Land Inequality and Agrarian Situation: A Case Study of Gudiwada Village of Nalgonda District

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By

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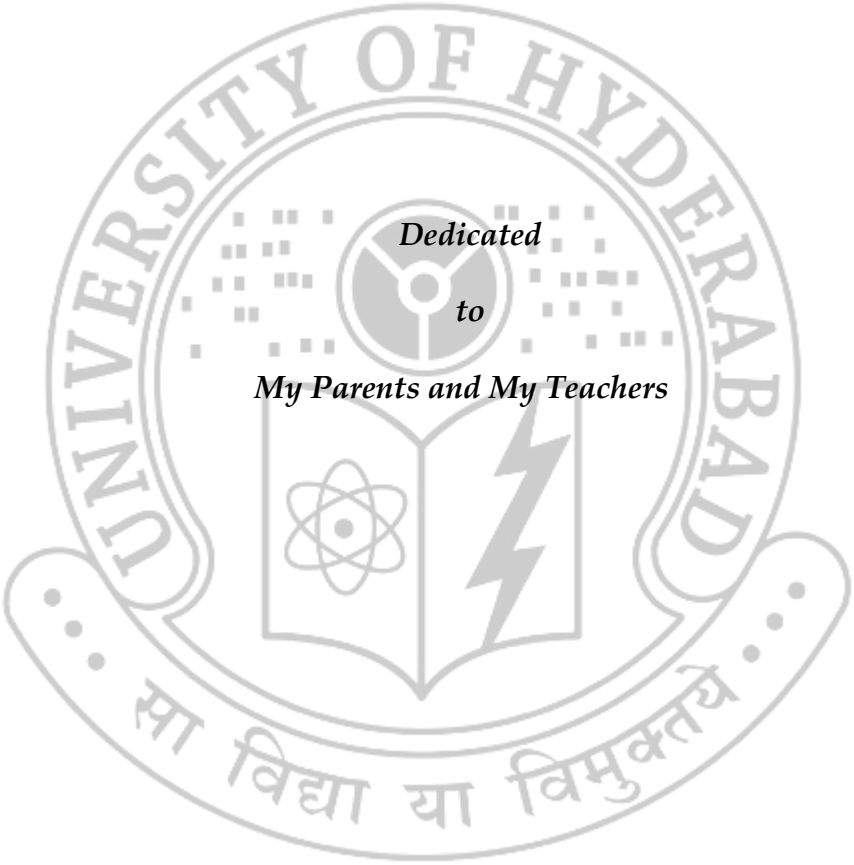

Dedicated

to

My Parents and My Teachers

School of Economics

University of Hyderabad

DECLARATION

I hereby declare that the research embodied in the present dissertation entitled, "**Land Inequality and Agrarian Situation: A Case Study of Gudiwada Village of Nalgonda District",** is an original research work carried out by me under the supervision of Dr. G. Sridevi, School of Economics, for the award of Doctor of Philosophy from University of Hyderabad. I declare to the best of my knowledge that no part of this dissertation is earlier submitted for the award of any research degree or diploma in full or partial fulfillment in any other university.

Place: Hyderabad **(**Karnati Kiran Kumar)

Date: Regd. No: 15SEPH28

CERTIFICATE

This is to certify that the thesis entitled "**Land Inequality and Agrarian Situation: A Case Study of Gudiwada Village of Nalgonda District",** submitted by Mr. Karnati Kiran Kumar bearing registration number 15SEPH28 in partial fulfillment of the requirements for award of Doctor of Philosophy in the School of Economics is bonafide work carried out by him/her under my supervision and guidance. This thesis is free from plagiarism and has not been submitted previously in part or in full to this or any other university for award of any degree or diploma.

Parts of thesis have been:

A. Published in the following publications:

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Further, the student has passed the following courses towards fulfillment of coursework requirement for Ph.D / was exempted from doing coursework (recommended by Doctoral Committee) on the basis of the following courses passed during his M.Phil program and The M.Phil degree was awarded:

Course Code	Name	Credits	Pass/Fail
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Karnati Kiran Kumar

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Abbreviations:

GDP	*Gross Domestic Product*
HYV	*High yield varieties*
IAAP	*Intensive Agriculture Area Programme*
SC	*Scheduled Caste*
ST	*Scheduled Tribe*
OBC	*Other Backward Caste*
CAGR	*Compound Annual Growth Rate*
FRA	*Forest Right Act*
CFR	*Community Forest Resource*
ROR	*Record of Rights.*
RBI	*Reserve Bank of India*
NSSO	*National Sample Survey Organization*
MGNREGA	*Mahatma Gandhi National Rural Employment Guarantee Scheme*
RRB	*Regional Rural Banks*
NABARD	*National Bank for Agriculture and Rural Development*
NCRB	*National Crime Record Bureau*
LPLDS	*Land Purchase and Land Distribution Scheme*

Chapter I

Introduction

1.1. Introduction

Agriculture is a prime source of livelihood for 70 percent of people who live in rural India. Indian agriculture is primarily based on the inequalities in the distribution of the land holdings among the people and farming communities. For many it offers sense of identity and rootedness within the village (Agarwal, 1994).Though a large number of people from Scheduled Castes and Scheduled Tribes community in the country procure their source of revenue by working on land, they are the most underprivileged people when we talk about ownership of land. The prevalence of landlessness is more prominent among these groups than among the general population, and more cultivators amongst them own uneconomic and small holdings than among the general population (Murdia, 1975).

