural strategy was centered on the green revolution technology. Many think that it has the best agricultural strategy. Major crops like rice and wheat occupy around 70 percent of total gross crop area. However, after a decade of using this technology there is degradation in land, water and environment. Cropping system and technology already exploited 75 percent of the potential. 20 percent of farming population in Punjab is under below poverty line. Due to the more technical agricultural practices, there was a drastic decline in the ground water and increase in deficiency of micronutrients in the soil. Agricultural diversification is a solution to all these problems. Diversification through vegetables, fruits, etc. can be done as future strategy to address the problems. There are mainly three types of diversification alternatives. One is through mass production and consumption. Secondly, concentration should be more on the areas that are moderately high. Finally, limited diversification through non-conventional high value items of elite consumption. These three ways of diversifications mentioned above are based on existing characteristics. First category includes milk, pulses and oilseeds. Second category includes vegetables, potato, cotton, onion, basmati rice and sugar cane. Final category includes floriculture, exotic vegetables, mushrooms and similar crops. Farmers who follow the above diversification alternative may reduce the market risk (Chand, 1999).

Crop failure, changing cropping patterns, impact of liberalization policies, which leads to rise in the input cost of production, indebtedness, negligence of government in public infrastructure and lack of research and extension programs, are the causes behind distress among the rural households. Due to impact of globalization and modernization, family structure in rural villages are declining at faster rate leading to rise in individualization. This phenomenon can be explained in two paradoxical situations. First, farmer's conditions would be better when development takes place in agricultural sector and for that development, farmers has to fight their entitlements and safeguards by bringing pressure on government. Second situation is through democracy that what we have studied in our textbooks, by questioning the authorities democratically to resolve the

problem. Situation of agricultural sector after independence can be defined in in three phases. First phase is when congress party came with pro-peasant policies such as abolition of intermediaries, reduction of land revenue system, provision of irrigation facilities, and greater share in political power for farming community at state level. Also, strategies were made to make India free from high dependence on foreign countries by producing surplus food grains and enable agricultural sector to supply raw materials for industrial sector. Second phase was during green revolution, which came with new agricultural strategies to increase food grain productivity. However, it did not help the small and marginal farmers as the modern methods of cultivation and high utilization of fertilizers and pesticides led to a rise in cost of inputs, which affected them financially and made them economically weak. In third phase because of liberalization policies, agricultural system in developing countries like India, miserably failed and showed declining trend. Liberalization policies only benefited the developed countries as they were successfully using their WTO terms and importing so much of food grains. However, in developing countries such activities directly affected the farmers, which became the main reason for distress among them (Suri, 2006).

Farming community in India is mostly unorganized with caste/ creed factors. Impact of liberalization policies on farming community leading to the problem of farmer's suicides is observed as a major reason behind agrarian crisis. Marketing system has both positive and negative effects on the small and marginal farmers. There is a need to focus on the emancipation of farming community from exploitative nature of the society in all way. Role of consumer in market place makes efficient as well as effective functioning of markets because consumer acts as a key decision maker in market place. Prime minister advisory committee made some recommendations after observing reasons behind deceleration agricultural growth. Liberalization policies, to achieve 8 percent of the overall growth of the country it must focus on agricultural sector to achieve targets committee abolished some restrictions and framed some policies to achieve 4 percent of agricultural growth per year. Country like India should continue minimum support price scheme for some more years to uplift vulnerable sections in rural India (Singhal, 2010).

### **2.2.3 Capital Formation**

In agriculture, public investment was declining than the private investment in India. However, public investment should increase for the development of the sector. Most of the studies

restricted their analysis to agriculture and allied activities to know about agriculture capital formation. In agriculture capital formation, both the public and private shares were given importance. However, compared to forestry and fishing sectors, the agriculture showed decline. Public capital formation is mainly used for medium and major irrigation works and markets yards. Private capital formation is used for mechanization, land leveling and private minor irrigation. Public investment should enhance infrastructure as a crucial issue to achieve high growth in agriculture. Changes in cropping pattern led changes in household capital formation. Shifting started from food grains to non-food grains production. The household capital formation was low as the productivity was not high. Price base should be common in order to eliminate discrepancy in growth even in non-food grain production. High investment should be done on irrigation, technology and other infrastructure development for growth in agriculture; mainly through public capital formation (Sawant, et, al., 2002).

In Indian agriculture, the capital formation was showing decline because of increasing share of private sector investments. Decline in capital formation started from 1980's. Private sector investment comprises both household sector and corporate sector and invests more in wells, farm houses, land reclamation, budding, irrigation, machinery, etc. Transport, machinery and agricultural implements are considered as the fixed capital formation in agriculture. Public investment in agriculture is declining due to the negligence of agriculture, raising subsidies, opposition to big dams, etc. In UN system, there is separate capital formation for each sector. Credit system is also separate. In India, the capital formation faces underestimation problem compared to the UN system. Agriculture took a diversification towards non-food grain crops. This can also be considered as a reason for fall in public investment. Public investment should be increased in heavy amounts to implement in major irrigation and electricity. Less public investment will result the negative growth rates in the economy (Gulati and Bathla, 2001).

#### **2.2.4 Trade**

In India, non-agricultural commodities were gaining more importance, which were effecting the share of agriculture in GDP. Earnings from exports were low than the imports which rises the prices of imports. From last two decades, the exports were declining in India, and as India obtained self-sufficiency in food grains and other agricultural commodities, even the overall

imports declined. Nevertheless, the foreign exchange earnings are also important to the economy. New trade regime was considered after the Uruguay Rounds as it stated that the objective is to achieve economic efficiency and international competitiveness. Agriculture under GATT was brought, rising the burden of subsidies in their budgets in several countries. These agreements are crucial in the development of international trade in agricultural commodities. This will help in reducing the subsidies. Until 1991, the agricultural trade was subjected to quantitative restrictions. However, the self-sufficiency in food was questioned highly, as according to the agreement, the subsidies will reduce. Development on non-food grain crops were considered and exported more. Demand and supply of food grains should be considered and then export to other countries for foreign reserves. However, the major problems are the lack of information on commodities to export and other developments in the export markets. Different crops like maize and barley should be developed along with rice and wheat. Private sector investment should be encouraged and infrastructure should be developed more by considering it as a part of exports (Vyas, 1999).

In Indian agriculture, plantation crops like tea, coffee and cash crops like spices and tobacco are the important source for foreign exchange earnings in the economy. Exports should be done after the goods enter into domestic consumption. Balance of payments constraint is a major factor, which lay restrictions on agricultural trade flow. Prices should also be considered majorly. In world agricultural trade, India does not reflect much failure in agricultural production. The changes in the national and international trade policy may slow impact on the Indian agriculture. Distribution of agricultural output should be in proper manner as it leads to inequities, also by the political implications. Prices should not be high and wage goods should increase. Quota restrictions should be considered for the food grains exports. Trade should be done as support for public distribution system and to develop the potential to adopt the new technological progress in the agricultural sector (Nayyar and Sen, 1994).

### **2.2.5 Agricultural Subsidies**

Policy relating to fertilizer subsidy is an integral part of one of the development strategy followed by the entire food economy in India. The increase in population forced the economy to produce higher amount of food commodities to meet the demand. India used many input subsidies such as fertilizer subsidy and irrigation subsidy, which are the key elements of Indian food policy.

Policy makers made two points in fertilizer policy to fix the prices of fertilizers. Fertilizers should be at stable and reasonable rates. In that way, it would encourage the farmers to produce more output. This essential dependence on fertilizers makes government to control the prices of fertilizers under essential commodities act. Payment of subsidies in India started around 1976. India is spending around 20-50 percent on subsidy increase in feedstock, freight rate and capital cost which are the three major elements contributed towards the growth of the subsidy in the country. Major consumption centers of fertilizer subsidies are Uttar Pradesh, Haryana, and Punjab. It is very clear that any increase in the price of fertilizers or decrease in subsidy will have very negative impact on the output of the food grains and yield per hectare (Rabbi, 1986).

Government of India is playing a vital role in the development of agricultural sector. Government's main intention is to achieve self-sufficiency, creating employment opportunities and supporting people who are economically backward and small-scale farmers. In this regard, government of India is encouraging many policies such as price support programs, direct payments and input subsidies such as credit, fertilizers, seeds, irrigation, electricity etc. Government believes that input subsidies can bring benefits to the society as these subsidies can bring better standards in the Indian agrarian system. Agricultural subsidies are meant for farmers and agribusinesses to supplement their income, to minimize their risk factor, and to manage the supply of agricultural commodities. Subsidy is a very important tool for the development of the primary sector as well as the growth of farmers. Capital investment in Indian agriculture is growing rapidly. It was 13.5 percent in 2004-05 and 20 percent in 2010-11. This type of growth rate is possible only with the government initiatives in the agricultural sector. There are two types of government initiatives: one is public investment and another one is private investment. Public investment means irrigation works, command area development, land reclamation, forestation and development of the state level farms. Private investment includes improvement or reclamation of land, construction of non-residential buildings, etc. Government of India initiated majorly two types of subsidies, namely, fertilizer subsidy and food subsidy. These two types of subsidies took 90 percent of the share of operational subsidy. The Indian government does not take any tax on agricultural income. In India, fertilizer subsidy was 4,389 crores in 1990 and was increased to 75,849 crores in 2009. Above figures, show that there was 17 times increase in the fertilizer subsidy. In food subsidy, it was 2,450 crores in 1990 and 43,627 crores were spent in 2009 which was 18 times more. In India,

subsidies will be distributed according to merit, income and social group basis. India has very large amount of arable land and has invested lot of amount on the agricultural sector. Government initiated many steps for the development of agricultural sector. Agricultural subsidy was one of the major tool used by the government for the growth of the economy (Salunkhe and Deshmush, 2013).

## **2.3 Agrarian Crisis and Distress of Farmers**

Agrarian crisis was leading the farmers into distress and due to this reason; most of the farmers were committing suicides. This section mainly deals with the land holdings and impact of price, credit system, trade and market discussed within the existing literature.

### **2.3.1 Land Holdings**

After independence, land policy was taken into consideration in India as a developmental issue. Committee was formed under J. C. Kumarappa to identify the issues for land policy; which were also considered in five-year plan periods. Land policy consisted of five phases- abolition of intermediaries, land ceiling, utilization of uncultivated lands, soil and water conservation and land records computerization. Re-distribution of land was mainly considered as an option for poverty alleviation. Property rights came into existence. Changes took place even in land lease market. Land leasing period became short. Land use pattern were altered by forming soil conservation programmes and by using waste or unutilized lands for cultivation. Legalizing tenancy helped small and marginal farmers. The farmers who committed suicides lived on rented lands, but they were not legal tenants. They borrowed money from moneylenders and were unable to repay the loans. Legalized land should be used by only the agriculturalist for agricultural purposes. However, these policy points are facing more challenges as there are problems at implementation level (Deshpande, 2007).

In India, majorly four phases of land policy were considered after independence. Before independence, during the Akbar regime, land revenue system was implemented by Todar Mal. British rulers continued and allowed non-cultivating intermediaries who help in collecting the tax revenue in the villages. Presently, land policies mainly focus on land development and administration aspects. After independence, in first phase, intermediaries were abolished, second

phase, was to use uncultivable land, and third was towards water and soil development programs by developing watershed development, drought-prone area development and desert-area development program. Wasteland development agency considered to focus on wasteland and degraded land aspects. In first phase, tenancy reforms and distribution of land-by-land ceiling was considered but not succeeded. Tenancy reforms were not same in all states. Some states permitted, some states nearly banned, and some states allowed for voluntarily tenants. In some states, tenants were given the right to purchase land. Land ceilings were considered because of aspects like inverse size-productivity relationship; large holders left land in large areas; large population need a land to get income as they are land-less poor. However, benami problems were faced due to ceiling of land. In Karnataka, farmer suicides were rising because of decline in land size. Consolidation of holdings should be legalized, but it was difficult to formulate due to political aspects and caste system in India. Most of the affected population belonged to schedule caste. Land can be considered as poverty alleviation tool. Contract farming should be developed and computerization of land records should be maintained (Deshpande, 2003).

### **2.3.2 Price Impact**

Participation of small farmers in commodity market mainly raised two questions. Firstly, nature and extent of participation of small farmers in commodity market; especially as a seller, small and marginal farmers are facing many restrictions in selling their crops as compared to other groups of people. Secondly, small and marginal farmers are really benefiting from the price advantages provided by the commodity market. A sample study was conducted in Kerala by interviewing 140 rural households in four villages to know the relative share of different size-class of farmers in sale of different crops like tapioca, paddy, coconut, cashew nut, pepper and areca nut. However, the analysis revealed that with the exemption of paddy and tapioca, percentage of small farmers is lower than that of big farmers in market participation. This is because most of small and marginal farmers are growing paddy and tapioca for their subsistence. However, both the crops do not have any demand in the commodity markets. Eventually, in selling of commercial crops, the small and marginal farmer's participation is high. In fact, it was noted that small and marginal farmers are participating in commodity market for more than one crop as they are not confined to any single crop. They can sell variety of crops. Major difference between small and marginal farmers and big farmers is that small farmers sell their crop for subsistence and big

farmers sell their crops for self-consumption and market purposes. Tapioca is a low value crop. Majority of the small and marginal farmers are selling their crops at market price. In Kerala rice have more demand than the paddy, so small farmers sell paddy at market price and buy rice at lower price from fair price shops. Big farmers are receiving higher prices than small farmers in agro-industrial crops like cotton and groundnut. No distinct group is benefiting from the selling of paddy and tapioca. However, it was observed that, in case of tapioca and paddy crops, small farmers were receiving higher prices from village consumers and lower prices from traders and agents. Big farmers are receiving higher prices from trades and agents and receiving lower prices from village consumers. Here in the commodity market, lack of demand for produced commodities and low prices in the market is causing distress to small and marginal farmers (Ninan, 1988).

Present agricultural sector facing the problem of severe crisis, leading to raise in the problem of farmers suicide, widening the disparities between agricultural and non-agricultural sector, resulted in slow down of agricultural growth. Most of the farmers have high expectations on their future crop income but in reality they end up in heavy debts. Most of the states like Andhra Pradesh, Karnataka and Maharashtra have dry lands which resulted in failure in investment due to lack of irrigation facilities and public infrastructure. Moreover, most of income is spend on high yielding variety of seeds (Bt cotton seeds) which requires more water and irrigation facilities but leads to investment failure as the actual condition does not support the cultivation. Rise in domestic prices, due to liberalization of trade policies, inefficient and unsatisfactory public services are showing the problem of budget constraints. Investment factor is declining that resulted in low productivity and low output. There is a need for new approach to attain the required agricultural growth to save sector from the crisis (Vaidyanathan, 2006).

Ground level reasons behind farmer's suicides in India are investigated by taking farmer suicide as a primary issue. After interviewing farmers and farm scientists by using sample method, eight factors that leads to farmer's suicides were found. They are crop failure, climatic hazards, high cost, pressure of credit agencies, poor economic condition because of low family income, social life of the farmers which includes family burdens, weak market structure which result in low market prices leading to low or negative returns of output and also lack of procurement from government. Lack of minimum supports from government, no production incentives and crop insurance and failure in implementing the policies at ground level drives farmers into dilemma.

Modernization of agricultural methods with advance technology with high mechanization and input cost is hampering the livelihood of small and medium farmers. Weak psychology, low risk bearing capacity, worry of future and weak economic status are pushing farmers into darkness (Sapthapathy and Mishra 2012).

### **2.3.3 Credit System Impact**

There are some missing issues related to farmer suicides in districts of Telangana. Firstly, state neglected the issue of irrigation, which was not included in the list of factors behind farmer's suicide. In Telangana most of the land is dry land and level of ground water is very low, most of cultivation depends only on the bore wells and tanks. There is no proper public infrastructure in rural areas; because of this reason, farmers spend most of the income digging wells and constructing tanks for their crop cultivation. Farmers spend around 50000-100000 rupees digging wells, which drove them into debt trap. Secondly, sources of credit and problem of tenancy are the considerable issues. In Telangana there is no limit to private moneylenders in exploiting the farmers. In addition, other sociological issues like alienation of individual from family and social status, economic status and also about the great movements in Telangana like, peoples movement are against exploitation of intermediaries and money lenders (Revathi, 1998).

Situation of Punjab agriculture in post-green revolution period is miserable. Most of the cultivators and agricultural labors are committing suicide since the mid 1980's because of multi-dimensional crisis of the rural economy in the post-green revolution phase of agricultural development. Most of the victims are taking their lives because of the crop failure, unemployment and indebtedness. The phenomenon of farmer's suicides are observed in the areas where agriculture is highly commercialized. Punjab had diversified crops before green revolution period. Green revolution raised the productivity of rice and wheat, which showed sharp increase in the production and reduced the cost of production. But at the same time, small and marginal farmers got into debt traps by adopting this technology. Farmers who have high mortgage debt were forced to depend more on informal sources. Since mid-1980s, most of the poor farmers were taking their lives because of new technology agricultural practices. Due to these new practices, there was a degradation in land, water and environment, which led to crop failure and indebtedness. To control

this situation there is an urgent need to organize comprehensive survey on farmer suicides and need to identify an alternative to control the situation (Gill, 2005).

In an Indian agrarian community, farmer's life is based on some expectations and if they fail in their expectations that causes distress among the famers. One of the factors behind farmer's distress is the exploitative nature of private moneylenders and traders. 57 percent of the farmers do not know about the crop insurance scheme and 48 percent of the farmers are affected with the indebtedness. Out of one thousand farmers, 356 borrow from bank loans and other commercial banks and 309 borrow from private moneylenders at high rate of interest, as most of the farmers are unable to clear the bank loans in time. Growing disinterest among the farming community in agriculture, which has zero profit and negative returns, force them to do other jobs as an alternative to agriculture and allied activities. This is an alarming situation to the country growth rate (Deshpande and Prabhu, 2005).

Growing indebtedness to money lender-cum-trader even hampers social life of the farmer. Various natural calamities like adverse rainfall, low yields, adverse prices and rise in the cost of cultivation affect farmers. Seasonal instability resulted in exceeding the operational cost of Telangana to that of Gujarat, Punjab, Maharashtra, and Tamil Nadu. From around 60 varieties of cottonseeds, most of the farmers do not know which seed is suitable for their land and how many times they have to use a pesticide for their crop. In another way trader sells low quality of seeds filling them in high quality of bags exploiting the farmers. Due to rise in cost of cultivation and rise in investment, farmers take more loans from moneylenders at higher interest rates and get trapped in financial debts (Parthasarathy and Shameem, 1998).