In order to develop agriculture in rural areas and reduce land inequalities across the country, Indian government has taken major policy initiations such as land reforms, green revolution polices, etc. There are number of factors accounted for the failure of the land reforms in India such as illegal transfer of land, loopholes in ceiling laws, political pressure, non-availability of land records, etc. Dantwala (1976) discerns; "By and large land reforms in India enacted so far and those contemplated in the near future, are in the right direction; and yet due to lack of implementation the actual results are far from satisfactory". According to the Economic Survey 2015-16 and 2017-18, the contribution of agriculture and allied sectors to GDP, (at constant 2011-12 prices) has been diminishing. The growth rates in agriculture sector have been changing from 1.5 percent in 2012-13 to 5.6 percent in 2013-14, and (-) 0.2 percent in 2014-15, 0.7 percent in 2015-16 and 4.9 percent in 2016-17. Recent time Indian agriculture is facing severe problems such as droughts and farmers suicides etc. Even though agricultural net income per acre has declined, a disproportionate number of people still depend on agriculture.

1.2. Disparities in landholdings.

Deprivation is a difficult and challenged concept. The term is variously used to refer to poverty, inequality or relative disadvantage through the absence of certain services or benefits (NCRM website). In this regard, land is one of the important factor for rural people who depend on land related activities. In India distribution of land among the social groups is much skewed, and most of the marginalized groups are deprived of land due to the disparities in land holdings. Having no land leads to deprivation of employment, education, proper income, health, nd this also leads to the lack of proper houses. Deprivation from minimum resources leads to chronic poverty among the people. This is the situation prevailed in India over the periods.

Table1.1 Distribution of Households among Different Size Categories in Each of the Social group in rural India during the period between 2003 and 2013.

	2003					2013				
Size class	SC	ST	OBC	Others	All	SC	ST	OBC	Others	All
Landless	11.31	12.81	9.51	8.68	10.3	7.18	9.41	6.98	7.40	7.41
Marginal	80.08	63.16	69.27	64.17	69.62	85.70	68.83	75.25	70.22	75.42
Small	5.81	14.21	11.41	12.67	10.83	4.77	14.64	10.43	11.31	10.0
Medium	2.20	7.31	6.21	8.28	6.00	2.31	7.10	7.11	10.52	6.94
Large	0.60	2.50	3.60	6.19	3.52	0.03	0.03	0.23	0.55	0.24
All	100	100	100	100	100	100	100	100	100	100

Source: NSSO 2003 and 2013 report on landholdings.

From the table above 1.1, distribution of the households can be seen by size groups in each social groups. Between 2003 and 2013, the highest proportion of households belonged to the marginal holdings (63.16 % in 2003 and 75.42 in 2013) and lowest proportion of households belonged to large holdings (3.25 in 2003 and 0.24 in 2013). Over the period, the percentage of landless households was highest among the STs, and it was the lowest among the Others in 2003 and among OBCs in the 2013. But overall landless in the rural India has decreased from 10.3 percent to 7.41 percent.

1.3. Major issues from the literature

The review of the literature observes that various studies have focused on various issues like land reforms, land inequalities, productivity, credit, irrigation, etc. In terms of land holdings there is still observable inequality among marginalized and the mainstream population. Social discrimination leads to deprivation, and inequality. Distribution of land was much skewed, as small proportion of the population controlled the large areas of land (Nancharaiah, G.1987, Sankaran 1996, Sharma, H. R. 2007, Deshpande 2003, Mohanty, B. B. 2001, Beteille et. al, 1974). Despite several legislative and executive actions adopted by various states for the allocation of land to the SCs, STs and OBCs the actual benefits derived by these communities have been comparatively very small. A number of causes have contributed to this situation. The main reason is insufficient legislation and poor implementation of reforms by various states (Murdia, 1975). Increasing the cost of cultivation is more than the value of production. Reduction in the use of different yield-increasing inputs clearly would cause to deterioration in crop productivity (Narayanamoorthy 2007, Meeta 2008). More than 85 percent of marginal and small farmers constitute less than two hectors. Small farmers always face excessive transaction costs, low negotiating power causing in high input cost, and little price for output which leave them with meager profits. (Narasimha Reddy et al. 2010). Insufficiency of institutional credit is to rigorously hinder the productive activities of poor cultivators. Their credit necessities per acre is much bigger than those of rich cultivators because of the better intensity of land use (crop intensity), but credit accessible to them is much lower. It is clear that institutional preference of credit is based on the land, but it obstructs the poor farmers (Swamy, 1980). The stream of credit to the agricultural sector disastrously failed to show any considerable progress because of the reality that mainly commercial banks were not changed to the desires and necessities of small and marginal farmers. On the other hand, they have no funds to reach the anticipated demand (Mohan, 2006). Further, the agriculture credit to the big farmers was high compared to the small and marginal farmers (Ramakumar and Chavan, 2008). Crop productivity per unit of land declines with an increase in the farm size (Sen 1962, Mazumdar 1965, Hanumatha Rao 1966, Saini 1979, Ghatak and Roy 2007, Basu 2007). Great yield of agriculture takes place in two distinct circumstances. In Gujrat, South Karnataka, and North West places high agricultural productivity occur due to good

irrigation, high purchasing power of inputs, medium density of population, and relatively larger holdings. In Tamil Nadu, AP, and West Bengal, it happens in different situations, due to irrigation, small holdings, high density of population, and extreme level of inputs (Dayal 1984).

1.4. Need for the study and Objectives of the study

Access to land is an important economic resource but many people are deprived of land in rural economy because of social discrimination. My study tries to analyze the access to land among the marginalized groups considering a case study of Gudiwada village in Nalgonda district of newly formed Telangana State. There exist various macro and micro level studies on access to land, whereas my study is to study the land holding situation after the formation of Telangana state. Based upon the established review of literature my objectives are frame as

1. To study the changing land holding situation in India.
2. To examine the inequality in land distribution among the various social groups and size groups.
3. To study the changing context of access to land and its economic and social impact on households at micro level – A case of Gudiwada village**.**
4. To study the role of Telangana state in land redistribution among the scheduled caste households by considering the existing studies and field data.

1.5. Data and methodology

This study mainly depends on both primary data and secondary data. The secondary data has been gathered from the land records of the village, NSSO, RBI database, agriculture census, census reports and various other government reports on the related issue. The Herfindahl index is used to analyze changes in the cropping pattern. To know the growth rate of the production, area and yield at all India level, Compound Annual Growth Rate (CAGR) is used. Primary data is collected from the selected village by conducting an in-depth schedule method. Various statistical methods like Lorenz curve, Gini Coefficient,

Theil Inequality Index, and Cobb-Douglas production function are used in the study. Lorenz curve and Gini Coefficient are used to measure the inequality in land holdings. To measure the asset inequality Theil Inequality Index was calculated. Cobb-Douglas method is used for understanding the agriculture performance by using various factors like irrigation, land rent, fertilizers, cost of cultivation, etc. Finally, Oaxaca Decomposition method is used for the wage discrimination.

Methodology

To find out the inequalities, Gini Coefficient is predominately used by economists. It mainly depends on the Lorenz curve, a cumulative frequency curve that compares the distribution of a precise variable (e.g. land) with the unvarying distribution that shows equality. To build the Gini coefficient, the cumulative percentage of household's holdings of land class-wise or social group-wise has been shown on the horizontal axis and the cumulative percentage of the area owned by them has been shown on the vertical axis. Gini Coefficient is well-explained as A / (A+B), where both A and B indicates the areas on the graph. To know the equal distribution of the variables on the graph, Lorenz curve should be equal to 45 degrees of equal line It means If A= "0" the Gini Coefficient turns into "0" which indicates perfect equality, while if B= "0" the Gini coefficient turns into "1" which shows perfect inequality,if Lorenz Curve is far away fromthe 45 degrees equality line.

$$\text{Gini Coefficient} = 1 - \Sigma^{N}_{i=1} (x_i - x_{i-1}) (y_i - y_{i-1})$$

X_i is the cumulative ratio n of the household variable, for i = 0,...,n, with X0 = 0, Xn = 1.

Y_i is the cumulative ratio of the land variable, for k = 0,...,n, with Y0 = 0, Yn = 1.

***Decomposition of Asset Inequality**

One of the major constraints of the Gini Coefficient is that it is not additively decomposable into several sub-groups, and its decomposition encompasses a residual word (Anand, 1983). Therefore, it is not possible to decompose the whole inequality into inequality within diverse clusters of observations and between these groups. Such a study is feasible for inequality indices that can decompose into several subgroups (Saha 2009).The generally

used inequality index for decomposition study is the Theil Inequality Index (T) which is well-defined as:

$$\textbf{Theil inequality index (T)} = \Sigma_j (Y_j/Y)\, T_j + \Sigma_j [(Y_j/Y) \ln \{(Y_j/Y)/(n_j/n)\}] = TW + TB$$

Theil inequality index decomposable into two parts which are i) within the group (Tw) and ii) between group (Tb) components.

***The within-group inequality is measured as:**

$$T_W = \Sigma_j (Y_j/Y)\, T_j$$

Where

Yj = is the total assets owned by the households belonging to the j^{th} group,

Y = total asset value of all the households

'T_j=the Theil inequality index for the j^{th} group.

Therefore, "Y_j/Y" is the asset share for the j^{th} group.

$$T_j = \Sigma_k (y_{jk} / Y_j) \ln \{(y_{jk}/ Y_j) / (n_{jk}/ n_j)\}$$

Where

n_{jk}= number of household in the j^{th} group

n_j= the total number of households in the j^{th}group

y_{jk}= the value of asset owned by the j^{th} household

Y_j = total assets value of all the households in the jth group

The between-group element can express as the value of inequality index when all within-group differences are repressed by allocating to each observation within a group the average value of the group. Therefore, within group differences are removed, and the consequential distribution displays inequality arising from between-group differences. The between-group inequality is measured as (Partha Saha 2009):

*** The between-group inequality is measured as**

$$T_b = \Sigma_j [(Y_j / Y) \ln \{(Y_j / Y)/ (n_j/n)\}]$$

n_j = the number of households in the j^{th} group

n = total number of households

Y = total asset value of all the households

Cobb-Douglas production function

The present analysis practices the Cobb-Douglas production function for estimating the relationship between dependent and explanatory variables. In the field of Agriculture Economics, the Cobb–Douglas production function is a standard practical method used to denote the technical relationship between the amounts of two or more inputs such as labor and capital. The total output can be produced by those inputs.