Household indebtedness is main cause of farmer suicides in India. There are different factors behind these drastic phenomena. Those factors are categorized under four groups, namely technological, ecological, socio cultural and policy related. All the factors above mentioned are interconnected with indebtedness. Because of changes in farming patterns, indebtedness problem among rural households has increased and changed the living patterns and pushed them in darkness. Low financial status leads to distress among the households. According to 59<sup>th</sup> round of NSSO rural households are not getting any relevant information regarding new agricultural methods from the extension officers or from institutional sources which leads to decrease in the

output of the production process in the sector over the decades. Same reports showed that one third of the farmers are not interested in doing agriculture that they want to quit agricultural farming in favor any other job. This shows the situation of rural poor in India. If this situation continues for a longer time, it may lead to severe problem of food and agrarian crisis in India (Reddy and Galab, 2006).

Increasing gap between agricultural and non- agricultural activities leads to shift in growth from agricultural sector to non-agricultural sector. To avoid the situation we need a big push towards acceleration. The union government in 2008-09 budget announced massive loan waiver scheme of about 60000 crores. There are many exclusions and limitations to the loan waiver scheme. This budget failed to give big push to public investment and infrastructure, water management, research and extension, price stabilization, long-term issues etc. The budget presented mainly as an aim to control the crisis which was affecting the primary sector severely. Government took extreme step towards resolving the problem of core issues but it needs proper initiation of scheme without political barriers. According to 59<sup>th</sup> round of NSSO data, 27 percent of household use formal institutional credit, 20 percent of SC/ST households take loans from banks and a majority depend on private moneylenders said by Radha Krishna committee. By limiting the loan waiver scheme to farmers with a hold up of 2 hectores of land and by eventually eliminating the total dry land farmers from the scheme loan waiver scheme proves to be in favor of big farmers. People who avail the scheme once in a year do not have another chance and should wait up to 30<sup>th</sup> of June next year to avail the same. That means tenant farmer will not get kharif loan. In northern, eastern and central regions of the country only 4, 19 and 22 percent of the people respectively are using institutional credit and 40 percent of western-southern regions are availing the institutional credit. Because of loan waiver scheme there is chances of weakening the credit repayment system and moral hazard problem. Actually, farmers need measures for raising output and reasonable prices for their output. Production, which enables them, raises the output at sufficient levels, which leads to emancipation from crisis (Dev, 2007).

Indebtedness is the root cause of farmer's suicide in Andhra Pradesh. Because in the process of agriculture, changing in the patterns of land holdings which leads to changes in cropping patterns from food to non-food crops. Liberalization policies, ineffective policies of government, absence of reasonable prices, and public infrastructure added with high individualization due to

decline in joint families resulted in loss in agricultural fields. Rural families unable to digest changes in the agriculture after the new economic policies affected domestic prices and input costs in the market. In Ananthapur district 60 farmers committed suicide in 57 villages. Most of the farmer suicides happened in vulnerable sections of village among those who acquired less percentage of land holdings in the districts. Main cause of the suicides of farmers in village is indebtedness; only 26.9 percent of loans were taken from institutional sources and 73 percent of the loans were taken from non-institutional sources, which show the level dependency of farmers on non-institutional sources. Among the institutional sources, commercial banks provide 77.2 percent of loans, cooperative provide 9.2 percent and rural banks provide 11.3 percent. Among non-institutional sources 86.4 percent of loans are provided by landlords of the village with interest rate of 35 percent to 44 percent. This shows the level of exploitative nature of moneylenders in village. From borrowed amount, farmers are spending 23.6 percent on agricultural purposes, 76.3 percent are spend on unproductive purposes. Weak social conditions and economic conditions are taking the lives of the people. Primary data of the study shows 76.6 percent of farmers use pesticides, 12 percent use ropes and 2 percent use other sources for committing suicide (Nancharaiah and Jagadheesh, 2013).

Problem of indebtedness is shrinking farming community as a whole. Growth of the agricultural sector is declining because of implementing liberalization policies in 1991. In present time, there is an urgent need to control poverty, low economic accessibility and unemployment problems as these are sending farmers to the road of suicide, which ultimately lead to a declining trend in growth of the agricultural sector. Most number of the farmers expressed their disinterest on agriculture and allied activities and said that they do not want to continue in primary sector any more. Because of drastic changes due to globalization and liberalization policies and trade restrictions, which hampered the farmer's livelihood and interest on the farming, there is a rise in urbanization bringing crisis in Indian agricultural sector (Kanthi, 2014).

### **2.3.4 Trade and Market Impact**

There are many causes behind farmer's suicides in Vidharbha district in Maharashtra. In 2006, 772 farmers committed suicides because they lost in the competition. It was found that most of the farmer suicides are happening in cotton farming community in Maharashtra, and most of

the affected people are cotton farmers. When economy is closed, farmers are easily compensated for their loss, but after liberalization of agricultural trade policies in open economy, there is a drastic change in farming patterns. Frequent crop failures due to droughts and massive food grain supply from world market leads to fall in price of output in domestic economy which affected the farmer's income as a whole and led to high indebtedness in Vidharbha district, which culminated in farmer suicide. Lack of remunerative cotton farming, increase in cost of cultivation due to more use of Bt cotton seeds which require more quantum of water resources, lack of research and extension and institutional support pushed the farmers into debt trap that resulted in farmers suicides in Vidharbha district in Maharashtra (Mitra and Shroff, 2007).

In present scenario situation of vulnerable sections in the Indian agricultural society is very pathetic. Small and marginal farmers are becoming helpless in agricultural as well as market system. There is an urgent need to protect these sections from various vulnerable factors. Total 40 percent of land is operated area by small and marginal farmers. According to changes in agrarian patterns, there is a change in the output mix from food grains to non-food grain farming and input changes from traditional to modern methods of cultivation. These changes lead to drastic variations in input prices affecting the financial position of the farmer and trapping them in indebtedness. Liberalization policies effected agricultural sector over different plan periods. Minimum support price and crop insurance policy can bring the changes from crisis. In addition, there is an urgent need to promote formal credit institutions to reduce risks of indebtedness and farmers suicides (Vyas, 2004).

Rural economy is shrinking slowly because of various factors like debt and poverty. Present structure of rural economy is filled with exploitative nature and unsupportive conditions for sustainable agricultural production. Government is announcing relief packages for farmers but those packages are not reaching the actual needy people. Functioning of government in rural areas is not efficient. Concentration of authority in state headquarters not including farming community in decision-making leads to information barriers between these two groups. Commercialization and mechanization of agricultural methods resulted in heavy debt among the small and medium farmers due to lack of financial assistance and inadequate irrigation facilities in dry land areas. Farmers spend most of their money digging bore wells but high depletion of ground water leaves them with negative returns. State has utterly failed in controlling ground water exploitation and

allocation of resources among different social groups. Government schemes are not gaining any importance due to failure in implementation; for example, free power supply scheme, health facilities and free housing scheme failed at implementation level. Rise in IT sector leads to rise in dowry in rural villages adding to the reasons behind indebtedness. Due to mechanization of agricultural tools, people who are depended on making traditional tools of agriculture quit their profession migrating to urban areas for employment. Livelihood of the fishermen also changed because most of the fishing community is uneducated; in fishing community people borrow loans for their tools from moneylenders but his exploitative nature remains at same level. Without proper financial support and policies fishing community is shrinking. To bring change in this situation there is a need to strengthen the rural support system, people has to fight for their entitlements and community should participate in decision-making. This may lead to change in the situation of rural poor in the country (Sarma, 2004).

#### **2.4 Various Farmer Suicides- Case Studies**

This section looks into some of the case studies on farmer suicides in different states like Telangana, Andhra Pradesh and Karnataka.

Two third of suicide deaths in India is from Andhra Pradesh and Telangana alone. In early 80s there was a boom in cotton industry during which farmers referred to cotton as white gold. However, by the mid-80s, the situation reversed and cotton farmers suffered heavy loss especially in Telangana. In 1997-98 large number of farmers who cultivated cotton, chilly and groundnut committed suicide not only because of debts but also because of the changed nature of agriculture. During 1997 agrarian distress, farmers took more cash loans because of high use of pesticides, fertilizers. Many farmers were depended only on a single crop for their livelihood and was left miserable when that crop failed. They were pushed into debt traps. Whatever they produced in a given year as output was not sufficient to clear bank loans. Due to low economic position and lack of institutional support, they had to sell their lands at low cost to repay the remaining loan. Farmers remained in loses and took their lives because of distress (Rao and Suri, 2006).

Present phase of agrarian distress is due to rapid increase in individualization resulting in more number of farmer suicides. In northern districts of Karnataka, around 23 farmers committed suicides out of which 13 are from Bidar district and the rest from Gulbarga. Ecological, economic

and social variables helped in measuring the conditions leading to distress in the district of Bidar. Most of the land in Bidar is dry land out of which 80 percent needs to be irrigated through bore wells. Adding to their distress is the inappropriate infrastructural facilities. Only 45 percent of the people are educated, the rest do not know what to do or not do for better results in farming. They even do not know directions to use pesticides, which ultimately lead to crop failure or loss of crop and heavy debt. Poverty, mass deprivation, lack of support from government, inadequate policy regimes and lack of economic opportunities are affecting every individual farmer escorting them to take their own life. In market, there is massive exploitation by distributors, sellers and dealers who provide the farmers with duplicate products. Exploitation of private money lenders, lack of repayment ability and inability to cope up with the modern methods of cultivation are the reasons behind the distress. Poor climate, crop failure, poor knowledge, low quality of pesticides is hampering the livelihood of the farmers (Vasavi, 1999).

Drought regions like Rayalaseema and Telangana have borne a greater part of the strain of crisis. Peasants growing particular crops like tobacco, cotton and groundnut are taking their lives because of their individual inability to cope with sudden changes in the socio economic conditions. In the span of June and July, 2004, around 400 farmers have committed suicide because of indebtedness. It is during June and July months that the farmers make planning regarding their next crop and prepare sowing the kharif crop before monsoon arrives. However, this is also the time when small and marginal farmers have to clear their existing loans. Unable to clear their existing loans to get the fresh loans from the bank for the next season farmers fall into distress. Soil degradation, inappropriate agricultural practices, depletion in the level of ground water, withdrawal of institutional support and failure in state intervention affects the small and marginal farmers. Rise in input costs and fluctuations in the farm outputs prices are also the reason behind farmer suicides (Sridhar, 2006).

Most of the farmer suicides is happening among small and marginal farmers. After the initiation of economic reforms, resource and institutional constraints stared in farming community in the primary sector. With the implementation of green revolution production of food grains increased, country also meets the sufficient food production. However, the situation of small and marginal farmers having less than one acre of land remains unchanged. Green revolution helped only big farmers having highest plots of land and strong financial support. With the initiation of

new technology and high yield, variety of seeds pushed the small and marginal farmers into debt traps because high cost inputs and more mechanization. Empirically proved that with help of smallholdings only productivity improves but the most of land in the hands of landlords. Vulnerable sections experience very pathetic results in cropping area due to exploitation from every corner of the society. In addition to this is the lack of awareness, high transaction cost, low bargaining power and low prices for their output. There is a need to establish effective self-help groups and government intervention for better results. Public infrastructure should be increased which may help agricultural sector from the crisis (Reddy and Mishra, 2010).

Anomie is an effect of egoism. There are four broad types of suicides egoistic, altruistic, anomic and fatalistic. Tendencies of suicides can be explained with two variables: social integration and social regulation. Division of labor leads to excessive individualism that tends to egoistic suicide because of lack of social integration and hyperactive civilization that breeds the anomic tendency and egoistic tendency. Egoism is the structural pathology and anomie is normative. People who belongs to upper caste with high social status take all social benefits of the production. At same time low caste people are unable to access the minimum resources leading them to high indebtedness and distress. In British rule, caste structure has been used for allocating the official positions; upper caste people act as intermediaries by owning large plots of lands and economic status; poor remained poor. Later land reforms did not make any change in India. Green revolution helped in rise in food grain production but failed to meet the objective of reduction in poverty. It only benefited the upper caste people and not the poor because of high cost of inputs, more mechanization and high utilization of fertilizers and pesticides, which lead the poor farmers into uneven debt trap. Share of moneylenders in rural credit has fallen from 75 percent to 25 percent because nationalization of banks in 1969. However, in post reforms period formal credit fell from 15.3 in 1987 to 8.4 percent in 2006. Price policy in 1990s affected the input cost system raising the investment in agricultural sector at same time declining in public sector investment. New social order in villages changed the family system from joint family to individualization raising the risk of farming and leading to more urbanization. Farmers are committing suicides because of egoism and anomie, which can be considered as the main reasons behind farmer's suicides in India (Mohanty, 2013).

## Chapter- 3

### Changing Agrarian Structure

#### 3.1 Introduction

In this chapter an attempt is made to understand the structure of agriculture in terms of landholding and operated area, indebtedness, cropping pattern and cost of cultivation. For the analysis, secondary data obtained from Planning Commission, Agricultural Census, Ministry of Agriculture, Ministry of Labor and Employment, Government of India, Labor Bureau, Shimla/Chandigarh, Ministry of Statistics and Programme Implementation, National Crime Records Bureau (NCRB), RBI Data Base, All India Rural Credit Survey (1954); All India Debt and Investment Survey, Various Issues of Directorate of Economics and Statistics, Hyderabad. This chapter is divided in to two parts, First part explains about agrarian change and distress at national level while part two concentrates on Telangana state level.

Agriculture contribution to the economic development can be seen when inter-sectorial transfers in between Primary, Secondary and Tertiary sectors are ensured. Food production should be supplied to the entire population for enabling their physical capabilities to be invested as Human Capital, the processing of food and non-food products from the final products of agriculture sector can add value to the existing market structure, thus agrarian activities generating multiplier effects in secondary and tertiary sectors can ultimately add for the economic development of the nation.

Agriculture sector was given much more importance after the independence and it was increasing during the other plan periods.

Table 3.1: Plan Expenditure on Agriculture, Irrigation and Flood Control (in lakh)

Plan	Actual expenditure on agriculture, Irrigation and	Total plan expenditure
First (1951-56)	724 (36.9)	1960
Second (1956-61)	979 (20.9)	4672
Third (1961-66)	1754 (20.4)	8577
Annual(1966-69)	1578 (23.8)	6625
Fourth(1969-74)	3674 (23.3)	15779
Fifth(1974-78)	8741 (22.2)	39426
Annual(1978-80)	3284 (26.9)	12177

Sixth(1980-85)	16130 (14.7)	109291
Seventh(1985-90)	48099 (21.9)	218730
Eighth(1992-97)	127209 (25.6)	495669
Ninth(1997-02)	161791 (18.8)	859201
Tenth(2002-07)	162248 (10.6)	1525639
Eleventh(2007-12)	346707 (9.5)	3644717

Source: Planning Commission plan document of 11<sup>th</sup> five year plan

Table- 3.1, explains the expenditure during various plan periods in India. Share of agriculture, irrigation and flood control in the central government expenditure under various five years plans as declined from 36.9 percent in first five years plan (1951 – 56) to 20.9 percent in second five years plan (1956 – 61). The similar trend has observed till 1980. During 1978 - 1980 there has been marginal increasing expenditure on agriculture and irrigation as around 26.9 percent out of the total expenditure. In the eleventh five years plan there is substantial decline in expenditure on agriculture irrigation and flood control out of the total expenditure. This vivid clearly indicates the withdrawal of state support system towards agricultural irrigational development.

### 3.2 Land Holding Situation in India

Land is a major source of agricultural sector which plays a crucial role in development of this sector. In India, most of the land holdings were in the hands of few people and less number of land holdings was in the hands of more people. Proportion of land holdings in the country was totally unequal. Hence, here in this section it clearly explained about the number of land holdings and operational land holdings at India level in all size of groups from 1970-2011.

Table- 3.2: Number of Holdings of All Size Groups

Sl. No.	Size Groups	Number of Holdings (in %)								
		1970-71	1976-77	1980-81	1985-86	1990-91	1995-96	2000-01	2005-06	2010-11
1	Marginal	50.9	54.5	56.3	57.9	59.4	61.5	62.8	64.7	67.09
2	Small	18.9	18.05	18.08	18.4	18.8	18.7	18.9	18.5	17.9
3	Semi-Medium	15.04	14.3	14.01	13.6	13.05	12.3	11.6	10.9	10.04

4	Medium	11.1	10.06	9.07	8.14	7.10	6.1	5.48	4.9	4.24
5	Large	3.89	2.9	2.43	1.97	1.55	1.2	1.02	0.8	0.70
	All Sizes	100	100	100	100	100	100	100	100	100

Source: Agriculture Census 2010-11

Distribution of operational holdings among different size groups are represented table no 3.2. 1970-71 marginal holdings constitutes 50.9 percent on small holdings registered 18.9 percent in 1970-71. Marginal and small together accounted for 69 percent during the same period. Another hand semi-medium holdings constitute 15.04 percent. Medium and large holdings together accounted for 15 percent in 1970-71. During 2010 and 11 there is substantial increase in marginal holdings which constitutes 67.9 percent and small holdings were registered 17.9 percent in 2010-11. Marginal and small together accounted for 85 percent during the same period. Another hand medium and large holdings together accounted for 5 percent of rational holdings under their control out of the total holdings. Which means there is slight decline in large holdings during 2010 - 11.

Table- 3.3: Operated Area of All Size Groups

Sl. No.	Size Groups	Operated Area (in %)								
		1970-71	1976-77	1980-81	1985-86	1990-91	1995-96	2000-01	2005-06	2010-11
1	Marginal	8.9	10.7	12.04	13.3	15.04	17.2	18.6	20.2	22.49
2	Small	11.8	12.7	14.1	15.6	17.41	18.8	20.15	20.9	22.08
3	Semi-Medium	18.48	19.85	21.1	22.2	23.18	23.8	23.9	23.9	23.62
4	Medium	29.7	30.3	29.6	28.6	27.03	25.3	23.9	23.10	21.19
5	Large	30.8	26.2	23.01	20.05	17.31	14.7	13.21	11.82	10.59
	All Sizes	100	100	100	100	100	100	100	100	100

Source: Agriculture Census 2010-11

Table- 3.3 presents operated area among different categories of holdings at all India level from 1970-71 to 2010-11. It can be seen from above table that 8.9 percent operated area controlled by the marginal holdings and 11.8 percentage of area under small holdings out of the total operated area in 1970-71. Marginal and small together accounted for only 20 percent of operated area under

their control out of the total operated area. Semi medium holdings control 18.4 percent of the operated area out of the total operated area during the same period. Another hand 29.7 percent operated area under medium holdings and 30.8 percent of operated area controlled by the large holdings in 1970-71. It is to be noted that there is skewed distribution of land holding pattern persists in India during this period. In 2010-11, 22.4 percent of operated area controlled by the marginal while small holdings controlled 22.08 percent of operated area out of the total operated area. Semi medium holdings controlled 23.6 percent of operated area under their control during the same period. Another hand medium holding registered 21.1 percentage of operated area and large holdings 10.5 percent of the area out if the total area in 2010-11.

Table- 3.4: Average Size of Holdings of All Size Groups

Sl. No.	Size Groups	Average (inha.)								
		1970-71	1976-77	1980-81	1985-86	1990-91	1995-96	2000-01	2005-06	2010-11
1	Marginal	0.40	0.39	0.39	0.39	0.39	0.40	0.40	0.38	0.39
2	Small	1.44	1.42	1.44	1.43	1.43	1.42	1.42	1.38	1.42
3	Semi-Medium	2.81	2.78	2.78	2.77	2.76	2.73	2.72	2.68	2.71
4	Medium	6.08	6.04	6.02	5.96	5.90	5.84	5.81	5.74	5.76
5	Large	18.10	17.57	17.41	17.21	17.33	17.20	17.12	17.08	17.38
	All Sizes	2.28	2.00	1.84	1.69	1.55	1.41	1.33	1.23	<b>1.15</b>

Source: Agriculture Census 2010-11

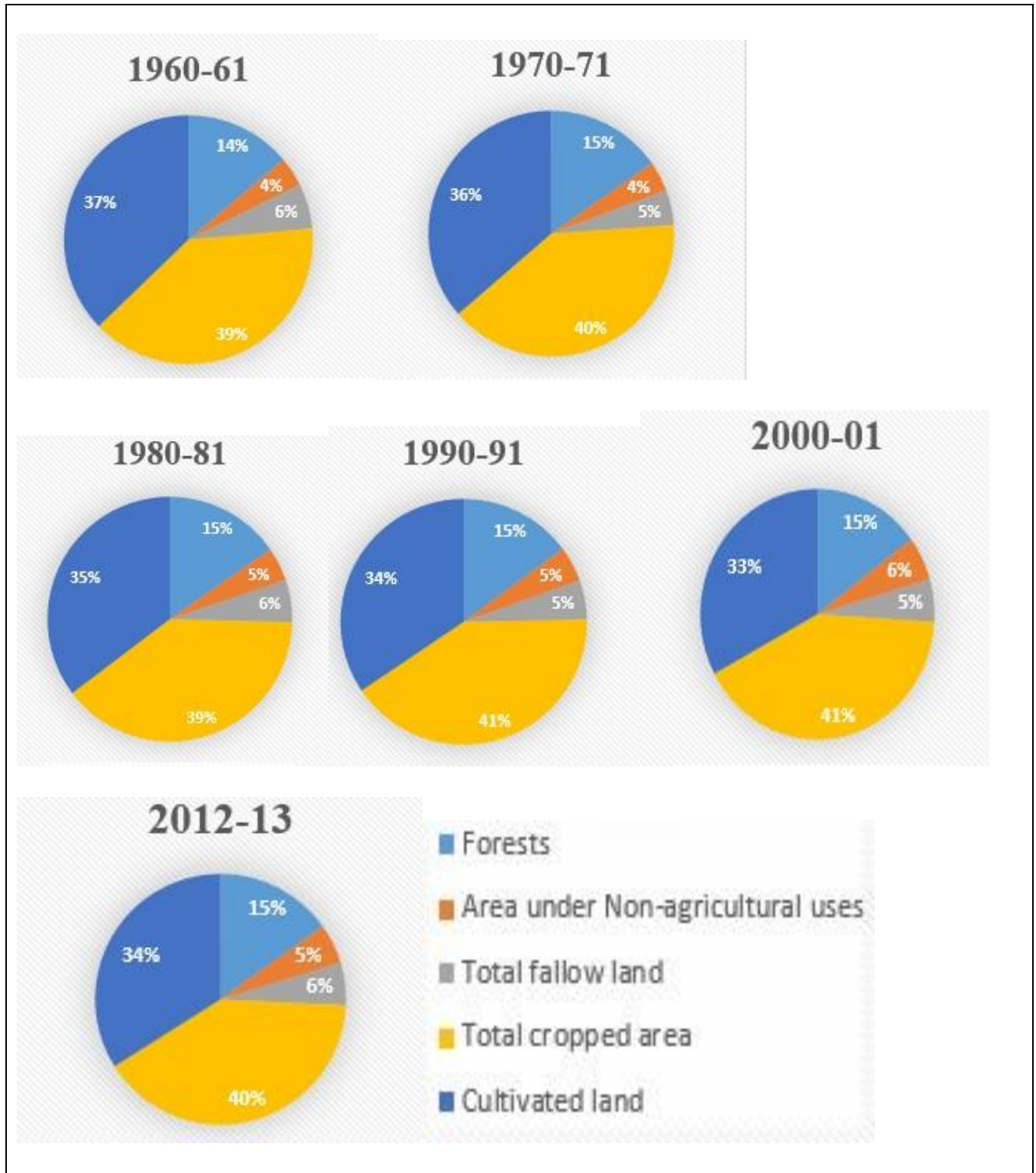
Table 3.4 depicts the average size of holdings among different categories of holdings at all India level. The average size of marginal holdings 0.4 percent in 1970-71 and declined to 0.39 percent in 2010-11. While small holdings constitute 1.44 percent in 1971 and same trend observe in 2010-11. Another hand semi medium constitutes 6.08 percent in 1970-71 and it marginally decline 5.77 percent in 2010-11. The same scenario has been observed in case of large holdings.

### **3.3 Changes in Size of Holdings over the years**

Land is the main essential unit required for the agriculture which given as a gift by nature to the world. Land use is basically referred to the land which is used for a purpose such as cultivation, house, etc. Land use pattern can be related to the physical characteristics of land, the institutional and other resources framework like labor and capital available. In India, land use data was collected from the village level. The land use statistics were collected through the area of forests, area of un-cultivable, fallow land, other land excluding current fallow and net sown area. Land use pattern was changing due to urbanization, industrialization, soil erosion, increasing in population, etc. Land use is also changing in rural areas because farmers are getting good value for their holdings due to the expansion of urbanization (Mohanty, 2007).

The below figure- 3.1, was clearly explaining land use pattern from total geographical area which includes, forest, area under nonagricultural uses, total fallow land, total cropped area and cultivated area. From below analysis it can observe that the total cropped area and cultivated area were showing slightly increasing and decreasing trends from 1960 – 2013. Where as in case of forest area there was no change in the total area. In case of total area under nonagricultural uses and fallow land showed slightly increasing trend in given period of time. Overall from the below analysis it was depicted that there was no greater change in the land use pattern in India over the years.

Figure- 3.1: Land use classification in India from 1960 - 2013

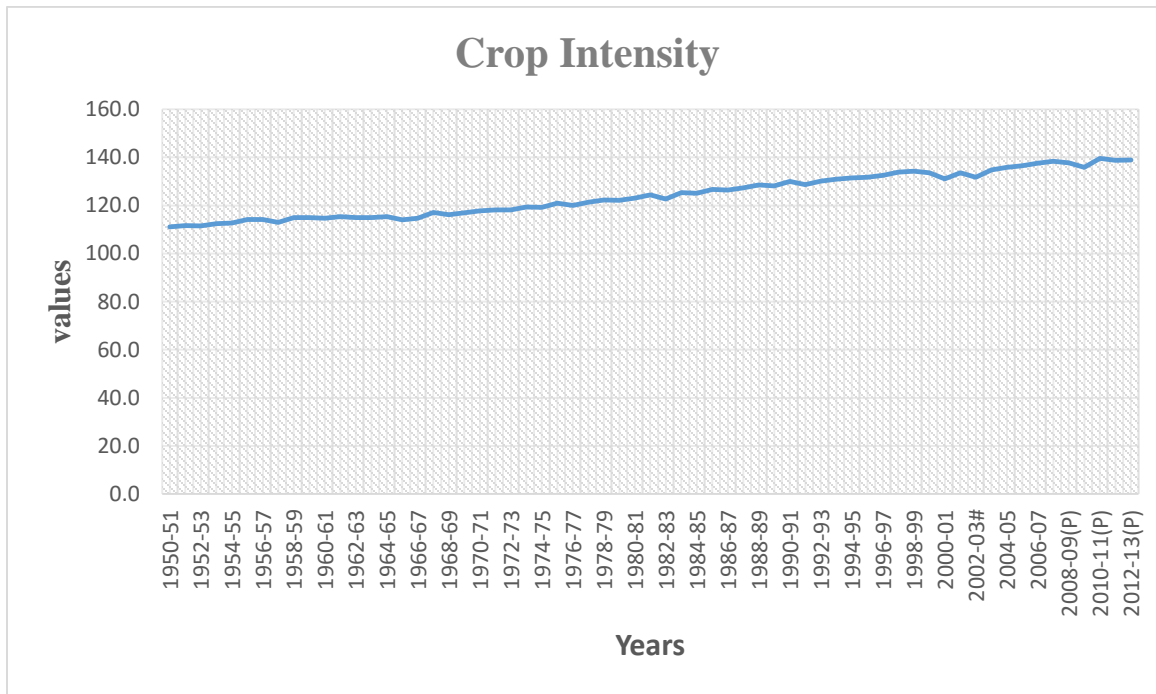


Source: Ministry of Agriculture Govt. of India

### 3.4 Crop Intensity

Crop intensity measures the number of times, a crop is cultivated in a given agricultural area (Sinha, 2015). Here, in the below figure- 3.2, showing cropping intensity in India over the years from 1950 – 2013. In the below analysis it clearly shows that slight raise in the cropping intensity over the year in a given period of time. In 1950 to mid-sixties there is slight increase in the crop intensity during this period, after mid-sixties there is a high increase in the intensity of crops because of implementation of green revolution technology. Due to improved technology of post green revolution period there is a large shift in the cropping pattern such as shift of land from dry crops to irrigational crops such as wheat and rice which leads to acute shortage of other crops like paddy etc this leads to more and more supply of same crops this is the main reason behind increase in crop intensity (Sebby, 2010).

Figure- 3.2: Crop Intensity in India



Source: Ministry of Agriculture Govt. of India

### 3.5 Cropping Pattern at All India Level

India is an agricultural dependent country produces both food crops and non-food crops. Below table is explaining about compound growth rate of area, yield and production of major food and non-food crops over the given period of time. In the below table different major crops were figured out they are namely: Rice, Wheat, Coarse cereals, total cereals, pulses, oil seeds and cotton.

Table- 3.5: Growth rate of Area, Yield, Production of Major Crops from 1971 to 2015

Crops	Particulars	1971-80	1981-90	1991-00	2001-10	2011-15
Rice	Area	0.48	0.49	0.56	-0.64	0.24
	Production	0.03	3.21	1.90	0.47	1.33
	Yield	-0.44	2.70	1.33	1.12	1.09
Wheat	Area	1.97	0.53	4.16	1.01	0.88
	Production	2.94	3.22	3.31	1.49	0.88
	Yield	0.94	2.66	1.99	0.47	0.07
Coarse cereal	Area	-1.05	-1.02	-2.11	-0.89	-3.46
	Production	-1.24	1.82	-0.75	0.77	-1.41
	Yield	-0.19	2.86	1.39	1.67	2.11
Total cereals	Area	0.11	0.08	-0.12	-0.27	-0.55
	Production	0.46	2.89	1.94	0.91	0.65
	Yield	0.34	2.96	2.05	1.18	1.21
Pulses	Area	-0.12	0.42	-1.54	1.35	-2.65
	Production	-3.16	1.92	-0.61	2.85	-0.96
	Yield	-3.03	1.50	0.94	1.47	1.73
Total oil seeds	Area	0.18	2.62	0.05	1.32	-1.05
	Production	-0.97	6.09	1.07	3.04	-3.36
	Yield	-1	3	1	2	-2
Cotton	Area	0.66	-0.17	1.59	1.73	2.95
	Production	4.86	5.00	1.60	9.70	1.37
	Yield	4	5	0	8	-2

Source: Calculated from RBI Data Base

Table- 3.5 presents growth rates of area, yield and production of major crops during 1970-80 to 2011-15. The magnitude of Growth rates of production of cotton crops increased from 4.8 percent in 1971- 80 to 5 percent in 1981-90. This is because of high growth rates of yield during this period. Further which declined to 1.60 percent in 1991-2000 because of fluctuations in area and yield. There has been a substantial increases growth rates of production in cotton due to high

contribution of yield then area. In between 2011- 15 the growth rates of area and yield declined due to decline of area and yield that may have reflected low growth rates of production of cotton. Such lower growth rates of cotton during this period may lead to increase the farmer distress in Telangana state. In case of pulses during the first and third period the growth rates of production registered negative compared with the growth rates of second and fourth fifth periods this may be perhaps due to high fluctuation area and yield during this periods. For wheat during all periods it shows increasing trend except 2011-15 because of less yield contribution in 2011-15.

### **3.6 Employment and Wages- All India level**

In India, majority of the population depends on agriculture and its allied activities. Agriculture is the one which creates the large employment opportunities. After the liberalization and globalization policies were introduced, the agriculture slowly became capitalist farming. Private sector started its interference in the agriculture sector by producing the inputs like seeds, fertilizers and pesticides. Also, investment was increased in the farming due to the high prices of inputs. Mechanization was slowly started and was gained much more importance but it reduced the labor in the field. Labor intensity is greater only in the small and marginal farmer fields as because they cannot spend more on the machines. Even the children will also work in the fields to save the labor cost. So, slowly the employment opportunities in agriculture were getting reduced and most of the labor was shifting to the urban areas for their life expenditure.

In agriculture, the wages for the labor were given daily basis. There was a difference between the wages according to the region/ place and gender. The male labor will get more wage than the female labor in almost all the areas in the country. The wages there were receiving during the farming period were not getting efficient to develop their living standards. Government also took initiative and introduced MGNREGA in rural areas which provides a 100 day employment during summer period. This scheme was helping the labor in rural areas to have their existence in the society. The types or forms of wages which received by the labor were explained in the below table- 3.6, explaining through the average earnings of rural households in agriculture in daily basis.

Table- 3.6: Average Daily Earnings of Rural Labor House hold Workers in Agricultural Operations All India (in Rs)

Category of House hold	Men		Women		Children	
	1999-2000	2004-2005	1999-2004	2004-2005	1999-2005	2004-2005
1	2	3	4	5	6	7
<b>All classes</b>						
Total	40.58	48.07	28.57	33.77	24.32	29.93
Cash	34.26	42.45	23.82	29.55	20.57	26.46
Kind	6.32	5.62	4.75	4.22	3.75	3.47
<b>Scheduled castes</b>						
Total	41.89	49.15	29.6	34.87	26.28	27.73
Cash	34.31	42.72	23.24	29.81	21.19	23.6
Kind	7.58	6.43	6.36	5.06	5.09	4.13
<b>Scheduled tribes</b>						
Total	33.19	41.79	26.44	31.67	22.41	29.37
Cash	28.56	36.39	22.58	26.89	19.63	24.08
Kind	4.63	5.4	3.86	4.78	2.78	5.29
<b>Other backward classes</b>						
Total	40.93	49.64	28.42	33.63	22.72	31.7
Cash	34.43	44.03	24.19	25.7	19.05	29.19
Kind	6.5	5.61	4.23	3.93	3.67	2.51

Source: Government of India ministry of labor and employment labor bureau Shimla/Chandigarh 2010.

Table- 3.6 shows the figures of average daily earnings of rural labor household workers in agricultural operations at all India level. From above data, it can observe that earnings can be done in two forms, i.e., wages in form of cash and kind, which means laborers are receiving their wage in two forms one is cash form and another is kind form that means taking some material in the form of wage- for example rice, vegetables etc.. From the data, it clearly shows that within all the social groups particular to men wage laborers, scheduled tribes are earning very low wage 33.19 percent as compared with other social group men laborers. In case of women the situation is same as men, scheduled tribe women are getting low wages as compared with other social groups. Amongst the category of children, scheduled tribes earned low level of wages in 1999-2000 and in 2004-05, similarly, scheduled caste child The above data also shows more laborers are taking the wages in cash form and very low percent of wages they are receiving in kind form.

### 3.7 Changes in Cost of Cultivation

The cost of cultivation was increasing in the agriculture production as the input prices were raised. The government investment in agriculture and the subsidies were declined. Also, the ground water was getting depleted due to degradation and the irrigation was not at all efficient. The other main reason is as there is an increasing demand for the cultivable land for other services. The income derived from the agricultural output was remaining low to the price they have kept for the production inputs. This is also a reason for the high prices in the cost of cultivation. Using excessive quantity of fertilizers and pesticides have also led to the higher cost of cultivation.

Here, the below table- 3.7, clearly explains about the cost of cultivation of various crops by taking mostly cultivated crops in different states in India. It observes that from the above table, various crops which are mentioned above within the given period (2008-2012) of cost of cultivation of all crops were increased drastically. In case of crops like paddy and wheat, the cost of cultivation of paddy in united Andhra Pradesh in 2008 was 29,664.84 which had increased to 58,027.19 in 2012. This shows the level of increasing trend in cost of cultivation and same situation was repeated in all the other crops which were mentioned in the below table.