The basic formula of Cobb-Douglas production function is;

$$Q = AK^{a}L^{b}$$

Where, A = positive constant.

a and b = positive fractions.

b = 1 – a

This function can also be intimated as follows:

$$Q = ak^{a}L^{1-a}$$

Herfindahl Index:

Herfindahl Index is computed by taking the sum of squares of acreage proportion of each crop in the total cropped area. Mathematically, the index is given below. (Pal and *Kar, 2012).

$$\mathbf{HI} = \sum_{1=i}^{N} P_i^{\,2}$$

Here, N is the Total number of crops and Pi signifies area proportion of the i^{th} crop in the total cropped area. With the increase in diversification, the Herfindahl Index would decrease. This index grasps a value one when there is perfect concentration and approaches zero when there is perfect diversification. Hence the Herfindahl Index was confined by "0" and "1"

The Compound Annual Growth Rate (CAGR)

The Compound Annual Growth Rate (CAGR) is the mean annual growth rate of production over a particularized period of time extended than 1 year.
It can be written in the following way:

$$\text{CAGR} = \left(\frac{\text{Ending Value}}{\text{Beginning Value}}\right)^{\left(\frac{1}{\#\text{ of years}}\right)} - 1$$

Oaxaca Decomposition Method

The wage equation for men and women are then

$$W_m = a_m + b_m ED_m$$

$$W_f = a_f + b_f ED_f$$

Where:

ED_m Measures years of education

b_m The amount by which an extra year of education raises the male wages

(Subscript f: versions for women

Wage gap is W_m - W_f

Decomposition:

W_m - W_f $= b_m (ED_m - ED_f) + (a_m - a_f) + (b_m - b_f) ED_f$

1.6. Organization of the chapters

Present study has been classified into six chapters to study the land inequality and agrarian situation at the nation, state, district, and field level. In this regard, the First chapter is introduction: gives information regarding the introduction of the related study objectives and methodology of the study. Second chapter is review of literature, totally concentrates on the review of literature, which tries to find out the research gap in the study. Third chapter is changing the context of land holdings in India, mainly focuses on issues regarding to land, land inequality, agriculture production, credit, income, employment, debt, wage, etc. at national. Fourth chapter is land holding situation in united Andhra Pradesh: it focused on issues like landholdings, production, credit, wage etc. at the state level. Fifth chapter is land inequality and agrarian situation: Gudiwada village, mainly concentrates on the field study of the village. In this chapter, issues regarding land holding pattern, land inequality, asset inequality, occupational structure of persons and households have been mainly discussed. The chapter also discusses briefly on agrarian situation in the village, issues like agriculture production, productivity, income, cost of cultivation, credit availability, and the agriculture farming among the social groups and class groups, and also on wage inequality by using the Oaxaca Wage Inequality Method. Chapter sixth is Summary and Conclusion, discuses on the summary and conclusion of the study.

1.7. Limitation of the study

This study would be based on one particular village. Therefore, findings of the study may not be generalized beyond the study area as other areas may not have similar socio-economic conditions.

Chapter II

Review of Literature

2.1. Introduction

This chapter provides a brief review on the empirical and theoretical basis for the present research by reviewing the literature on the land and agriculture related issues, historically socio-economic relationships in India, historical evolution of Indian agrarian system, impact of land reforms and land redistribution on marginalized groups across the country and state. It also discusses on the productivity debate that which size groups of farmers are productive, and also relationship between land, employment, income, and debt. In this chapter, section 2.1 includes an introduction, section 2.2 gives the information about Socio-economic situation in the colonial period, section 2.3 analyzes the Land reforms, land holdings, employment and poverty issues in India, section 2.4 provides brief review about the Agrarian conditions and crisis in India, section 2.5 emphasizes on the credit and debt issues of farmers, section 2.6 focusses on Agriculture Productivity Issue, and section 2.7 discusses on Land Reform and Issues in the Combined Andhra Pradesh

2.2. Socio-economic situation in the colonial period

Atchi Reddy (1990) in his study "Travails of an Irrigation Canal Company in South India, 1857-1882" explains that English rulers favored to construct the railways in India, although losses were accrued by the railway companies. But they were not interested in the construction of irrigation projects. In Madras Presidency, the invitation to the private capital in irrigation projects for the first time had been given to Madras irrigation canal company (MIC) to construct the Tungabhadra irrigation project at Sunkasela. This MIC was a private company. But this company failed to construct the project of building KC canal in the proper way due to the mismanagement and lack of cooperation among the company workers. In spite of having defaults in MIC, in contrast, the starvation troubled areas of Rayalaseema received many secular profits from the works implemented by the Madras Irrigation Canal and Navigation Company between 1857 and 1882. Labor engagement in agriculture increased and brought about many reforms in agrarian relations

in this region. A lot of tracts moved to paddy and commercial crops other than cotton in cultivation.

Dharmalingam (1991), in his empirical study on the "Agrarian Structure and Population in India: A Selective Survey" explains the overall structure and evolution of Indian agriculture since the Medieval times to the 1990s. During the time of medieval period, agriculture was concentrated around the rivers, i.e. water sufficient places, and there was no system to control the land. Whoever cultivated the land were the owners of the land. In Mughal period, land was abundant, pageantry was hereditary, but if a peasant was unwilling to cultivate, land could be taken from him and was given to whoever was willing to cultivate. In Southern India, land was under the supervision of the Brahmins, who used to extract surplus from the agriculture production, and agricultural laborers were from the untouchables. Before the British arrived in India, land ownership was under the native rulers who used to collect the land revenue from peasants without any mercy on them. During colonial times, British rulers implemented the Permanent Settlement Act to collect tax revenue from the peasants. It was called the Zamindari system in the Central India in which peasants used to pay tax to the Zamindars. In South India, Ryotwari system was in force to collect the tax revenue, in which peasants themselves used to pay taxes directly to the state. A major change was brought about in the agrarian scene between the 1950s and 1960s by the "Land Reform" Legislation. Due to the land reform in the areas of Ryotwari, medium and small landlords retained a large portion of their land by turning themselves as cultivators. Poor peasants, landless laborers, artisans, and craftsman did not get much benefit.

Dharmalingam(1991),explains in his article "Agrarian Condition during the Colonial Period", that changes in agrarian relations was the active participation of moneylenders in the process of production. Rural indebtedness was common, in areas where single crops spread and cultivation of the commercial crops was motivated. In this period, credit relations tumbled down to the peasants, through two ways: one, by causing them to surrender a large part of the product to the creditors and, the other, to surrender the land through failure to pay. Due to this control over the land caught up by the creditors or money lenders, then new economic groups of sharecroppers and tenants came into existence. The

number of agricultural laborers flourished. The chances of land alienation were high when the creditor was a landlord-cultivator, which was generally the case at the end of the 19th century.

Mani Kumar (2014), in his study "Impact of British Colonialism on Different Social Classes of Nineteenth-Century Madras Presidency", elaborates on conditions of the various factors during the British rule under the Madras Presidency. Throughout era of the British rule in the Madras Presidency, most of the weavers lost their employment due to the cheap imports of clothes from Britain, which were produced by the machines rather than the looms. Dalits were treated as laborers in most of the places, and some of the Dalits converted to Christianity to get food and livelihood, while famines occurred in the Madras Presidency. Farmers had become pauperized and started committing suicides due to the harassment of the moneylenders. Farmers became indentured labors and immigrated to the Britain. British rulers were not much interested to develop the irrigation in the presidency. Commercialization of agriculture benefited the landlords. Brahmins established near-monopoly over administrative positions and the civil services. Courts could not take any action on upper caste people who punished and harassed the lower caste people.

Saravanan (2006),in this study, "Colonial Agrarian policies in the tribal areas of Madras Presidency: 1872–1947", explains that, till 1875, the colonial agricultural program in the Madras Presidency was concentrated on boosting export-oriented products and take out land earnings from the cultivating farmers. No significant processes started for the improvement of agriculture and to protect the farmers from regular catastrophes. In brief, even the limited measures commenced for agricultural improvement only benefited the large farmers while having a severe effect on the marginal, small farmers, and agricultural laborers in the Madras Presidency during the British period. The British India agricultural law in the mountain regions merely focused on to take out additional land returns from the mountain farming people.

Pradhan (1987), makes an empirical study in his article, "Agrarian Violence in Bihar" clearly explains he flaws in the Indian agriculture policy framework. This study explains that with the advent of British rule in India, they dominated Indian feudal landlords and peasants, tenants, laborers with private capital in agriculture and extracted the large

revenue from the peasants. Colonial policy aimed at the industrial development in their home country at the cost of the colonies. In this colonial period, public investment in irrigation, flood control, and agricultural developments were neglected. When practices came to the post-independence period, agriculture spread all over the country. During the first plan period, 16 percent of planned outlay expenditure was allocated to the development of medium and large irrigation, then the second five year plan and the third five year plan reduced the expenditure on irrigation. There was a shift in favor of industry at the cost of agriculture. All these were in the best interest of the big industrial bourgeoisie and, hence, it became crucial to step up the agriculture and particularly food grains production. Instead of achieving with public investment in the water management and development of dry land areas, which heavily depended on groundwater and water resources scared by technology, but adopted the public investment and activities to promote the seeds fertilizer technology to limited areas where water was sufficient.

2.3. Land reforms, land holdings, employment and poverty issues in India

Uppal (1969), in his article on the "Attitudes of Farm Families toward Land Reforms in Some Punjab Villages", studies the effects of the legislation's major provisions among Punjabi rural households in different tenure situations, their attitudes, and opinions on various land reform issues, and examines due to the land reforms. To get the result from his objectives, he selected the two villages in the Punjab state. Through the overall study, he reveals that the number of agricultural laborers and landowners increased and those of the tenants reduced in the field survey villages in Punjab after the land reforms. Landowners and tenants had awareness of the tenure of the tenant, but the tenant did not have the awareness of the tenancy rights. Tenants were not granted land for two and three years due to awareness of landowners about the tenant right that if the tenant farmer cultivated the land for more than 3 years, he could rightfully be granted the ownership of the land. This also brought about fear among the landlords regarding losing their status. Land legislation had converted some tenants as landless laborers. The overall study reveals that landowners and tenants were well informed of land reforms legislation.

Sanyal (1969), in his article on "Size of Holding and Some Factors Related to Production", concludes that farmers applied more factor inputs on their own land than the leased-in. Due

to this, productivity was a downward trend as holding size increased in terms of the percentage of leased-in area with regard to total area operated. Smallholder better used the fertilizer, workers, and irrigation per acre compared to the large holders. Hence, productivity was higher for small holders compared to the large holder. Smallholding used the land more intensively than large holdings. Due to the non-availability of labor at the time of peak season and more fragmentation of land led to the lower productivity for large holders. More fragmented land of large holder did not efficiently use the factors like irrigation, fertilizer, and labor.

Hanumantha Rao (1972), in his article on "Ceiling on Agricultural Land-Holding: It's Economic Rationale", explains that through the empirical study, the traditional techniques of land-use, e.g. irrigation, multiple cropping, and the use of labor, "small farms continued to be more capable than the large farms". However, large farms augmented output per acre by taking a lead in embracing the new technology and by increasing the use of capital inputs. Reallocation of land and capital assets from the large farmers to the marginal and small farms may increase total production and employment paying to the larger obtainability of labor per part of land and capital among smaller farms. Further, unbiased distribution of land has led to additional employment and income for small farmers in addition to backing to the more effectual use of the accessible resources. A ceiling should be imposed on operational holdings and future acquisition on land along with the ceiling imposed on the ownership holdings. In the case of Punjab, despite being having a ceiling on ownership holdings, big farmers increased their operational holdings through outbid small and marginal farmers in the land markets. Big farmers leased in the land instead of leased out the land compare to rest of the country.