Table- 3.7: Selected State/Crop-wise Estimates of Cost of Cultivation in India from 2008-09 to 2011-12

Crops/States	Cost of Cultivation (Rs./Hectare)							
	A2+FL				C2			
	2008-09	2009-10	2010-11	2011-12	2008-09	2009-10	2010-11	2011-12
<b>Paddy</b>								
Andhra Pradesh	29664.84	35104.80	35090.78	37946.69	46450.20	54202.54	51505.34	58027.19
Odisha	17478.05	19175.75	21894.98	27243.15	25909.05	28143.88	30318.40	35972.50
Punjab	25154.75	29031.73	30793.25	31248.72	45291.24	50650.21	51279.34	53813.93
Uttar Pradesh	17022.00	21336.61	21281.30	28147.45	28144.50	32327.78	32299.35	40146.68
West Bengal	24731.06	28101.85	32872.72	37959.78	33046.12	38111.55	43019.85	49142.99
<b>Wheat</b>								
Haryana	20063.32	22382.77	22943.95	27745.15	37450.75	41692.91	42323.07	51170.51
Madhya Pradesh	12464.40	13355.12	15504.33	17871.12	22489.75	24217.75	27532.33	33396.15
Punjab	17945.58	20222.99	23063.23	25711.09	35423.48	38282.74	42983.98	49298.84
Rajasthan	19119.08	20276.87	19595.57	26920.58	29876.36	31794.11	31630.89	40286.20
Uttar Pradesh	18979.38	20776.26	22306.96	26001.27	31902.74	33574.70	35984.44	42383.57
<b>Maize</b>								
Andhra Pradesh	25687.09	26735.73	31080.06	27975.52	37801.85	38564.55	46228.50	44038.14

Bihar	13513.92	16478.91	16911.51	20352.35	19857.70	21727.92	23251.28	27640.99
Karnataka	13792.85	14452.24	17945.68	24790.33	20671.54	20779.06	25946.48	36272.45
Rajasthan	14421.46	18142.09	20407.05	22231.04	19810.29	24170.84	26344.13	27539.49
Uttar Pradesh	15635.43	17832.72	14413.67	18127.16	21045.11	26822.77	21141.46	26461.18
<b>Gram</b>								
Andhra Pradesh	14421.98	17538.33	20057.82	16976.79	26762.09	25110.13	27009.25	28608.56
Madhya Pradesh	9803.89	10978.24	11447.59	16280.13		18468.11	18657.75	29948.11
Maharashtra	12985.95	12754.89	14854.05	21775.53	18679.33	18517.76	21066.61	31554.14
Rajasthan	8552.69	9574.15	9239.09	14068.57	12610.85	14386.16	14646.41	22226.27
Uttar Pradesh	12833.04	11782.60	15699.33	18846.89	21618.43	19709.15	26111.52	30746.91
<b>Arhar</b>								
Andhra Pradesh	17051.66	16519.59	16551.29	20210.01	24171.65	30960.04	24794.18	33439.35
Gujarat	13468.82	15186.15	16794.13	20850.78	19551.90	22927.11	23649.18	27780.68
Karnataka	10593.15	11974.66	15502.48	16067.60	16528.68	19420.00	22646.03	26052.49
Maharashtra	17130.55	25763.42	32977.66	32482.97	25270.26	40308.28	44650.40	46445.03
Uttar Pradesh	9794.05	10036.52	11998.49	16492.08	23076.74	23644.63	24681.41	30354.34
<b>Moong</b>								
Andhra Pradesh	6684.18	7351.56	7906.38	10692.69	13209.32	12624.29	12787.60	20669.87
Karnataka	6440.64	6975.16	8635.72	9914.17	7868.64	9958.79	11575.35	14007.79
Maharashtra	10780.76	13697.82	19206.96	20853.94	15371.45	19210.54	24524.63	26008.25
Orissa	5483.54	6776.60	7686.21	9285.83	8266.98	11329.74	11560.04	13352.63
Rajasthan	6204.23	6566.81	10761.18	13622.11	9165.59	9597.52	14347.47	17243.80
<b>Groundnut</b>								
Andhra Pradesh	21229.01	24771.12	34822.15	40676.21	30434.61	35699.44	52622.39	65632.13
Gujarat	22951.28	23652.41	24913.47	32905.07	30114.45	31053.00	33907.63	42836.57
Karnataka	13647.10	13947.36	17307.36	26873.17	17314.20	19046.88	23374.30	35575.79
Maharashtra	26078.66	23563.94	29548.34	44078.89	32683.46	32685.46	41448.50	55664.05
Tamil Nadu	22507.86	25244.64	30103.17	37888.68	30393.66	33112.70	38249.59	47915.18
<b>Rapeseed And Mustard</b>								
Gujarat	13740.64	15175.53	16659.48	17923.91	19083.55	22743.47	25410.16	30804.92
Haryana	14715.27	16573.39	14120.12	18439.97	27507.54	30753.93	29583.16	41935.26
Madhya Pradesh	8686.43	9341.63	10554.61	15084.43	17705.93	18682.26	22649.54	28892.26
Rajasthan	11385.70	11703.04	11767.67	16846.85	19259.84	20807.48	20829.25	28041.38
Uttar Pradesh	12774.41	12183.16	13667.83	17560.20	22560.30	24408.12	26766.64	31252.97
<b>Cotton</b>								
Andhra Pradesh	29140.77	27204.15	28861.62	38772.50	44756.72	42919.36	49401.41	61634.00
Gujarat	29616.09	29559.06	34552.00	41468.38	42070.44	42295.36	53725.77	58037.88
Haryana	29918.97	31895.29	29345.24	38803.42	44018.18	48920.33	46815.11	62329.97
Maharashtra	23711.44	26407.55	38359.33	45743.38	33116.82	35822.07	52583.55	61907.49
Punjab	29047.10	30055.90	31178.78	41380.69	50828.83	53071.62	59282.06	66697.56
<b>Sugarcane</b>								
Andhra Pradesh	56621.16	61278.53	76696.87	78442.10	91442.63	103157.50	127319.00	124488.90
Karnataka	55655.44	36366.67	49183.90	59069.94	86765.77	87597.81	86276.15	94585.62
Maharashtra	57673.60	74221.59	87114.96	102289.82	85801.95	127304.60	128996.60	146726.70

Tamil Nadu	66335.06	72426.99	89583.62	105074.87	89025.27	97335.86	113058.60	133840.60
Uttar Pradesh	24538.32	28398.06	38327.10	43129.23	45239.51	56283.73	66799.17	78549.41

Source: Ministry of Statistics and Programme Implementation, Govt. of India. (ON832)

Note: Cost A2 includes all actual expenses in cash & kind incurred in production by owner and rent paid for leased in land.

Cost C2 includes all actual expenses in cash & kind incurred in production by owner, interest on value of owned fixed capital assets (excluding land), rental value of owned land (net of land revenue), rent paid for leased-in land and imputed value of family labor.

FL- Family Labor, is imputed on the basis of statutory wage rate or the actual market rate, whichever is higher.

### 3.8 Price Policy

The government introduced price policy in agriculture to encourage the farmers in investing more in farming by providing the secured prices and to improve production. The government set up an Agriculture Price Commission in 1968, which advises in determining the minimum support prices and procurement prices of the production. Also, in 1985, government formed Food Corporation of India (FCI) which deals with the procurement of food grains at price given by the government and their sale through public distribution system.

The commission considers various factors such as cost of production, input/output price parity, trends in market prices, inter-crop price parity, demand and supply situation, international market price situation, parity between prices paid and prices received by farmers (terms of trade) and many other. Minimum support price provides the minimum price to the farmers according to the market situation. But, in the present situation most of the farmers were not getting even that due to the exploitation of market dealers and dalaries. Government also provides subsidies for increase in production but those were inefficient in allocating to the small and marginal farmers which are mostly benefiting only large farmers leaving the farmers in distress.

Here, below the Compound annual growth rate of minimum support price for food grains and non-food grains were taken into consideration according to various crops.

Table- 3.8: Compound Annual Growth Rate of Minimum Support Price for Food grains According to Crop Year (Fair Average Quality) (Rupees per Quintal)

Year	Paddy (Common)	Coarse Cereals	Wheat	Gram	Arhar (Tur)	Moong	Urad
1975-85	6	6	4	0	0	0	0
1986-95	9	8	8	10	10	10	10
1996-05	5	6	5	7	6	6	6
2005-16	9	9	0	0	11	11	11

Source: calculated from RBI Data Base

Government has taken some steps to safeguard the interest of farmers in agricultural sector like initiation of Minimum Support Price (MSP) policy and other policies. From the above table- 3.8, while calculating compound annual growth rates for 10 years' time period, it can be observed that the MSP is increased for the crops like paddy and coarse cereals which was 6 percent to 9 percent from 1975-85 to 2005-2016. Various crops like arhar, moong, urad were at positive rate in getting the MSP. In case of wheat and gram, the government was not provided MSP during 2005-16.

Table- 3.9: Compound Annual Growth Rate of Minimum Support Price for Non-Food grains According to Crop Year (Fair Average Quality)

Year	Sugar cane	Cotton	Jute	Ground nut (in shell)	Soya bean black	Soya bean yellow	Sunflower seed	Rapeseed / Mustard	Safflower
1975-85	0	0	3.75	0	0	0	0	0	0
1986-95	9.01	8.41	8.13	9.41	8.59	8.98	10.39	7.57	6.91
1996-05	5.77	3.80	6.15	5.24	4.14	3.93	900.00	7.05	6.84
2005-16	10.14	6.84	10.39	9.27	10.19	8.98	8.82	0	0

Source: calculated from RBI Data Base

Minimum support price for non-food grains are shown in above table- 3.9, while calculating compound annual growth rates for 10 years time period, in case of sugar cane, cotton, jute, ground nut, soya bean black, soya bean yellow and sunflower are shown increasing rate of

growth and other crops like rapeseed and safflower are shown zero growth rate at all India level. According to the table, MSP for non-food grains was like there is no MSP from 1975 to 1985 for most of the crops except jute. But, most of the crops are getting MSP. In the period of 1986-1995 it was showed that government provided good MSP for most of the crops. In 1996-2005, there was a decline in the price for most of the crops. But at the present situation, it is better for most crops except some crops mainly like rapeseed and safflower.

### 3.9 Credit Situation in India

In present days majority of the farmers are depending on the various sources to compete with present methods of agricultural farming. Most number of farmer suicides has happened due to indebtedness. Here in the below analysis explained about the direct institutional credit, indirect institutional credit and non-institutional credit of agricultural and allied activities.

Table- 3.10: Direct Institutional Credit for Agriculture and Allied Activities- Total  
(Short-term and Long- term)

Year	Co-operatives	State Governments	SCBs	RRBs	Co-operatives	SCBs	RRBs
1975-85	1.66	1.94	5.08	154.00	1.70	7.37	0.00
1986-95	1.69	0.15	1.71	1.69	1.42	1.49	2.45
1996-05	2.61	0.00	4.22	7.64	3.12	3.08	3.82
2006-13	1.31	0.00	5.01	3.23	0.00	2.85	2.47

Source: Calculated from RBI Data Base

Sources for direct institutional credit to agriculture and allied activities were decreased as by observing from the table- 3.10. Co-operatives were fluctuating from decade to decade and finally decreased. From state government, the credit system was drastically changed from 1975 to 2013. In case of SCBs, from the period of 1986-95 it was drastically declined, but in 2006-13, it was increased its credit system. RRBs are totally declined from 154 percent to 3.23 percent. This was the situation in short term direct institutional credit. In long term institutional credit system, except RRBs remaining Co-operatives and SCBs are showing declining trend as compared with the earlier situation. Total analysis shows that people are not reduced the direct institutional credit for agricultural and allied activities in both long term and short term.

Table- 3.11: Indirect Institutional Credit for Agriculture and Allied Activities

Year	Co-operatives	SCBs	RRBs	REC	Co-operatives	SCBs	RRBs	REC
1975-85	4.37	0.00	0.00	3.30	8.26	3.83	0.00	5.27
1986-95	2.30	0.00	0.00	1.72	4.72	1.10	0.00	3.12
1996-05	5.57	19.97	0.00	7.98	5.33	8.82	0.00	5.02
2006-13	0.00	0.00	0.00	4.24	0.00	0.94	0.00	0.00

Source: calculated from RBI Data Base

From the above table- 3.11, indirect institutional credit clearly shows that Co-operatives were started with 4.35 percent in 1975 and declined totally in 2013. In SCBs started with zero percentage of credit and in meanwhile in 1996-2005 it was showed 19.97 percent, then remained with the initial position in 2013. In RRBs situation is constant, there is no growth or decline in the percentage. But, in case of RECs situation was reverse, it was fluctuating decade to decade and finally showed increased rate of percentage in short term period. In case of long term indirect credit, all the sources of credit showing declining trend from 1975 to 2013.

Table- 3.12: Non-Institutional Rural Credit

(Per cent)

Source of credit	1951	1961	1971	1981	1991	2002
Non-Institutional Agencies	92.8	85.2	70.8	38.8	36.0	42.9
Landlord	1.5	0.9	8.6	4.0	4.0	1.0
Agricultural Moneylender	24.9	45.9	23.1	8.6	6.3	10.0
Professional Moneylender	44.8	14.9	13.8	8.3	9.4	19.6
Traders and Commission Agents	5.5	7.7	8.7	3.4	7.1	2.6
Relatives and Friends	14.2	6.8	13.8	9.0	6.7	7.1
Others	1.9	8.9	2.8	4.9	2.5	2.6
Total	100	100	100	100	100	100

Source: All India Rural Credit Survey (1954); All India Debt and Investment Survey, Various Issues.

According to the above table- 3.12, it clearly depicted that non- institutional sources were declining from 92.8 percent to 42.9 percent in 2002. People are stopped taking loans from non-institutional sources because highest exploitative nature of non-institutional sources and also the

most common factor of farmer distress is non-institutional credit system. Small and marginal farmers lost their land, house, crop, and wealth because of the exploitative nature of the non-institutional sources. Because of many negative factors, non-institutional sources of credit have declined.

### 3.10 Farmer Suicides- All India Level

The recent spate of farmer suicides in Indian economy has become very important aspect of research and appropriate policy debates in the area of farmer suicides in India. As per National Crime Records Bureau 2013, a total no. of 2.9 lakh farmers have committed suicides during 1995-2013. In the below table- 3.13, it is clearly depicted that there is a rise in farmer suicides from 1995 to 2004. The year 2004 regarded as a highest number of farmers suicides in the country from last two decades. From 2004 onwards, one can observe a slow decline in farmer suicides which was 11722 in 2013. The highest number of farmer suicides have occurred in between the years 1998 and 2010. From 2004 onwards, the percentage of farmer suicides has been declining. Reasons behind the fall in suicides are- after 2004 weather conditions were favorable towards agriculture, state introduced the crop insurance scheme and also rural institutional credit played a crucial role in controlling debts leads decline in suicides of the farmers.

Table- 3.13: All India Total Farmers Suicides 1995-2013

Year	No of farmers	Percentage of farmers suicide
1995	10720	3.6
1996	13729	4.6
1997	13622	4.6
1998	16015	5.4
1999	16082	5.4
2000	16603	5.6
2001	16415	5.5
2002	17971	6.1
2003	17164	5.8
<b>2004</b>	<b>18241</b>	<b>6.2</b>

2005	17131	5.8
2006	17060	5.8
2007	16632	5.6
2008	16196	5.5
2009	17368	5.9
2010	15964	5.4
2011	14027	4.7
2012	13754	4.6
2013	11772	4.0
Total	296466	100

Source: National crime records bureau 2013.

### **3.11 Agrarian Structure**

Agrarian structure was changed in united Andhra Pradesh according the change continued in all over the land. The agrarian structure was changed majorly through the change in land holding situations. Later, the structure was changed because of the privatization due to the liberalization policy. The major change was occurred through the introduction of green revolution technology for small and marginal farmers. They adopted this method as because even government encouraged them to adopt by providing subsidies for inputs. The land holding situation and operational holdings were given below in detailed.

#### **3.11.1 Land Holding Situation in United Andhra Pradesh**

In united Andhra Pradesh large proportion of people depended on the agricultural sector. State has divided into three regions namely Coastal Andhra, Rayalaseema, and Telangana. Most of the lands in Rayalaseema and Coastal Andhra were wet lands and in Telangana region, most lands were dry lands. In the state, according to statistics, most of the land holdings were in the hands of marginal farmers. Hence, this section clearly explains the share of number of land holdings and operational holdings in the united Andhra Pradesh.

Table- 3.14: Share of Number of Holdings by All Size Groups in United Andhra Pradesh

Years	Marginal	Small	Semi-Medium	Medium	Large
1970-71	46	18.5	17.4	12.7	4.3
1976-77	46.6	20.3	17.4	12.2	3.4
1980-81	51.6	21.6	16	8.8	2.1
1985-86	54.1	20.8	15.2	7.98	1.77
1990-91	56.1	21.2	14.5	6.93	1.27
2000-01	60.9	21.8	12.3	4.4	0.6
2005-06	61.6	21.9	12.0	4.0	0.5
2010-11	63.94	22.15	10.62	3.02	0.27

Source: Directorate of Economics and Statistics, Hyderabad.

From the above table- 3.14, it can be observed that the number of operational holdings of marginal farmers was showing increasing trend from 46.0 percent in 1970-71 to 63.94 percent in 2010-11. For small farmers, there was a constant increasing trend from 18.5 percent to 22.15 percent from 1970-71 to 2010-11. There was a declining trend in case of semi-medium farmers, which was from 17.4 percent to 10.62 percent in 2011. In case of medium and large farmers, there was a drastic decline in the number of operational holdings from 1970 to 2011. From table 3.15, it can be observed that the share of operational holdings in the category of Marginal and Small Farmers has been increasing over the decades.

Table- 3.15: Share in Operated Area by All Size Groups in United Andhra Pradesh

Years	Marginal	Small	Semi- Medium	Medium	Large
1970-71	8	11.3	19.2	30.8	30.7
1976-77	9.3	12.8	20.8	32.3	24.8
1980-81	13.1	16.8	22.7	27.8	19.5
1985-86	14.5	17.3	23.9	27.2	16.9
1990-91	16.4	19.5	25.2	26.1	12.8
2000-01	21.6	24.7	26.4	19.9	7.5

2005-06	22.7	25.8	26.5	19.0	6.1
2010-11	26.08	28.82	25.78	14.45	3.87

Source: Directorate of Economics and Statistics, Hyderabad.

From the above table- 3.15, it can be observed that the marginal, small and semi-medium farmers were increased their participation in agricultural sector as their share in operated area is increased from 1970-71 to 2010-11. In case of marginal farmers, operational area share was increased from 8 percent to 26.8 percent in 2010-11. In case of small farmers, it was raised from 11.3 percent to 28.82 percent in 1970-11 to 2010-11. Small and medium farmers, were also increased their share of operational holding from 19.2 percent to 25.78 percent in the span of 1970-71 to 2010-11. But, in case of medium and large farmers there was a decreasing trend in the share of operated area in agricultural land.

Table- 3.16: Social Group Wise Number of Operational Holdings in 2005-06 and 2010-11 (in lakh hecter).

Social group	2005-06	2010-11
SC	14.22	14.57
ST	9.2	10.59
Others	96.95	106.59
Total	120.44	131.75

Source: Report on census of land holdings 2010-11, Directorate of Economics and Statistics, Government of Andhra Pradesh, Hyderabad.

Here from the above table- 3.16, clearly explaining number of land holdings through social group wise. By observing above data, all the social groups like SC, ST and Others were showed increase in the number of holdings in 2010-11 compared to 2005-06. The total number of holdings was increased from 120.44percent to 131.75percent in 2010-11.

Table- 3.17: Social Group Wise Area Operated in 2005-06 and 2010-11 (in lakh hecter)

Social group	2005-06	2010-11
SC	11.36	11.00
ST	12.12	12.48

Others	121.41	119.45
Total	144.88	142.93

Source: Report on census of land holdings 2010-11, Directorate of Economics and Statistics, Government of Andhra Pradesh, Hyderabad.