Kangayappan (1973), in his article on "Some Policy Issues on Mitigating Poverty in India", explains that, the first five year plan in India started with the aim to correct the imbalance in the economy affected by 2nd World War and the separation of the country, and also at the same time, to initiate an exercise of all-inclusive development which would ensure an expanding national income and a steady progress in living standards. The second plan also started with the aim for an upsurge in national income, speedy industrialization with specific importance on elementary and heavy industries, an increase in employment

opportunities, and a decrease in inequalities in wealth and income. The third plan, in addition to the above objectives, indicated the importance of achieving autonomy in food grains and an upsurge in agricultural production. But these three five year plans achieved growth in the production and increase in national income but did not change the poverty conditions of cultivators and agriculture labors even though emphasized on the land reforms in three plans. The labor market in the agricultural sector is improperly organized. Also indebtedness, lack of facilities and poverty of agricultural laborers and cultivators rise the supply of labor in the market, while the small size of land holdings and lack of irrigation facilities not only restrict the demand for labor but are also accountable for uneven distribution of work throughout the year. The fruitful incorporation of the poor, who are the low-caste groups, the agricultural laborers, and the cultivators-into the economy, demands specific policy measures focused toward reducing the poverty of these groups.

Beteilleet. al (1974), in their study on "Inequality and Social Change" explain that "Scheduled Castes" (SC) and "Scheduled Tribes" (ST) are the traditionally underprivileged and retrograde units of Indian civilization, and they suffer at the worse shares of the social and economic pyramid. In this kind of society, where inequality and supremacy are profoundly frozen in the social arrangement and in the mind of the society, it is hard to enrich and enable the disadvantaged groups via lawmaking procedures because any effort to implement the privileges formed by act is frequently to question the prevailing direction of relationships.

Murdia, (1975), in his study on "Land Allotment and Land Alienation: Policies and Programmes for Scheduled Castes and Tribes", Explains the overall land reform process in India and moreover explains that possession of land by Scheduled Castes (SCs) and Scheduled Tribes (STs). Large numbers of the SCs and STs in the country get their source of revenue by functioning on the land, but they are more deprived pertaining to ownership of land. More landlessness is among the SCs and STs compared to the general group. More cultivators among the SC and STs possess the uneconomic small holdings compared to the general groups. According to the 1961 census, there were3.15 crore agricultural laborers in the country out of whom 1.04 crore or 33 percent and 0.33 crore or 10.47 percent belonged to SCs and STs respectively.1961 census revealsthat74 percent of SC cultivators

and 54.71 percent of the scheduled tribe cultivators had holdings below 5 acres of land. Again the productivity of land owned by these groups in most cases was poor due to traditional methods of cultivation, the absence of irrigation facilities, and inferior fertility of the soil. Despite several legislative and executive actions adopted by various states for the allocation of land to the SCs and STs, the actual benefits derived by these communities have been comparatively very small. A number of causes have contributed to this situation. The main reason is insufficient legislation and poor implementation of reforms by various states.

Bhalla (1977), in her study on "Changes in Acreage and Tenure Structure of Land Holdings in Haryana", Finds out intense sinking in the acres arrangement of farm possessions over the epoch. The number of households operating five acres or less went up by nearly four times. This went with a steep reduction in the number of households in all acreage classes above 10 acres, and a deterioration in the inequality of land distribution. With continued downward shift of acreage structure on holdings, big holding divided into parts, medium holdings became small holdings, small holdings became less than economically viable land and also this increased the agriculture labor raised in rural Haryana from7.38 to 15.78 during the period from1951 to 1961, these are due to the green revolution affect in the Haryana. The shift in acreage structure and the multiplication of a number of agricultural laborers in Haryana reduced poverty and increased income per acre due to the introduction of the productivity-raising technology during the mid-sixties. Due to the tenancy legislation in Haryana, land tenure was retained with the pure owner. There was decreased absolute tenancy.

Draft Five Year Plan. (1978-83).Economic planning in India highlights land reforms right from the first Plan. In the Draft Five Year Plan 1978-83, the Planning Commission once more placed major importance on the operation of land reforms for rural development. "Redistribution of Land will increase employment in farming because small holdings farms steadily engage additional labor per hectare than large landholding farms. And, there is need to prevent waste of productivity per hectare, for the reason that, given equivalent access to material inputs and credit, smallholding farms productivity is more per hectare than large holding farmers

Ghosh (1979), in his article “Land Reforms and the Draft Five Year Plan 1978-83”, enunciates the failures of land reforms in India. It was explained by various committees such as task force commission on agriculture, and draft of the five-year plan. Task force committee explains that failure of land reforms which lacks political will it led to the cracks between procedures, legislation, law, and application. The absence of pressure below means peasants and sharecroppers who benefited from this became passive to fight for their rights. The inadequacies in administration in which land revenue department should have taken care of all the functions related to the land, did not implement this efficiently due to the work burden, and another thing is that most of the bureaucrats were against the land reforms as they were from the landed community. Like all other reports, Draft Five Year Plan 1978-83 once again acknowledged that "the slow improvement (of land reforms) is due to the inadequate implementation of ceiling laws", and "the updating of land records is crucial to the development of a healthy agriculture.” Bengal is one of the states which effectively implemented the land reforms due to the political will and struggles from landless laborers, and sharecroppers, etc.

Krishnaji (1979), studies on the “Agrarian Relations and the Left Movement in Kerala”, which explains the execution of land reforms in the Kerala by the left movement. In Kerala in 1969, the land reforms were enacted through the abolition of tenancy, conferment of the proprietorship rights to the tenants, and distribution of land to the landless poor. Ownership of land was conferred through the reforms rights not only on the Kudikidappukar (hutment dwellers) but also most of the tenants had become the owners of the land, if we observe in the period 1956-63 in Kerala most of the land transferred from the poor to rich due to poverty and other problems when the poor small landholder sold their land to rich people for money. At the time of the land reforms period (1969), land was transferred from the rich to poor. In Kerala, powerful putting into practice of the law was achievable by the strong left movement and another fact is that land reforms were executed by the communist party ruled government. These were the reasons for the success of the land reforms in Kerala compared to the rest of the India.

Herring (1980), in his article “Abolition of Landlordism in Kerala: A Redistribution of Privilege”, explains that in 1969, Kerala formulated the abolition of tenancy, which

changed the agrarian structure in the Kerala. In 1969, most of the area leased-in was controlled by tenant operatives with possessions higher than the median land size, a significant number of whom owned land as well. Mainly large landholders leased in the land. The relatively few tenants with bulky operational holdings held an uneven share of the area leased in by tenants. Elimination of landlordism and conferring of proprietorship on tenants not only benefited the poor farmers, but also benefited the rich and capitalist farmers. In Kerala, larger holdings contained a higher percentage of leased in, whereas small and poor tenants having small holdings, and vesting ownership rights on the land of the tenants benefited much for the rich farmer than poor farmer. But the reforms in Kerala do not found land to tiller, merely land to the immediate land owner.

George (1986), in his article titled "Emerging Trends in Size Distribution of Operational Holdings in Kerala", explains that forceful execution of land reforms with distribution of surplus land reduced the inequalities in land holdings. From 1970-71 to 1980-81, a number of small operational holdings and area operated increased compared to large holdings. Nevertheless, average size of holdings in small land holdings increased up to three hectares, but the average size of holdings declined in the large holdings. Agriculture performance in Kerala from 1970-71 to 1980-82 shows that Kerala had negative agriculture growth of -.39 percent per annum for all crops. The adverse progress rate in the production was affected by the negative progress in the cropped area and further fragmentation of small economic unviable holdings during this period resulted in reduced cropped area. The growth rate in productivity was also not effective due to the less increase in the investment on improving the land quality of small holdings.

Nancharaiah (1987), in his study on "land legislation and changing the agrarian structure in Andhra Pradesh", examines that, there was disparity social group wise in the landholdings in the Kanchakodure village. There among the social groups in which mainly land has been shifted from the Brahmins to non-Brahmins. Out of the total village land in 1965, Brahmins controlled7 percent, non-Brahmins controlled 77 percent, and scheduled caste people 15 percent. In 1982, land possessed by the Brahmins came down to 3 percent, whereas those by the non-Brahmins increased to 85 percent, and also the land possessed by the scheduled caste people came down from 15 to 12 percent. Here, the average size of

land holdings of the Brahmins and Scheduled Caste people decreased over the years compared to the non-Brahmins. If we observe the size of holdings, the big holdings were largely decreasing, and the small and marginal holdings were increasing. Much of the marginal holdings of land were held by the scheduled caste people. In this village, the Brahmins' holdings decreased because they chose migration shift for employment opportunities in urban areas.. At this time, the non-Brahmins were in the second position in the village, and they were working as tenants and sharecroppers. When the Brahmins left the village, they sold their land to the non-Brahmins. The Scheduled caste people had marginal holdings, and they were growing vegetables, but the produced vegetables were bought by none in the market. These were the economic discrimination towards the scheduled caste people, who were not allowed as tenants by non-Brahmins. Scheduled caste people were economically, politically, and culturally discriminated by the Brahmins.

Radhakrishnan (1990),in his article titled "Land Reforms: Rhetoric and Reality" quotes the fifth five year plan on land reforms "A comprehensive valuation of the programme of land reform implemented since independence is that the laws for the abolition of intermediary tenures have been implemented fairly efficiently whilst in the fields of tenancy reform and ceiling on holdings, legislation has fallen short of the desired objectives, and implementation of the enacted laws has been insufficient". Land reforms can be anticipated to be a reasonable achievement only in those states where the rural masses, the possible recipients, are extremely politicized and organized, and are proficient of asserting and struggling for their privileges. Nonetheless, if the centre is reigned by legislatures of the rural elite, such reforms can be easily destroyed as it had occurred in Kerala for more than a decade.

Haque and Parthasarathy (1992), in their article "Land Reform and Rural Development: Highlights of a National Seminar", summarize the different views on land reforms of different states presented by participants. Haque presents that land reforms are an engine for social and economic transformation and rural development. There is a need for reexamination of land reforms in the light of new economic policy. Tarlok Singh in his presentation expresses that there is the need to end of the Benami transactions and enforce the ceiling for future and legitimacy ceiling in the limit of ceiling and registration of the all

tenants at the village level. Narasimha Reddy in his detailed presentation expresses that, peasant struggle in AP took place for the occupation of Benami lands, for possession of government wasteland under illegal occupation of landlords and for effective implementation of Inamdar act 1953 and for temple lands. K N Raju in his inaugural presentation reveals that there was low average agriculture growth in Kerala, but it improved the rural people living standard. The socio-economic transformation covered the labor and credit market due to the effective implementation of land reforms. Kannabiran expresses that there was no peasant struggle for their rights, and there was no way to implementation of land reforms due to the entire institutional structure seemed against the reforms.