Here from the above table- 3.17, it can be clearly observed that only ST group was showed increase in the number of holdings in 2010-11 compared to 2005-06. The SC and Others groups were showed decline in their number of holdings in 2010-11 compared to 2005-06. The total number of holdings was also slightly decreased from 144.88 percent to 142.93 percent in 2010-11.

### 3.12 Cropping Pattern Changes in United Andhra Pradesh

Table- 3.18: Cropping Pattern Changes in United Andhra Pradesh from 1970 to 2011 (in million hectares)

Crop	1970-73	1987-90	2004-07	2009-11
Rice	3.1	3.9	3.6	4.3
Maize	0.2	0.3	0.7	0.8
Other coarse grains	4.1	2.1	0.6	0.3
Total cereals	7.6	6.3	5.6	5.6
Pulses	1.3	1.5	1.8	1.7
Total food grains	8.9	7.8	6.9	7.4
Cotton	0.3	0.6	1.0	1.1
Oil seeds	2.2	3.8	2.6	2.7
Total non-food grains	3.7	4.9	5.9	4.7
Gross cropped area	12.7	12.8	12.8	13.8

Source: Directorate of Economics and Statistics, Hyderabad.

Here in the above table- 3.18, it was clearly explained about the changes in the cropping patterns in united Andhra Pradesh from 1970-2011. Crops like rice and maize showed some increasing trend. Crops like other coarse grains, total cereals, total food grains, and total non-food grains were declined in the given period of time. Other than these, remaining crops were showed some increasing trend in cropping pattern.

### 3.13 Changes in Cost of Cultivation in United Andhra Pradesh

Cost of cultivation was becoming high due to the increasing prices of inputs mainly because of the privatization. Many private companies were entered in the agricultural market and producing inputs which were used in agriculture and increasing the price of the inputs. Also, the income got through the crop output was not all equalizing the costs of inputs invested in the production for the farmers. So, the cost of cultivation was becoming higher than the output they are getting.

Table- 3.19: Selected Crop-Wise estimates of Cost of Cultivation in United Andhra Pradesh from 2008-2009 to 2011-2012 (Rs. /Hectare)

Year crop	A2+FL				C2			
	2008-09	2009-10	2010-11	2011-12	2008-09	2009-10	2010-11	2011-12
Paddy	29664.84	35104.80	35090.78	37946.69	46450.20	54202.54	51505.34	58027.19
Maize	25687.09	26735.73	31080.06	27975.52	37801.85	38564.55	46228.50	44038.14
Gram	14421.98	17538.33	20057.82	16976.79	26762.09	25110.13	27009.25	28608.56
Arhar	17051.66	16519.59	16551.29	20210.01	24171.65	30960.04	24794.18	33439.35
Moong	6684.18	7351.56	7906.38	10692.69	13209.32	12624.29	12787.60	20669.87
Ground nut	21229.01	24771.12	34822.15	40676.21	30434.61	35699.44	52622.39	65632.13
Cotton	29140.77	27204.15	28861.62	38772.50	44756.72	42919.36	49401.41	61634.00
Sugar cane	56621.16	61278.53	76696.87	78442.10	91442.63	103157.50	127319.00	124488.90

Source: Ministry of Statistics and Programme Implementation, Govt. of India. (ON832)

Note: Cost A2 includes all actual expenses in cash & kind incurred in production by owner and rent paid for leased in land

Cost C2 includes all actual expenses in cash & kind incurred in production by owner, interest on value of owned fixed capital assets (excluding land), rental value of owned land (net of land revenue), rent paid for leased-in land and imputed value of family labour.

FL- Family Labour is imputed on the basis of statutory wage rate or the actual market rate, whichever is higher.

Above table- 3.19, clearly explaining about cost of cultivation of different crops from 2008 to 2012. Cost of cultivation of various crops were increasing from 2008 to 2012. From above data can observe that expenses in cash and kind incurred in production by owner, other cost like interest

rate and value of fixed assets are more than the family and other costs of cultivation which shows the increased demand on fixed capital assets excluding land and other cost related to land. Because in a production process, land plays a major role and this was the main reason behind the increased cost of cultivation.

### 3.14 Credit Situation in United Andhra Pradesh

Government introduced RRB's, commercial and cooperative banks for giving credit to the farmers for farming. Most of the farmers were taken the agriculture loans through the banks. But, the farmers were not getting the efficient output to clear the credit. The banks will not issue the second loan until the first was cleared. Also, at present, the public sector banks were reduced their share in providing the loans to the farmers. So, the farmers were depending more on private money lenders which finally leaving them in indebtedness.

Table- 3.20: Disbursement of Agricultural Credit in United Andhra Pradesh

Year	Type of Loan	Commercial Bank	RRBs	Co-operative Bank
1992-93	Crop Loan	46.2	12.3	41.4
	Agricultural Term	40.4	7.2	52.4
	Total Loans	44.7	11	44.3
1993-94	Crop Loan	48.7	12.4	38.9
	Agricultural Term	54	5.4	40.6
	Total Loans	50.2	10.5	39.4
1994-95	Crop Loan	50.5	13.1	36.4
	Agricultural Term	53.9	6.3	39.7
	Total Loans	51.2	11.7	37.1
1995-96	Crop Loan	51.9	12	36
	Agricultural Term	50.9	7.8	41.3
	Total Loans	51.7	11.1	37.2
1996-97	Crop Loan	50.5	11.2	38.3
	Agricultural Term	42.8	6.8	50.5
	Total Loans	49	10.3	40.7
1997-98	Crop Loan	54.3	12.5	33.2
	Agricultural Term	40.7	6.1	53.2
	Total Loans	51.6	11.2	37.2
1998-99	Crop Loan	54.4	12.2	33.4

	Agricultural Term	47.1	5.1	47.8
	Total Loans	53.2	11	35.8
1999-20	Crop Loan	56.2	11.5	32.2
	Agricultural Term	48.2	6.4	45.4
	Total Loans	54.8	10.7	34.5
2000-01	Crop Loan	52	13.4	34.6
	Agricultural Term	56	9.1	34.9
	Total Loans	52.7	12.7	34.7
2001-02	Crop Loan	53.3	15.7	31
	Agricultural Term	56.3	11.8	31.9
	Total Loans	53.8	15.1	31.1
2002-03	Crop Loan	50.4	14.4	35.2
	Agricultural Term	55.9	13.0	31.2
	Total Loans	49.9	13.9	36.2
2003-04	Crop Loan	55.9	12.9	31.2
	Agricultural Term	55.9	13.0	31.2
	Total Loans	55.9	13.0	31.2
2004-05	Crop Loan	62.2	19.0	18.8
	Agricultural Term	73.6	22.1	4.3
	Total Loans	65.0	19.7	15.2
2005-06	Crop Loan	60.3	18.7	21.0
	Agricultural Term	75.5	12.3	12.3
	Total Loans	62.8	17.6	19.6
2006-07	Crop Loan	61.7	17.2	21.2
	Agricultural Term	61.6	17.2	21.2
	Total Loans	61.6	17.2	21.2
2007-08	Crop Loan	63.5	16.8	19.7
	Agricultural Term	63.6	16.7	19.7
	Total Loans	63.5	16.8	19.7
2008-09	Crop Loan	62.5	17.5	19.9
	Agricultural Term	71.2	14.3	14.6
	Total Loans	63.8	17.1	19.1

Source: Un-Published PhD. Thesis on “Agrarian crisis and Farmer’s suicide: a study of three districts in Andhra Pradesh” (2014) by Dr. Jagadheesh School of Economics, University of Hyderabad.

Table- 3.20, showing agricultural credit in united Andhra Pradesh from 1991 onwards. From above table it clearly shows that there is increase in the disbursement of credit by commercial banks and RRBs. In case of cooperative banks, there is a decline in the credit disbursement from 1991 to 2009. Major role of cooperative banks and rural banks is to provide the credit to marginal and small farmers but, they are preferring to give credit to big farmers. To avoid this disruption of giving more credit to one community, banking sector reforms were introduced during nineties. Decline in the credit of cooperatives and other banks were pushed the small and marginal farmers to private money lenders even for highest rate of interest.

Table- 3.21: Year Wise Distribution of Credit to Tenancy Farmers in Telangana State

Sl. No.	Districts	2011-12		2012-13		2013-14	
		Tenancy Credit Card (Old+New)	Credit (in crores)	Tenancy Credit Card (Old+New)	Credit (in crores)		Credit (in crores)
1.	Adilabad Old New	6029 635	0.76	7268 895	1.71	2947 600	1.74
2.	Karimnagar Old New	15857 2797	8.62	9513 3519	8.51	9413	7.18
3.	Khammam Old New	31974 8600	14.59	17598 5019	10.69	21830 3503	9.54
4.	Mahbubnagar Old New	25097 5787	9.60	11159 222	1.05	656 40	0.27
5.	Medak Old New	6383 1185	2.74	2542 1032	389	2009 833	2.19
6.	Nalgonda Old New	31365 9401	250.78	17774 2327	6.55	3021 979	2.49
7.	Nizamabad Old New	8543 986	5.73	6644 101	0.06	6409 235	0.20
8.	Ranga Reddy Old New	6301 1943	3.48	3572 662	2.42	133 25	0.09
9.	Warangal Old New	30801 2356	4.95	22181 937	2.63	12136 3503	0.22

Source: Un-published M.Phil Thesis Entitled “a study of some aspects of agricultural credit in India” K. Swamy Nath (2015).

Above table- 3.21, explaining remaining part of credit situation in state of Telangana from 2011 to 2014 by taking all the ten districts of the state. Table clearly depicts the number of credit cards which were issued in given years and total amount of credit of particular districts in the state. Except Adilabad district all the other districts were decreased their share of credit from 2011-2013. But in case of Adilabad district share of credit was increased from 2011 to 2012 as per both cards and credit. But in 2014, all the districts except Khammam decreased their share of credit. This analysis shows the current situation of credit in the Telangana state.

### 3.15 Employment in United Andhra Pradesh

Agriculture is the sector which provides the major employment for rural population in the state. The population was increasing and also the demand for employment was increasing simultaneously. The agricultural cultivators were not more percent in rural areas may because of education and urbanization. But, the agricultural labor was more compared to cultivators. The growth rate through the agricultural sector was drastically declined.

Table- 3.22: Agricultural Workers in United Andhra Pradesh (in million number)

Year	Total Population	Growth Rate	Rural Population	Cultivators	Agricultural Labourer	Total
1951	31.26	14.02	25.82	5.76	0.63	6.39
1961	35.98	15.65	29.71	7.49	5.34	12.83
1971	43.5	20.9	35.1	5.79	6.83	12.62
1981	53.55	23.1	41.06	7.41	8.33	15.74
1991	66.51	24.2	48.62	7.89	11.63	19.52
2001	76.21	14.59	55.4	7.86	13.83	21.69
2011	84.58	10.98	56.36	6.49	16.97	23.46

Source: Directorate of Economics and Statistics, Govt. of Andhra Pradesh.

Note: Indicates the data of 2011 population census.

Above table- 3.22, clearly explains about the situation of agricultural workers in united Andhra Pradesh from 1951 to 2011. Rate of rural population has been increased from 25.82 million to 56.36 million. In case of cultivators there was slight increase from 5.76 to 6.49 in 2011. Number of agricultural labour increased drastically from 0.63 to 16.97 in 2011.

### 3.16 Farmers Suicides in Telangana

Table- 3.23: List of Farmer Suicides by Government of United Andhra Pradesh in Telangana from January, 1997 To 2011

District	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2014	Total
Adilabad	9	18	23	25	25	25	2	68	60	83	48	42	18	6	0	80	452
Karimnagar	12	15	15	36	38	36	11	96	73	48	55	64	42	0	0	58	541
Khammam	1	7	0	9	4	7	2	37	23	22	7	12	2	0	0	18	133
Mahbubnagar	4	15	20	9	22	17	4	112	57	35	30	29	17	4	0	47	375
Medak	2	1	5	5	11	25	17	92	45	30	28	32	32	21	7	76	353
Nalgonda	10	9	8	15	19	11	34	53	52	48	13	43	17	11	0	37	343
Nizamabad	1	3	6	8	24	9	8	64	27	12	17	7	10	0	0	31	196
Ranga reddy	0	4	2	1	6	5	2	56	40	19	21	18	25	0	0	24	199
Warangal	46	78	79	95	97	77	27	112	45	32	24	11	2	0	0	53	725
Total	85	150	158	203	246	212	107	690	422	329	243	258	165	42	7	424	3317

Source: Macharla, Ilaiyah. (2015). 'Determinants of farmer's suicides in Andhra Pradesh: An analysis'. *International Journal of Academic Research*. Vol. 2, pp. 81-87; and Praja Shakti daily newspaper- 7/8/9<sup>th</sup> November, 2014.

Above table-3.23, explains the situation of farmer suicides in Telangana state from 1997 to 2014. In Telangana state, Warangal district was showing the highest number of farmer suicides initially from 1997 to 2002. From 2004 onwards all the districts in Telangana were affected. Farmer suicides are crippling the nation's economy and also breaking the spine of the farmers. Agriculture should be protected and farmers should be saved in the interest of the people of the country as a whole (Kanthi, 2014). The table clearly depicts that state failed in policy framework as well as in its implementation. Highest number of farmers committed suicide in the state of Telangana was recorded in the year 2014. Adilabad has highest number of farmer's suicides around 80 in 2014. In total approximately, according to sources all over Telangana 424 farmers were committed suicide in 2014. Because of lack of fresh bank loans in the monsoon crop season has also pushed farmers to despair. Due to deficient monsoon, farmers in Telangana have depended on bore wells. But the government doesn't offer institutional credit for digging bore wells. Farmers are forced to borrow from private money lenders at exorbitant interest rates. According to a report in the Economic Times August 2014, the rainfall deficit in India's newly formed state was 48 per cent until August 5, a stark contrast to the 19 per cent national shortfall. The report also states that some 50 lakh farmers owe at least Rs 50,000 crore in crop loans to banks (The Economic Times, August 7<sup>th</sup> 2014, 12:35pm).

### **3.17 Conclusion**

Agriculture is a back bone of Indian economy. Wealth of the economy depends upon the health of the agricultural sector, so it needs appropriate policy frame work and implementation. There is a more need to concentrate on the agricultural research at ground level. The State intervention plays a vital role in development of agricultural sector in the economy. There is a need to provide minimum financial assistance and institutional support to small and marginal farmers. This chapter mainly focused on agrarian change and distress at both national and state level. Through proper analysis in which includes planned expenditure on agricultural and allied activities from first plan to eleventh plan and focused on land use pattern, agrarian structure, credit and employment because these are the main reasons which we can explain easily why farmers are in distress. In the whole chapter analysis main focuses on the various factors behind farmer distress at all India level and finally discussed about the reasons behind all India farmer suicides from 1995 to 2013. In part two discussed about the agrarian distress in Telangana. Situation of small and marginal farmers

was miserable due to the heavy dependence on private money lenders with interest rates leaving the farmers in indebtedness. The unfavorable climatic conditions, less irrigation facilities, heavy costs for inputs, less output, shortage of electricity, etc were leaving the farmers in distress. The prices in the market were not all covering the costs of cultivation. The allocation of budget was not all compete to help the farmer distress. In Telangana region there was a problem of irrigation. All the factors together are leaving the farmers in distress and leading them to take extreme step such as suicide.

## **Chapter - 4**

### **Agrarian Distress and Farmers Suicides in Adilabad**

#### **4.1 Introduction**

The present chapter is the micro level analysis of the empirical data collected in Adilabad district of Telangana State. The core objective is to study the reasons behind the farmer suicides at micro level collected from the households of deceased farmer families of Adilabad district. The data was collected from 76 families of the deceased in the study area with a structured questionnaire.

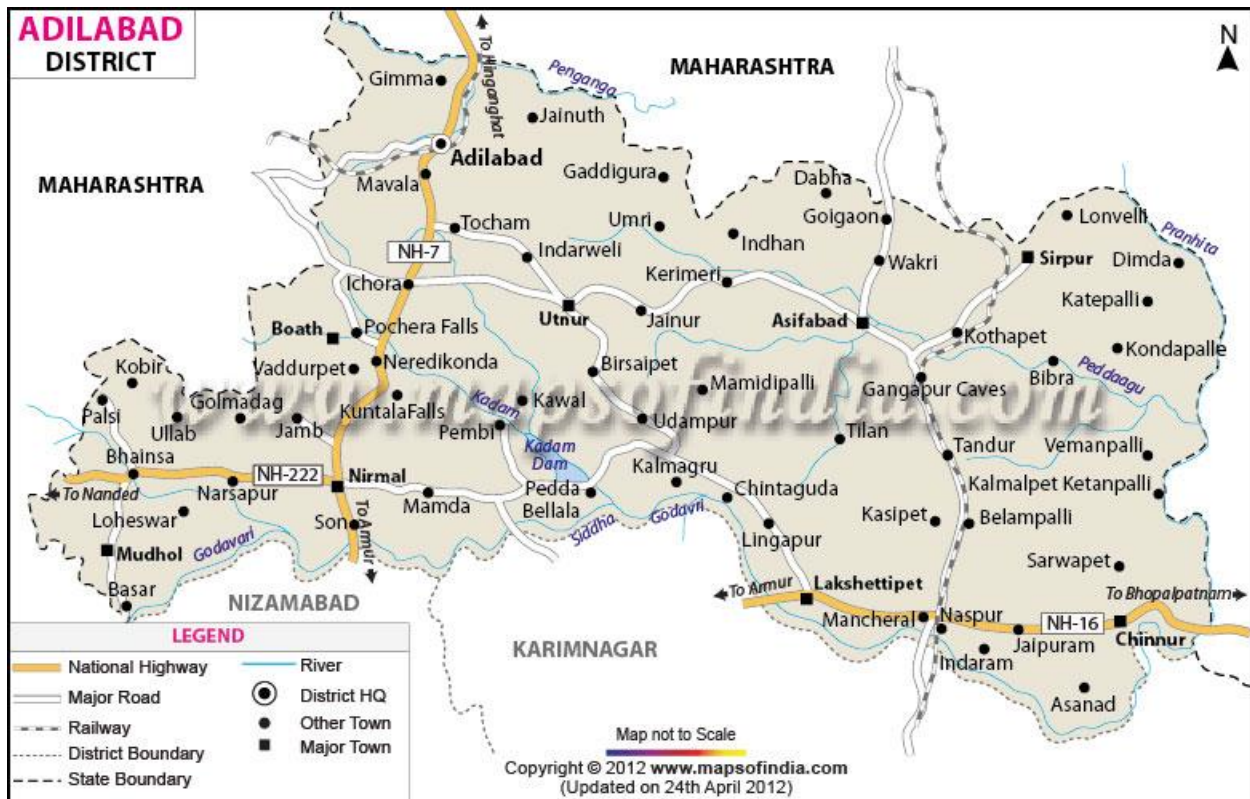
This chapter is divided into two sections. Section- 1 presents the profile of the state and secondary data collected from the district office. Section- 2 deals with the analysis of data collected from the selected sample respondents of Adilabad district. This chapter mainly discusses the reasons behind farmer's distress. Farmer distress can be defined as a farmer's inability to cope up with sudden changes in agriculture, and his/her socio-economic conditions which lead them to take extreme decisions like suicide.

#### **4.2 Profile of Adilabad District**

Adilabad is the northern district of Telangana state. The most important river that flows through the district is the Godavari, which flows from the southern side of the district. The district is bounded by Yeotmal and Chanda district of Maharashtra on the north, Chanda district on the east, Karimnagar and Nizamabad districts on the south and by Nanded district of Maharashtra State on the west. According to 2001 census, the total population is 24.88 lakhs. District comprises of 11 agricultural divisions consisting of 52 mandals. There are 7 Municipalities in the District. The District has five divisions - Adilabad, Nirmal, Utnoor, Asifabad, and Mancherial. The total geographical area is 16, 10,500 hectares and the total cropped area is 6, 34,263 hectares. Major crops in the district are Cotton, Jowar, Dry Paddy, Soya Bean, Maize, Red Gram, Black Gram, Turmeric, Chillies, and Paddy. Annual rainfall is 1, 157mm. The district receives around 984mm rainfall during southwest monsoon; 116mm during northeast monsoon, 26mm during winter and 31mm during the hot season. Soil pattern of the district is predominantly clay loams, clays, sandy loams, sandy clay loams and red soils. Black cotton soil is seen predominantly. The total black cotton soil is 80 percent whereas the other type of soils like the red soil is 15 percent and 5 percent

of sandy soils. Total fertility of the soil in the district is generally low to medium status. Out of the total cropped area, majorly 1, 34,542 hectares of the land receive irrigation through canals, tanks, bore wells and other sources like surface flow and lift schemes. The average rainfall criteria in the entire district is as follows: 01 mandal has excess rainfall (+20 percent and above), 11 mandals have normal rainfall (-19 to +19 percent), 39 mandals have deficit rainfall (-20 to -59 percent) and 01 mandal has scanty rainfall (-60 to -99 percent). Land holding situation of the district shows that that majority of the farmers are marginal farmers who have below 2.5 acres of land were having 1, 23,211 no. of holdings, as it has 2, 59,177 area in hectares. Small farmers who have land between 2.5 to 5.0 acres are having the number of holdings as 2, 05,874, where 1, 43,934 area in hectares. Semi-medium to large farmers, who are having above 5 acres of land were 3, 99,494 number of holdings whereas in area it was 1, 16,884 hectares (Department of Agriculture- Adilabad District, 2015).

Figure- 4.1: Geographical Map of Adilabad District



Source: Maps of India 2015

### 4.3 Major Crops Produced

Compound rates of area, production and yield in Adilabad district from 1971 to 2008 are explained in table- 5.1. Over the decades- area, production and yield of all crops are declining. The cropping pattern altered drastically between 1971 and 2008 due to various reasons like change in agricultural methods, unfavorable climatic conditions and commercialization of agriculture, all of which entitled changes in area, production and yields of the crops during the given time period. In Adilabad district, a total of 15,160 hectares were getting cultivated through canals; 21,658 hectares through tanks and registered ayacuts; 95,004 hectares through borewells and wells and 2,720 were cultivated through others sources like surface flow and lift schemes. Due to deficit rainfall, all irrigational sources were in dry conditions and the production levels declined year by year. Records show that in 2014, during south-west monsoon from June to September, there was a deficit in rainfall and in the month of September, there is a surplus rainfall which impacted on both vegetation and soil moisture. This clearly shows how rainfall affects the production levels of various crops like cotton, pulses, soya bean and coarse cereals etc. (Department of Agriculture- Adilabad district, 2014)

Table- 4.1: Compound Growth Rates of Area, Production and Yield in Adilabad District  
(In percent)

Crops	Particulars	1971-80	1981-90	1991-00	2001-08
Rice	Area	5	-2	2	0.2
	Production	11	1	12	2
	Yield	6	1	9	2
Maize	Area	1	0	3	2
	Production	2	-3	10	3
	Yield	2	-2	7	1
Cotton	Area	-5	2	3	6
	Production	-5	13	2	-17
	Yield	-10	11	2	-22
Bajra	Area	-5	26	33	-7
	Production	5	23	43	-3
	Yield	10	-3	7	4
Jowar	Area	-1	-2	-4	-11
	Production	-4	-1	4	-9
	Yield	-3	2	9	1
Red Gram	Area	2	3	-1	1
	Production	-3	-1	6	1

	Yield	-5	-4	7	0
Black Gram	Area	-1	-3	7	-3
	Production	-7	-6	15	2
	Yield	-5	-4	8	6
Chilies	Area	5	2	2	3
	Production	11	1	12	2
	Yield	6	1	9	2
Green Gram	Area	-1	-4	1	-8
	Production	0	-15	9	4
	Yield	0.4	-10.9	8.38	12.58

Source: Directorate of Economics and Statistics

Note: Area- in hectors, Production: in tones and Yield: in kg/ha

#### 4.4 Irrigational Situation

The data from 2004 to 2008 shows that there was a constant increase in the tanks and lift irrigation till 2007 whereas 2005-08 showed a constant increase in case of project canals. In the case of tube wells and dug wells, the situation is better as compared with the other sources of irrigation. The situation of irrigational sources increased from 2008. However, in my study, I found that whatever canals and dams were constructed, they were of no use to the farmers as the farmers were not getting benefited from them due to lack of water and deficit rainfall from last three years. This affected farmers from ground level. In this study, one of the farmers from Laxman chanda mandal reported that from the last five years they were not getting water from the nearby Kadam canal. This shows the drought situations in the district.

Table- 4.2: Number of Irrigation Sources in Adilabad District (in number)

Source	Surface Water			Ground Water		
	Tanks	Project Canals	Lift Irrigation	Tube Wells	Dug Wells	
Year	Tanks	Project Canals	Lift Irrigation	Tube Wells	With Pump Sets	Without Pump Sets
2004-05	1313	-	1	15819	24913	0
2005-06	1313	4	1	15638	21912	0
2006-07	1313	4	1	14117	21812	0
2007-08	1313	4	1410	14117	21819	0
2008-09	2470	7	514	17020	28870	0
2009-10	2470	8	31	18038	27604	369

2010-11	1497	16	4	12563	20664	251
2011-12	1497	9	4	12563	20664	251
2012-13	956	9	472	25123	10927	251
2013-14	956	16	472	25123	10927	251

Source: Directorate of Economics and Statistics, Hyderabad

#### **4.5 Land Holding Situation**

In the land holdings, from the table- 4.3, all sizes of groups in SC were showing slightly declining trend from 16.6 in 1995 to 15.4 in 2011. But, in the case of ST population, all sizes of groups showed a decreasing trend in 2000 and 2005 but finally 2011 showed a slightly increasing trend in the land holdings from 21.2 in 1995 to 21.4 in 2011. In the case of other social groups- marginal, small and semi-medium farmers there is an increasing trend in the number of land holdings. At the same time, medium and large farmers showed a decline in the number of land holdings.

In the operational holdings, from the table- 4.4, all sizes of groups in SC were showing a slightly declining trend from 13.0 in 1995 to 12.4 in 2011. But, in the case of ST population, all sizes of groups showed increasing trends in the operational holdings from 24.2 in 1995 to 25.7 in 2011. In the case of other social groups- marginal, small and semi-medium farmers there is an increasing trend in the number of operational land holdings. During the same time period, medium and large farmers showed decline in the number of operational holdings.

Table- 4.3: Number of Holdings in Adilabad District (in Ha.)

Particulars*	1995-96				2000-01				2005-06				2010-11			
	SC	ST	Others	Total	SC	ST	Others	Total	SC	ST	Others	Total	SC	ST	Others	Total
Marginal	20.2	15.2	64.5	100	19.11	14.5	66.3	100	19.5	15.3	65.0	100	18.5	15.8	65.5	100
Small	15.6	23.3	61.0	100	13.9	23.1	62.8	100	14.2	23.1	62.6	100	13.1	24.1	62.6	100
Semi-Medium	14.2	28.9	56.8	100	12.8	29.5	57.5	100	12.6	29.5	57.7	100	12.1	30.8	57.0	100
Medium	9.6	26.1	64.1	100	9.8	27.2	62.9	100	10.0	28.0	61.8	100	9.1	28.8	61.4	100
Large	8.1	16.7	75.1	100	8.8	18.8	71.9	100	8.9	18.0	72.6	100	7.7	20.4	71.2	100
All Sizes	16.6	21.2	62.0	100	15.8	20.5	63.5	100	16.1	20.9	62.8	100	15.4	21.4	63.1	100

Source: Directorate of Economics and Statistics, Hyderabad.

Particulars\*- Marginal: Below 1ha, Small: 1ha- 2ha, Semi-Medium: 2ha- 4ha, Medium: 4ha-10ha, Large: 10 and above ha.

Table- 4.4: Area Operated in Adilabad District (in Ha.)

Particulars*	1995-96				2000-01				2005-06				2010-11			
	SC	ST	Others	Total	SC	ST	Others	Total	SC	ST	Others	Total	SC	ST	Others	Total
Marginal	19.2	17.7	63.0	100	18.4	16.9	64.5	100	19.0	17.7	63.2	100	17.9	18.2	63.8	100
Small	15.3	23.3	61.2	100	13.7	23.1	62.8	100	13.9	23.1	62.8	100	12.9	24.1	62.8	100
Semi-Medium	13.9	28.6	57.4	100	12.4	29.2	58.2	100	12.2	29.3	58.3	100	11.7	30.7	57.5	100
Medium	9.6	26.1	65.6	100	9.6	26.1	64.1	100	10.0	26.8	63.0	100	9.1	27.6	63.2	100
Large	7.2	15.9	76.7	100	8.1	16.7	71.0	100	8.3	16.9	73.8	100	7.1	20.4	71.1	100
All Sizes	13.0	24.2	62.7	100	12.5	24.6	62.4	100	12.9	24.9	62.0	100	12.4	25.7	61.7	100

Source: Directorate of Economics and Statistics, Hyderabad.

Particulars\*- Marginal: Below 1ha, Small: 1ha- 2ha, Semi-Medium: 2ha- 4ha, Medium: 4ha-10ha, Large: 10 and above h

#### 4.6 Micro Level Analysis

During the south-west monsoon of June 2014, the number of rainy days were 8 whereas, in July the number of rainy days were 15 and the rainfall deviation was 52 percent. In August, the number of rainy days were 12 and the rainfall deviation was 28 percent. In September, the number of rainy days were 8 and the rainfall deviation was 76 percent. The total number of rainy days during the entire monsoon season was 43 and there was a rainfall deficit of 28 percent in 2014. Above figures clearly show the situation of rainfall which is the main source for irrigation. It clearly shows the agricultural situation of Adilabad district in 2014 and this study shows that situation is even worse in 2015 (Department of Agriculture- Adilabad district, 2014). Now we will look into the agricultural situation at village level from the selected sample respondents of the deceased farmer's households.

The respondent's and household's information is given with their mandal and village in table- 4.5.

Table-4.5: Sample Representation

Sl. No.	Name of the Mandal	Name of the Village	No. of Sample	Total Number of Samples
1.	Kadem	Perkapalli	1	1
2.	Narnoor	Narnoor Nagalkonda	1 1	2
3.	Boath	Marlapalli Boath Surala Nigini GurralaThanda Sakera Karatwada Pochera	1 1 1 1 1 1 2 1	9
4.	Sirpur- U	Sevadas Nagar Lingapur Naddamguda	1 2 1	4
5.	Bheemini	MamidiPalli	1	1
6.	Bela	Sirisanna	1	2

		Kobbaye	1	
7.	Dandepalli	Gudem Velganur	1 1	2
8.	Jainath	Kapri Laxmipur Sathnala Mediguda (R)	1 1 1 1	4
9.	Neridikonda	Kumari Road Lakampur	1 1	2
10.	Laxmanchanda	Vadyal Rachapur	1 1	2
11.	Gudhatnoor	Mannur Vaijapur	1 1	2
12.	Bhainsa	Valegam Kamol Chintalbori Kothalgoan Ajgal Eggam	1 2 1 1 1 1	7
13.	Kubeer	Kubeer Ranjani Chatha Malegam Sainagar Ampoli	1 1 1 1 1 1	6
14.	Laxchettipet	Itikyala	1	1
15.	Jannaram	Rampur	1	1
16.	Tanoor	Mogili	1	1
17.	Kuntala	Gollamada Andhakur Dounelli	1 1 1	3
18.	Indravelli	Rampur Bhudha Nagar	1 1	2
19.	Sarangipur	Jam	1	1
20.	Tiryani	Gambiraopeta	1	1
21.	Talamadugu	Kadadh Tallamadugu Nandigama	1 1 1	3
22.	Ichoda	DevalNayakthanda	1	1

23	Tamsi	Hasnapur Ponnari	1 1	2
24	Asifabad	Burguda	1	1
25	Sirpurkagaznagar	Jagamenthapur	1	1
26	Muddhole	Vitoli Karegam	1 1	2
27	Bela	Bela	1	1
28	Lokeshwaram	Rayapurthanda Lokeshwaram	1 2	3
39	Mancherial	Laxettipet Mamidipalli	1 1	2
30	Khanapur	Mandapalli Krishna NayakThanda	1 1	2
31	Chennur	Ellakkapeta	1	1
32	Utnoor	Utnoor	1	1
33	Nennela	Nennela	1	1
34	Adilabad	Landaswangi	1	1
Total	34	72	76	76

Source: Field Survey, 2015

#### 4.7 Personal Profile of the Deceased Farmers

Various indicators have been used for the analysis. Gender, education, family size, irrigational and land holding situations in the district, employment, income of the deceased farmers, cost of cultivation, credit of the farmers and the other factors were considered.

Household characteristics were considered as one of the important factors for the study. Table-4.6, shows that male deceased farmers were more than the female farmers. 3.9 percent female farmers committed suicide. Most of the deceased farmer's average family size is 3-4 persons; out of the total they constitute 63.2 percent. The number of farmer suicides were more in nuclear families as it was 93.4 percent. Most of deceased farmers were illiterate (80.3 percent). It shows that education is the important tool to develop the living standards in the society.

Table- 4.6: Household Characteristics of Deceased Farmers

Specification of Characteristics	Classification	Number of Households (in percentage)
Gender	Male	73(96.1)
	Female	3(3.9)
Family Size	2 Persons	8(10.5)
	4 Persons	48(63.2)
	6 Persons	20(26.3)
Family Type	Nuclear	71(93.4)
	Joint	5(6.6)
Level of Education	Illiterate	61(80.3)
	Primary	2(2.6)
	Secondary	10(13.2)
	Higher Secondary	3(3.9)
	Graduation and above	0(0)

Source: Field survey, 2015.

#### 4.8 Irrigated Land, Crops Produced and Cost of Cultivation of Deceased Farmers

The below table- 4.7, clearly shows that most of the land of the deceased farmers is irrigated land (97.4 percent) and very less land is unirrigated (2.6 percent), which shows that most of the farmers were doing farming in the irrigated land. Source of irrigation is among the main aspects of the study as it reveals information about the irrigation facilities in the district. There were different sources of irrigation in the agricultural area, but in the study, it was found that in this district groundwater availability was low and most of the deceased farmers were dependent on the rains (93.2 percent). Very few farmers were dependent on other irrigation sources like canal (3.4 percent), bore (2.4 percent) and dam (0.8 percent). It can be seen as that irrigation sources in the

district were very low. Total 6.8 percent of the deceased farmers were cultivating their land through various irrigational sources and 93.2 percent of the deceased farmers depended monsoon season. One of the farmers in Mancherial division invested 1, 50,000 rupees on digging bore wells from last three years. Due to lack of ground water, he failed to get water through the bore well. The amount he invested on the digging of bore well was borrowed from a local money lender at a high rate of interest. This was one of the main reasons behind this farmer distress.

Table- 4.7: Cultivated Land under Irrigation

Type of Land	Particulars	Number of Deceased Farmers	Acres (in percentage)
Type of Land	Irrigated	73	320.5 (97.4)
	Unirrigated	3	8.5 (2.6)
	Total	76	329 (100)
	Source Of Irrigation	Open Well	0
	Tube Well	0	0
	Canal	2	23 (3.4)
	Bore	1	16.5 (2.4)
	Dam	1	6 (0.8)
	Rain-Fed Area	74	623.5 (93.2)
	Total	76	669 (100)

Source: Field Survey, 2015

Farmers who cultivated crops like cotton and soya committed suicide. Table- 4.8, clearly shows the level of drought in the district. Above mentioned crops requires minimum water level and semi-irrigated land but, the farmers were not getting minimum water for their cultivation purposes. The cost of cultivation data shows that most of the small and marginal farmers were facing vulnerable situations in agricultural areas, they cannot cope up with sudden changes in the agriculture. This study found that most of deceased farmer's villages do not have minimum facilities. One of the farmers in Adilabad division consumed poison in front of his family and the

landlord, but due to lack of transportation facilities farmer died on the way to the hospital. This is the situation in some of the villages. The farmers had to work without minimum healthcare and transportation facilities. Without proper transportation facilities farmers found it difficult to transport their crop to town markets for selling. Villages lacked shops which sold agricultural inputs. To buy the inputs, they had to travel minimum 10 km from their village to continue their cultivation. These are the various reasons behind the increase in the cost of cultivation.

Table – 4.8: Social Group Wise Irrigated Land, Crops Produced and Cost of Cultivation

Caste	Number of Deceased Farmers	Irrigated Land in Acres (figures in brackets are in percentage to total)	Types of Crops Produced	Cost of Cultivation (Average)
SC	5	31.5 (9.94)	Cotton, Soya, Tomato	1,43,600
ST	16	73 (23.02)	Cotton, Soya, Red Gram, Jowar, Corn, Millets	2,30,763.2
OBC	44	150 (47.31)	Cotton, Paddy, Soya, Turmeric, Tomato, Chilli, Red Gram, Jowar, Vegetables	2,34,584.3
OC	11	62.5 (19.71)	Cotton, Paddy, Soya, Bengal Gram	2,88,058.2
Total	76	317 (100)	12	2,37,185.6

Source: Field Survey, 2015

#### 4.9 Land Holdings Situation of Deceased Farmers

Table-4.9 shows that Other Backward Class (OBC) holds the highest number of land holdings (45.3 percent) compared to other social background groups whereas the Scheduled Caste (SC) occupies the least number of land holdings (9.6 percent). It shows that OBCs were affected more because of the agricultural changes. In operational holdings OBCs hold a large number of operational holdings (53.4 percent) while SCs hold the less number of holdings (7.1 percent) as

compared to the Scheduled Tribes (ST), which is 23.4 percent and Other Classes (OC) is 16.1 percent. The situation shows that OBCs are holding more wealth as well as getting more effected by the agricultural changes. Some of the farmers in the various divisions like Asifabad, Nirmal, Utnoor and Adilabad are practicing farming in hill area lands. Most of the lands are not assigned by the government authorities but from generations they have been cultivating on that land. Due to the different structure of lands, they are getting only 30 percent of output out of the total output. Interestingly, most of the tribal farmers were only cultivating on such lands.

Table- 4.9: Total Number of Land Holdings

Land Holdings	Particulars	Number of Deceased Farmers	Acres (figures in bracts are in percentage to total)
	SC	5	31.5 (9.6)
	ST	16	86 (26.1)
	OBC	44	149 (45.3)
	OC	11	62.5 (19)
	Total	76	329 (100)
	Operational holdings	SC	5
ST		16	157 (23.4)
OBC		44	357 (53.4)
OC		11	107.5 (16.1)
Total		76	669 (100)

Source: Field survey, 2015

#### 4.10 Employment Status of the Deceased Farmers

Most of the deceased farmers in Adilabad district had land and they cultivated various crops in their own land, some farmers had leased part of their land. Most of the days they worked in their own fields. When they don't have work in their own field, they will work as agricultural

laborers in others land. Farmers worked as cultivators in their own fields or as agricultural labourer throughout the year. On an average a farmer is employed 312 days a year. Remaining days they go for MGNREGA works. In a year, most of the farmers cultivate only one crop because of lack irrigational facilities and most of the farmers were dependent on the rains. During summer season, for a span of two months, i.e., 60 days, they will go for MGNREGA work to meet their daily expenses.

Table- 4.10: Social Group-Wise Employment Status of Deceased Farmers

Category	Social Group	No of Deceased Farmers Employed	Average Number of Days Employed per Year
Agricultural Labor	SC	1	120
	ST	9	125
	OBC	12	131
	OC	5	192
Cultivators	SC	5	336
	ST	16	289
	OBC	44	324
	OC	10	300
MGNREGA	SC	1	60
	ST	15	60
	OBC	34	54
	OC	4	60

Source: Field Survey, 2015

#### 4.11 Cropping Pattern of Deceased Farmers

Table- 4.11: Crop Cultivation of Deceased Farmers

(Production in Quintals)

Crop	2010		2011		2012		2013		2014		2015	
	Acres	Production	Acres	Production	Acres	Production	Acres	Production	Acres	Production	Acres	Production
Cotton	477	2844	475	2534	479	1788	480	1302	469	871	5	3
Soya	123.5	679	123.5	574	122	441	123	308	123	233	-	-
Paddy	20.5	237	20.5	163	20.5	162	23.5	111	23.5	99	-	-
Red Gram	8	36	13	43	12.5	38.5	12.5	24	16.5	23	-	-
Jowar	16	59	16	44	16	41	19	35	17	13	-	-
Corn	-	-	3	12	3	6	3	3	-	-	-	-
Turmeric	0.5	1	0.5	2	0.5	0.5	1.5	3	1.5	1.5	-	-
Tomato	3	15	3	13	3	13	3	10	3	6	-	-
Chilly	8	40	8	36	12.5	33	11	23	9	11	-	-
Bengal Gram	2.5	15	2.5	15	2.5	15	2.5	10	2.5	8	-	-
Millets	1	1.5	-	-	-	-	-	-	-	-	-	-
Vegetables	-	-	-	-	-	-	-	-	8	10	-	-

Source: Field Survey, 2015

Most of the farmers in the district were depended on the monsoon rainfalls because of less irrigational sources. Because of that most number of farmers were cultivating only cotton crop as it requires less amount of water and only semi- fertile land. The above table shows data collected up to 2015 but very few farmer families were interviewed. Most of the farmer families were not ready to respond as they were in so much of pain at the time of field survey. Table- 4.11, clearly shows that production of cotton is high as compared to other crops and at the same time there was a decline in the production levels from 2010 to 2014. Second highest cultivated crop in the district is soya bean and the situation of this crop was also remaining same. Third highest crop is paddy, but due to unfavorable climatic conditions production of paddy declined and crops like red gram, jowar, corn, turmeric, tomato, chilly, Bengal gram, millets and vegetables were considered as small crops according to the area under cultivation. Nevertheless, the situation of all crops were miserable due to unfavorable climatic conditions and less irrigational sources. Most of the farmers in Adilabad district are depended on a single crop, i.e., cotton. From below data, we can observe that in the span of last five years there is a drastic decline in the production levels of all crops especially cotton crop. From last three years, there is a drastic change in the climatic temperatures and rains were very low. There was no water in the canals and dams. Due to all this, production levels declined.

#### **4.12 Cost of Cultivation of Deceased Farmers**

In this district, the majority of the farmers cultivate only cotton crop because of various reasons. Cotton crop requires low quantity of water and suits to the district weather conditions. Major crops in the district were cotton and soya. From table- 4.12, by observing cost of cultivation of different crops, it can be seen that most of the area is occupied by cotton crop as compared with the other crops. The cost of cultivation of cotton crop is more than the other crops, which clearly explains why majority of the farmers who were cultivating cotton crop are committing suicides in the district. Also, it clearly indicates that most of the farmers are spending a large amount on purchasing input materials rather than labor cost and marketing cost. The major share of the cost of production is occupied by input cost. As compared with the previous table, the total income of the families of the deceased is very less because they are spending a lot of amount on cost of production. Finally, they are getting negative results from the crop and this situation is the major reason behind the farmer distress. Cost of cultivation mainly includes inputs like pesticides,

fertilizers and seeds, which are used in the cultivation process. Due to financial problems, most of the farmers borrows inputs from dealers in the form of debt with interest rate. Some of the dealers are playing the role of dalaries. They only provide all types of inputs at high cost with interest. After the completion of cultivation process, dalari himself takes the output to sell in the market. Then, he will return the amount to the farmer after deducting all costs like input costs, marketing costs and interest. This is one of the reasons for the low income level of farmers. Most farmers and their family members do not have minimum knowledge about inputs they are using and also about the costs. They blindly believe the dalaries. This shows their innocence levels and also the importance of education among farmers. Nevertheless, the sad fact is that farmers know that the dalaries are exploiting them but they are helpless. These are the main reasons behind the increase in the cost of cultivation.

Table- 4.12: Crop Wise Average Cost of Cultivation (in rupees, annual)

Crop	Input Cost* (in percentage)	Labor Cost* (in percentage)	Marketing Cost*(in percentage)	Total Cost of Cultivation (in percentage)
Cotton	1,43,695.3 (73.6)	50,677.7 (25.9)	1063 (0.5)	1,95,436 (100)
Soya	34548.7 (65.2)	17277.6 (32.6)	1180.5 (2.2)	53006.8 (100)
Paddy	1,39,795 (68.1)	61,830 (30)	3906 (1.9)	2,05,531 (100)
Red gram	5847.8 (39.9)	6778.6(46.2)	2050 (13.9)	14676 (100)
Jowar	12885.7 (58.08)	8228.6 (37.09)	1071.4 (4.83)	22185.7 (100)
Corn	13,050 (47.9)	13,000 (47.9)	1,150 (4.2)	27,200 (100)
Turmeric	4475 (37.5)	6375 (53.57)	1050 (8.8)	11900 (100)
Tomato	4350 (48.6)	3125 (34.9)	1475 (16.5)	8950 (100)
Chilly	6575 (48.9)	6200 (46.3)	662 (4.8)	13437 (100)
Bengal gram	59,275 (71.8)	20,000 (24.3)	3,250 (3.9)	82,525 (100)

Source: Field survey, 2015

Input Cost\*- Seeds, Pesticides, Fertilizers.

Marketing Cost\*- Transportation, Marketing, Dalari Commission, Hamali and Storage.

Labor Cost\*- Male Labor, Female Labor, Machinery Cost

#### 4.13 Total Income of the Deceased Families

Income of the deceased farmer's families is in the range of 30,000- 1, 00,000 only. Out of 76 deceased farmer families, 56 families are below 1, 00,000 rupees income. Except one OBC farmer, all others have the public distribution system cards (PDS). Within this income group, most

of the farmers have taken more debt from non-institutional sources than from the institutional sources. Most of the farmers in this group were facing a lot of indebtedness problems due to low or negative returns from the agricultural sector. From table- 4.13, it can be observed that all deceased farmers (76 families) have taken loans from non-institutional sources.

Table- 4.13: Social Group-Wise Total Income of the Deceased Families

Total Income	Social Group	No. of Deceased Farmers	Having PDS Cards	Having Other Social Security Cards *	No Of Deceased Farmers having Credit	Type of credit	
						Institutional	Non-Institutional
30000-100000	SC	3	3	3	3	2	3
	ST	10	10	9	10	5	10
	OBC	29	28	28	29	17	29
	OC	4	4	4	4	4	4
100000-200000	SC	2	2	2	2	1	1
	ST	4	4	4	4	1	4
	OBC	14	14	14	14	6	14
	OC	5	4	4	5	3	5
200000-300000	SC	0	0	0	0	0	0
	ST	1	1	1	1	1	1
	OBC	1	1	1	1	1	1
	OC	2	2	2	2	2	2
300000-350000	SC	0	0	0	0	0	0
	ST	1	1	1	1	1	1
	OBC	0	0	0	0	0	0
	OC	0	0	0	0	0	0

Source: Field Survey, 2015

Other Cards\*- Health cards (Arogyasri Cards), Crop Insurance, Kisan Cards

#### 4.14 Credit of the Deceased Farmers

Credit is the main factor behind the farmers distress. Credit of the deceased farmers are divided into three different tables which are shown below. One is total average credit within the social group and income wise from 2012-15. Second is average credit from institutional and non-institutional sources of 2012-15. Third is average credit compared with income and expenditure from 2014-15.

Total Average Credit of the deceased farmers from 2012- 2015, according to the Social Group wise and Income wise were explained in the below table- 4.14. Here, most of the OBC farmers were affected with the high indebtedness. Most of the farmers are unable to clear their existing loans at the time of crop period. So, they are taking credit from non-institutional sources at high interest rate which trap them into debt. The highest number of farmers committing suicides belong to OBC community. Income group wise, most of the farmers whose income was between 2, 00,000 rupees -3, 00,000 rupees took more loans between 2012-15. This shows that poor and medium farmers are taking more loans from different sources and get trapped in indebtedness because of their low level of economic status and increase in the cost of cultivation.

Table- 4.14: Total Average Credit from 2012- 2015 according to Social Groups and Income Wise

Social group	Particulars	2012	2013	2014	2015
	SC	0	78000	66250	100000
	ST	118750	113250	143863.64	0
	OBC	127407.41	139750	100500	300000
	OC	122000	203333.33	118176.471	200000
	Total	368157.41	534333.33	428790.111	600000
Income wise	Below 100000	126800	458125	124313.433	212500
	100001-200000	111818.182	148333.33	94000	0
	200001-300000	166666.667	200000	106000	0
	Above 300000	100000	111000	300000	0
	Total	505284.849	917458.33	624313.433	212500

Source: Field Survey, 2015

Below table- 4.15, clearly explaining the distribution of average credit of all deceased farmers based on the social group and income wise. Most number of farmers took loan from non-institutional sources as compared with the institutional sources of credit. Very few took loans from institutional sources. Most of the farmers were depending on the non-institutional sources of credit which can be considered as the major reason behind the farmer suicides. Most of the farmers

belonging to ST and OBC took huge loans. In income group wise, farmers whose income is above 1, 00,000 rupees did not take any loans from institutional sources in 2012. But, farmers whose income is between 2, 00,000 rupees -3, 00,000 rupees depend more on the credit sources as compared with the other income group of farmers. From total analysis, it can be clearly seen that most of the poor farmers are getting affected and trapped in the problem of indebtedness.

Table- 4.15: Total Average Credit from Institutional and Non-Institutional Sources (2012- 2015)

Social Group	Particulars	2012		2013		2014		2015	
		Inst.*	Non*	Inst.*	Non*	Inst.*	Non*	Inst.*	Non*
	SC	0	0	90000	75000	0	66250	0	100000
	ST	0	118750	78400	129090.91	113571.43	158000	0	0
	OBC	80000	129230.77	61666.67	14608.11	46500	128589.75	20000	393333.33
	OC	0	122000	160000	225000	80000	134083.33	200000	0
	Total	80000	369980.77	390066.67	443699.02	240071.43	486923.08	220000	493333.33
Income Wise	Below 100000	80000	128750	66428.57	144027.78	69250	135191.49	110000	246666.67
	100001-200000	0	111818.18	155000	147000	56363.64	111250	0	0
	200001-300000	0	166666.67	200000	200000	65000	133333.33	0	0
	Above 300000	0	100000	22000	200000	0	300000	0	0
	Total	80000	507234.85	443428.57	691027.78	190613.64	679774.82	110000	246666.67

Source: Field Survey, 2015

Inst.\*- Institutional Average Amount,

Non\*- Non-Institutional Average Amount

Income, expenditure and credit patterns of the deceased farmers are explained in table-4.16 according to social group wise from 2014-15. Average income and expenditure of all social groups are in same proportion. Their income levels are equal to their daily annual expenditure levels. But they are taking more credit because of changing methods in agriculture and due to the commercialization of agriculture. For cultivation of crop, farmers are taking more credit from institutional as well as non-institutional sources of credit. Whatever income they are getting from the cultivation process is not sufficient to maintain their daily expenditures, both, for family and cultivation purpose. So, to meet their regular expenses, they are taking credit from other sources which lead to raise in the credit of the farmers over the years. It is not a sudden phenomenon, they were facing this problem from many years and with each year, the credit value doubles making it difficult for the farmer to pay credit and look after their family. All these lead to farmers distress.

Table- 4.16: Total Average Credit from 2014- 2015, Comparison with Income and Expenditure

Social Group	2014			2015		
	Avg. Income*	Avg. Expenditure*	Avg. Credit*	Avg. Income*	Avg. Expenditure*	Avg. Credit*
SC	101750	62250	74615.38	100000	60000	223333.33
ST	111041.67	103300	128200	65500	52650	128333.33
OBC	78714.28	68988.57	120794.39	89277.78	93666.67	140185.18
OC	114000	68222.22	220473.68	95500	114000	178333.33
Total	405505.95	302760.79	544083.45	350277.78	320316.67	670185.17

Source: Field Survey, 2015

Avg. Income\*- Total Average Income, Avg. Credit\*- Total Average Credit,

Avg. Expenditure\*- Total Average Expenditure.

#### 4.15 Reasons behind Farmer's Distress

There are various reasons behind farmer's distress, the majority of the farmers in Adilabad district committed suicide because of crop failure (76 farmers), farmers are not getting reasonable prices for their crop and majority of the farmers were dissatisfied with the current market prices. In the case of climatic conditions, there was very low rainfall from last 3 years. Most of the farmers faced decline in their economic status before the incident. Some of the farmers were in debt by borrowing from private money lenders for social ceremonies like marriages etc. (24 farmers). Money lender harassment is also one of the reasons behind farmers' distress. 9 farmers committed

suicide because of money lender harassment for immediate repayment of loan. There are also other reasons which are clearly mentioned in table- 4.17. Land disputes/ caste disputes with neighbors or villagers, addictions like alcohol addictions etc. are other reasons behind farmers distress.

Table- 4.17: Social Group-Wise Response pertaining to Reasons of Farmers Distress (in Number)

Reasons for Distress	SC	ST	OBC	OC	Total (in percentage)
Is there any crop failure before the incident?	6.6	21.1	57.9	14.4	76(100)
Did deceased received minimum support price for his/her crop?	-	-	-	-	-
Was deceased satisfied with the current market prices?	-	-	1	-	1 (1)
Did climatic conditions support the growth of crop?	-	-	-	-	-
Was there a change in his social position before the incident?	-	3	6	-	9 (11.8)
Did his economic status deteriorate before the incident?	4	14	35	11	64 (84.2)
Did the deceased have a daughter/sister of marriageable age?	4	5	12	3	24 (31.6)
Was the deceased harassed for repayment of loan before the incident?	1	2	5	1	9 (11.8)
If yes, did the lender or its agents insist on immediate repayment?	1	2	5	1	9 (11.8)
If yes, did the lender or its agents use abusive language?	1	2	5	1	9 (11.8)
Did the deceased discuss general hardship/problems he was facing with family?	-	6	10	3	19 (25)
Was the deceased having amicable relations with family?	5	14	31	8	58 (76.3)
Did the deceased discuss general hardship/problems he was facing with other family members?	-	-	2	1	3 (3.9)
Was the deceased having amicable relations with other family members?	-	2	4	2	8 (10.5)
Did the deceased have disputes with neighbors or others in the village?	-	-	2	-	2 (2.6)
Is there any caste/ land dispute between the deceased and other?	-	1	-	-	1 (1.3)
Did the deceased have a fight with someone before the incident?	1	1	-	-	2 (2.6)
Was there any suicide occurrence in the same or nearby village in the recent past before the incident?	-	-	1	-	1 (1.3)
Did any death occur in the family recently before the incident?	-	-	4	1	5 (6.6)
If yes, did the deceased talk about it with somebody (close relatives/friends)?	-	-	-	-	-
Has there been any suicide previously in the family?	-	-	1	1	2 (2.6)
Did the deceased have any serious illness/chronic diseases?	-	-	-	-	-
Did the deceased receive any major medical assistance before the	-	-	-	-	-

incident?					
Was there a change in the deceased's behavior before the incident?	-	1	3	1	5(6.6)
Did the deceased have any addictions?	1	4	11	2	18 (23.7)
Did deceased receive any land from the government?	-	-	-	-	-

Source: Field Survey, 2015

#### 4.16 Conclusion

Adilabad district is a drought prone area having very few irrigational sources. Most of the deceased farmers were cultivating cotton and soya crops according to the irrigational sources with the usage of fertilizers and pesticides. The cost of cultivation was much higher than the output they were getting through the crops. Dalari exploitation was high in the rural areas of the district. Most of the farmers were uneducated and believed on the prices of the dalaries. The farmers were taking the output which was given by the dalaries as they are the main source for selling their crops in the market. Most of the farmers took loans from both institutional and non-institutional sources and faced indebtedness problem heavily as interest rates were high for the loans taken from non-institutional sources. Crop failure from past years affected the deceased farmers most. Low-income groups and small family group were mostly affected.

## **Chapter- 5**

### **Major Findings and Policy Issues**

In recent years, the agricultural sector is facing a larger agrarian crisis due to various factors. Farmer suicides are observed in the areas where agriculture is highly commercialized. Most of the farmer suicides are happening because of crop failure, unemployment, indebtedness and their high expectations of their future crops. Feudalism and rampaging capitalism, gender-based discrimination, casteism, money lender exploitation, lack of awareness regarding input use, lack of education, high dependence on monsoon, lack of mobilization, changing village structure, increasing nuclear families and decline in joint families leading to low risk bearing capacity, all these factors are leading to farmers distress. According to National Crime Records Bureau, in the state of Telangana, in a span of one and half year, over 898 farmers have committed suicides and is still continuing. This state is the second highest in the number of suicides all over the country after Maharashtra, which reported 2,568 farmer suicide deaths. This shows the intensity of the problem of farmer suicides in the state. Within this concern, the whole study looked into various factors like socio-economic aspects and others to understand the factors which would help to formulate the policies in favor of farmers welfare and to control the farmers continuity of suicidal deaths.

Farmer suicides are not new to Telangana. Even before the bifurcation of the state's most of the suicides happened in Telangana only. Previous studies have shown that most of the suicides occur among cotton crop farmers. Nevertheless, the fact is that irrigational sources in the state are very less comparing to the sufficiency of cultivation of crops. Also, the exploitation of local bodies of the village is high. Most of the farmers depended on monsoon rainfalls. Due to the prevailing climatic conditions mainly the farmers are concentrating on the commercial crop like cotton. All these factors are being accumulated over the period. Throughout this study, the focus was made on various problems which were faced by the farming community mainly in the district of Adilabad in Telangana state. In the process of research, the required and sufficient information was gathered from the various sources to systematically analyze the situation.

## **5.1 Objectives of the Study**

- To study the changes in agrarian structure in Telangana state.
- To locate the crucial factors in agrarian change leading to acute indebtedness and farmer's distress in Adilabad district.
- To study the impact of agrarian distress and farmer suicides at the household level.

## **5.2 Analytical Framework**

Adilabad district was selected for this study based on the highest number of farmer's suicides occurred in the state. Sample data was collected for the entire district. The sample was collected from district office and newspapers. The data from field survey has been tabulated according to various factors behind the farmers distress such as irrigation facilities, land holding situation, crop cultivation, cost of cultivation and comparison of levels of indebtedness and their income levels and expenditure patterns and finally various reasons behind farmers distress.

## **5.3 Major Findings of the Study**

- Adilabad district receives very low rainfall and even they are not getting irrigation through dam which located in Kadam mandal. Even the area near the dam faced scarcity of water during the crop season. Dam water was not released for most of the areas, from the last five years. Eventually, they were totally depending on the monsoon. Crop failure, due to all these factors, was a common problem for each and every deceased farmer. Due to lack of irrigational facilities, farmers are getting low returns from the agriculture although most of the farmers are cultivating only one single crop.
- According to climatic conditions, most of the farmers are cultivating only the cotton crop as it requires only limited water and does not require high fertile land. But even for this type of crops, they are not getting sufficient irrigation.
- Most of the farmer households are not getting sufficient power supply also. But, they do not mention it very seriously because power also does not help them to cultivate the

- crop as the ground water level is very low. So even by using electrical motors, they are not getting the water. One of the farmers continuously failed in digging borewell.
- In some cases, there was huge exploitation by the landlord. The unjust behavior of landlords using abusive language towards tenants and life-threatening warnings were identified. Due to this, one farmer committed suicide by consuming pesticide in the presence of landlord and his own family in the field itself. Due to lack of medical facilities and transportation, farmer died in the ambulance when he was on the way to the hospital.
  - Other the major reason behind the farmer suicides is their high expectations on future crop. Farmers take more loans from the local money lenders at a high rate of interest. But in reality, due to unfavorable climatic conditions, they get low negative returns from their crop. The cost of cultivation exceeds their actual income. Due to this, they are unable to repay the loans taken from local money lender which leads to financial distress that converts into a very serious psychological problem tempting the farmers towards suicide.
  - Most of the deceased farmers do not have an education. 80.3 percent of the farmers are illiterate, 2.3 percent have completed primary level of education and 13.6 percent farmers completed secondary level of education. Above figures clearly show the educational standards of the farmers which can be considered as the main reason behind the suicides.
  - In case pesticides and fertilizers, most of the farmers do not know how many times and at what quantity they have to use them for a single crop. The double use of pesticides and fertilizers leads to crop failure in some of the cases.
  - Seeds are the other main reason behind farmer suicides. Most of the retailers are taking advantage of farmer's innocence and their low level of education, by selling low quality of seeds. During the time of harvesting, most of the farmers are not getting actual output. In some cases, plants were growing very healthily but not the cotton. Due to duplicate seeds, they are getting huge loss.
  - Dalari exploitation/ middle man exploitation was there. Many farmers are affected because of Dalari exploitation. In most of the cases, Dalari provides the seeds, pesticides and fertilizers to the crop. He will only sell the crop in the market and the

farmer does not know the sold price of the crop. Dalari returns the remaining amount to actual cultivator/ farmer, after deducting all the amount what he initially provided for the crop. Within that amount, the farmer was not able to lead the family and gets trapped again and again in the indebtedness which leads to farmer distress. This shows the level of dalari exploitation.

- During the field survey, it was observed that most of the villages do not have proper medical facilities and even the transportation facilities. Farmers are paying high prices for transportation of crop from field to the market area. Due to lack of medical facilities, most of the farmers are dying without getting treatment at emergency times.
- Retailers also exploit the farmers by selling low-quality pesticides and fertilizers. In most of the cases, farmers got cheated by the shop vendors as they gave other quality of packets to the farmers. The fertilizer packet names vary only by one letter misleading the farmer. Same is the case with seeds. All these lead to crop failure.
- Lack of government participation in solving the problems of farmers and lack of institutional support.
- Loan waiver policy of the government affected most of the farmers. Because to get a fresh loan from the bank, the farmer has to clear the existing loan first. But the government of Telangana assured installment wise loan waiver policy. According to that policy, each farmer has to wait for four years for the completion of loan waiver. So, farmers are not getting any other loan from institutional sources and they queued for non-institutional sources for money from local moneylenders at a high rate of interest. This situation shows indirectly that government policies are one of the main factors behind farmers distress and their suicides.
- Climatic conditions are also one of the main factors behind farmer suicides. Because from last three years, there were no rains in Telangana. At the same time, there were very low irrigational facilities. Continuously from last three years, farmers are getting low-negative returns from the agriculture. During 2015, there were no rains in Kharif season also. But by the middle of Kharif season, i.e., when the crop gets ready for harvest, heavy rains occurred. Due to the heavy rains, there was a lot of crop loss in the state and most of the farmers were affected severely. This is also one of the main reason behind the suicidal deaths in 2015.

## 5.4 Policy Recommendations

- The government needs to take an initiative in providing agricultural education to the farmers which may reduce the innocence levels in the farmers which can lead to effective functioning in the crop cultivation.
- The government needs to revise the loan waiver policy. Because of installment loan waiver policy, most of the farmers were affected. Farmers are facing a lot of problems in getting fresh loans from institutional sources.
- Need an effective functioning of institutional support which will motivate the farmers and also can reduce the suicidal deaths.
- The government should take an initiative to advertise government policies in rural areas for spreading the awareness through organizing motivational programs and awareness camps at the village level.
- The government should control the retailer exploitation by conducting sudden and regular inspection on retail shops by government authorities.
- To control the suicides, the government should frame the policies in favor of farmers welfare.
- The government should take the initiative in distributing seeds, pesticides and fertilizers.
- The government should give more attention on research and development of agricultural methods to make an alternative to convert this low-negative returns of agricultural methods to positive returns.
- The government also should take an initiative in constructing various irrigational sources like dams, canals, water bodies for sufficient supply of water for cultivation of crop. It should also take effective steps towards reducing ground water exploitation.
- The government should concentrate on the construction of roads and hospitals in the villages to increase health standards and also to the minimize suicide deaths by giving quick treatment to suicide survivors.
- Ensure regular inspection of government authorities on the local bodies of the village like village officer to ensure the effective functioning of the agricultural sector.

## References

- Arora, V.P.S. (2013). 'Agricultural Policies in India: Retrospect and Prospect'. *Agricultural Economics Research Review*, Vol. 26, No.2, July- December, pp. 135-157.
- Athreya, Venkatesh. (2013). 'The Current Agrarian Crisis in India: An Overview'. *The Marxist*, XXIX. 3, pp. 3-18.
- Behera, Bhagirath., and Mishra, Pulak. (2007). 'Acceleration of Agricultural Growth in India: Suggestive Policy Framework'. *Economic and Political Weekly*, Vol. 42, No. 42, October, pp. 4268-4271.
- Biru, Birendra, Kr. and Barpujari, Indrani. (n.d.). 'Jan Sunwai on the Present Agrarian Crisis- A Report'. *Gene campaign*, pp. 1-42.
- Chand, Ramesh. (1999). 'Emerging Crisis in Punjab Agriculture: Severity and Options for Future'. *Economic and Political Weekly*, Vol. 34, No. 13, March, pp. 2- 10.
- Dayal, Edison. (1984). 'Agricultural Productivity in India: A Spatial Analysis'. *Annals of the Association of American Geographers*, Vol. 74, No. 1, March, pp. 98- 123.
- Deshpande, R. S., and Prabhu, Nagesh. (2005). 'Farmer's Distress: Proof beyond Question'. *Economic and Political Weekly*, Vol. 40, No. 44/45, October, pp. 4663-4665.
- Deshpande, R.S. (2003). 'Current land policy issues in India'. *Institute for Social and Economic Change*, pp. 155-174.
- Deshpande, R.S. (2007). 'Emerging Issues in Land Policy'. *India Resident Mission Policy Brief Series*, No. 16, March, pp. 1-15.
- Deshpande, R.S., and Shah, Khalil. (2010). 'Globalization, Agrarian Crisis and Farmer's Suicides: Illusion and Reality'. New Delhi: SAGE publications India Pvt Ltd, pp. 118-148.
- Dev, Mahendra S. (2007). 'Agriculture: Absence of a Big Push'. *Economic and Political Weekly*, Vol. 43, No. 15, April, pp. 33-36.

- Gill, Sucha S. (2005). 'Economics Distress and Farmer Suicides in Rural Punjab'. *Economic Distress and Suicides*, pp. 219- 237.
- Gulati, Ashok. and Bathla, Seema. (2001). 'Capital Formation in Indian Agriculture: Re-Visiting the Debate'. *Economic and Political Weekly*, Vol. 36, No. 20, May, pp. 1697-1708.
- Kanthi, Jagan. (2014). 'Agrarian Crisis and Farmers Suicide in India: A study of Warangal district in Telangana'. *International journal of economic and business review*, Vol. 2, pp 145-150.
- Mitra, Siddhartha. and Shroff, Sangeeta. (2007). 'Farmer's Suicides in Maharashtra'. *Economic and Political Weekly*, Vol. 42, No. 49, December, pp 73-77.
- Mohan, C P. (2007). 'Cropping Patterns and Diversification in India'. Reserve Bank of India, *College of Agricultural Banking*, pp. 1-11.
- Mohanakumar, S., and Sharma, R K. (2006). 'Analysis of Farmer Suicides in Kerala'. *Economic and Political Weekly*, Vol. 41, No. 16, April, pp. 1553- 1558.
- Mohanty, B.B. (2013). 'Farmer Suicides in India Durkheim's Types'. *Economic and Political Weekly*, Vol. 48, No. 21, pp. 45-54.
- Mohanty, Soumya. (2007). 'Population Growth and Changes in Land Use in India', *ENVIS Center*, Vol. 4, No. 2-3, July, pp. 1-4.
- Mukherjee, S.K. (1992). 'Progress of Indian agriculture: 1900-1980'. *Indian Journal of History Science*, Vol. 27, No. 4, pp. 445-452.
- Nacharaiah, G., and Jagadheesh, G. (2013). 'Agrarian Distress and Farmers Suicides in Andhra Pradesh'. *Indian economic journal*, Special issue, pp. 1-12.
- Narasaiah and Suresh. (1999), 'Agricultural Production'. Pp. 1-33.
- Nayyar, Deepak, and Sen, Abhijit. (1994). 'International Trade and the Agricultural Sector in India'. *Economic and Political Weekly*, Vol. 29, No. 20, May, pp. 1187-1203.
- Ninan, K. N. (1988). 'Small Farmers and Commodity Market: An Analysis of Market Participation and Price Discrimination' *Economic and Political Weekly*, Vol. 23, No. 52/53, December, pp. 24-31.

- Parthasarathy, G., and Shameem. (1998). 'Suicides of Cotton Farmers in Andhra Pradesh: An Explanatory Study'. *Economic and Political Weekly*, Vol. 33, No.13, March, pp. 720-726.
- Pray, Carl E. (1984). 'The Impact of Agricultural Research in British India'. *The Journal of Economic History*, Vol. 44, No. 2, June, pp. 429-440.
- Premakumara and Seema. (2013). 'Land Use Pattern in India and Karnataka: A Comparative Analysis'. *International Journal of Scientific Research*, Vol. 2, October, pp. 1-3.
- Rabbi. (1986). 'Fertiliser Subsidy in India'. *Economic and Political Weekly*, Vol. 21, No. 41, October, pp. 1786-1788.
- Rao, Narasimha P., and Suri, K.C. (2006). 'Dimensions of Agrarian Distress in Andhra Pradesh'. *Economic and Political Weekly*, Vol. 41, No. 16, April, pp. 1546-1552.
- Rao, V M., and Gopalappa, D V. (2004). 'Agricultural Growth and Farmer Distress Tentative Perspectives from Karnataka'. *Economic and Political Weekly*, Vol. 39, No.52, December, pp 559-8.
- Reddy, Ratna V., and Galab, S. (2006). 'Agrarian Crisis Looking beyond the Debt Trap'. *Economic and Political Weekly*, Vol. 41, No. 19, May, pp. 1838- 1841.
- Reddy, Narasimha D., and Mishra, Srijit. (2010). 'Economic Reforms, Small Farmer Economy and Agrarian Crisis'. New Delhi: SAGE publications India Pvt Ltd, pp. 43-69.
- Revathi, E. (1998). 'Farmer's Suicide: Missing Issues'. *Economic and Political Weekly*, Vol. 33, No. 17, pp. 1207.
- Sahay, G. R. (2010). 'Globalization, Liberalization and Agrarian Distress: A Study of Suicides among Farmers in India'. *Paper for 6th Global Labour University Conference*, Berlin, pp. 1-41.
- Salunkhe, A. Harshal, and Deshmush, B.B. (2013). 'An Overview of Government Agriculture Subsidies in India'. *Pratibha: International Journal of Science, Spirituality, Business and Technology*, Vol. 1, No.2, February, pp. 62-66.

- Saptapathy, C., and Mishra, B. (2012). 'Farmer's Suicide: A Ground Level Study'. *International Journal of Extension Education*, Vol. 37, pp 89-95.
- Sarma, E. A. S. (2004). 'Is Rural Economy Breaking Down? Farmer's Suicides in Andhra Pradesh'. *Economic and Political Weekly*, Vol. 39, No. 28, July, pp. 3087-3089.
- Sawant, S. D., Daptardar, Vaidehi and Mhatre, Sandhya. (2002). 'Capital Formation and Growth in Agriculture: Neglected Aspects and Dimensions'. *Economic and Political Weekly*, Vol. 37, No. 11, March, pp. 1068-1072.
- Sebby, Kathryn. (2010). 'The Green Revolution of the 1960's and Its Impact on Small Farmers in India'. *Environmental Studies Undergraduate Student Theses*, Paper-10, January, pp. 1-27.
- Sen, Amartya. (1997). 'Starvation and Exchange Entitlements: A General Approach and Its Application to the Great Bengal Famine'. *Cambridge Journal of Economics*, Vol. 1, No. 1, March, pp. 33-59.
- Singhal, A.K. (2010). 'Poor Indian Farmer's Plight and Liberalization: An Overview'. New Delhi: SAGE publications India Pvt Ltd, pp. 86-93.
- Sinha, DK. (2015). '8 Measures to Raise Crop Intensity in India'. pp. 1-2.
- Sridhar, V. (2006). 'Why do Farmers Commit Suicide: A case study of Andhra Pradesh'. *Economic and Political Weekly*, Vol. 41, No. 16, April, pp. 1559-1565.
- Suri, K. C. (2006). 'Political Economy of Agrarian Distress'. *Economic and Political Weekly*, Vol. 41, No. 16, April, pp. 1523-1529.
- Vaidyanathan, A. (2006). 'Farmer's Suicides and the Agrarian Crisis'. *Economic and Political Weekly*, Vol. 41, No.38, September, pp. 4009-4013.
- Vasavi, A R. (1999). 'Agrarian Distress in Bidar Market, State and Suicides'. *Economic and Political Weekly*, Vol. 34, No. 32, August, pp. 2263- 2268.
- Vyas, V.S. (1994). 'Agricultural policy for the Nineties; Issues and Approaches'. *Economic and Political Weekly*, Vol. 29, No. 26, June, pp. A54-A63.

\_\_\_\_\_. (1999). 'Agricultural Trade Policy and Export Strategy'. *Economic and Political Weekly*, Vol. 34, No. 13, March, pp. A27-A33.

\_\_\_\_\_. (2004). 'Agrarian Distress: Strategies to Protect Vulnerable Sections'. *Economic and Political Weekly*, Vol. 39, No. 52, December, pp. 5576-5582.

### **Websites referred**

<http://www.mapsofindia.com/maps/telangana/districts/adilabad.htm> (accessed on 04<sup>th</sup> January, 2016).

<http://www.des-telangana.in/> (accessed on 08<sup>th</sup> December, 2015).

<http://www.agcences.nic.in/> (accessed on 05<sup>th</sup> November, 2015).

<http://www.rbi.org.in/Scripts/Statistics.aspx> (accessed on 25<sup>th</sup> August, 2015).

<http://ncrb.gov.in/> (accessed on 12<sup>th</sup> October, 2015).

<http://www.indiastat.com/default.aspx> (accessed on 23<sup>rd</sup> September, 2015).

<http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html> (accessed on 27<sup>th</sup> November, 2015).