Bandyopadhyay (1993), in this article "Land System in India: A Historical Review", explains that historically from ancient period up to the advent of the British rule, absolute ownership (private) of land was exercised only by religious grantees, but in other situations, there was no concept of land as a private property. Land was treated as a thing of value, but it was considered as aggregate of community, not as a personal property. During the period of British rule, creation of zamindari system of intermediaries was based on the principle of take-out substantial levies from the zamindars without humane for the enhancement of agriculture land. This load of hefty duties was moved to peasants. Finally, it led to the crucial oppression of peasants, inadequacy capital investment, and marginalization of small farmers. After independence, Indian government implemented the land reforms through various plans to achieve an egalitarian society and socio-economic development of the landless poor. Nevertheless, both in expressions of execution of upper limit laws and delivery of excess land amongst the landless and peripheral farmers, the result is seen without any important achievement.

Sharma (1994), in his article "Distribution of Landholdings in Rural India, 1953-54 to 1981-82", concludes that the concentration of ownership holdings across the states, measured in terms of Gini coefficients including landless households, was significantly lower towards the early 1980s in comparison with the early 1950s. There were varying degrees in the values of Gini coefficients for a majority of states during 1970s in spite of land reforms. On the other hand, if one were to go by the Gini coefficients without landless households, the concentration of holdings declined only in 6 states. In terms of Gini

coefficients without landless households, the distribution of holdings became less iniquitous in a majority of the states. For example, in the direction of the early 1980s, the amount of area owned by the top 1 percent holdings varied from 16.78 % in Andhra Pradesh to 7.91 % in Jammu and Kashmir, while the area operated ranged from 17.20 % to 7.8 6 %; at the national level..

Parthasarathy (1996), in this article "changes in the agrarian structure and directions for land reforms", observes the altering agrarian structure to know the significance of land reform to the land in question. He depicts some notable inferences that are; land reform in Andhra Pradesh did not support directly providing improved access to land to landless agricultural labor and marginal owner. State government through the imposing of the ceilings on land picked up very little surplus land, then less land was distributed to the poor and landless people, but whatever land was distributed to the landless poor, approximately 90 percent of the land was dry land. It required huge investment to produce any crop, but the poor farmers could not invest that much on the received land as it was beyond their capacity. According to data, some amount of wasteland was reported to have been distributed to the landless, but there was little statistics on the status of such land. The portion of agriculture in the Gross Domestic Product was diminishing, but not in the employment during the period 1971-81. The percentage of agricultural workers in Andhra Pradesh was 52.9 percent in 1981, against 37.5 percent at all India level in the same year. An important exciting observation from the study that, the process of change of feudal holdings into capitalist holdings, mainly in the deltaic part of the AP was on account of initial land reform legislation, and delivered an institutional basis for technical change in agriculture. The marginal farmers did not produce a higher productivity per hectare of either irrigated or unirrigated land. Rural poverty in AP was decayed between 1983 and 1987, and then the urban poverty upsurges were due to higher rates of migration of rural landless and unemployed people into urban slums. Money-lending, a feature of the feudal land system, was strengthened in the context of scantiness in the availability of institutional credit. Institutions for rural development can function successfully only if the land power of the few is destroyed in rural areas.

Dogra (1996) in his article titled "Land Reforms to Fight Hunger", explains that enhancing land accessibility to the deprived farmers and decreasing disproportions in the distribution of agricultural land are extremely needed for decreasing starvation and malnutrition in the world. Here, it can be observed that unequal distribution of agriculture land appears mostly in Latin America and all over the world. In the case of Egypt, 20 percent of landowners controlled 70 percent of land, and in Bangladesh, above 70 percent of marginal farmers controlled only 20 percent of total land. According to seventh plan documents, marginal land and small landholding farmers with holdings of land up to two acres constitute 70 percent of landholdings but farming only 20 percent land of total cultivated area. He expressed that view of the FAO (Food and Agriculture Organization) that here it is essential to emphasize that yields per hectare are as excessive on small as on large farms or, in old-fashioned agriculture, even greater. With a little prominent exemptions, whole production per hectare is greater on small farms, essentially for the reason that their potentiality of land usage is greater. An equivalent supply of agriculture production equipments, as well as services, can only support to make stronger the contribution of the small farm in expanding production. If we observe in Thailand, farmers having two to four acres land produce almost 60 % more paddy per acre than farmers having land more than 140 acres. An examination of the changes in the value of production on large and small farms in Argentina, Chile, Colombia, and Brazil exposes that small farms are 3 to 14 times additional productive per acre than the large landholding farms.

Ali (1996), in his article titled "distribution of ceiling surplus land and its impact on employment and income", studies how the distribution of surplus land impacts on employment and income, cropping pattern, and yield per acre in the distributed land. His study was based on the field survey by taking on the stratified random sample and information gathered through the questionnaire method. The impact of distribution of land for landless poor has an optimistic influence on employment. The distribution of land increased employment of the benefited people than employment of those before land distribution. Distribution of land to the poor people increased their income than the income prior to land distribution. And also, it increased the indebtedness of the beneficiaries of the land. Among the total beneficiaries of land distribution, 25 percent of the beneficiaries had to sell their land to meet the expenditures of illness in their family and to clear debt. The

yield per acre of the crop was also very small as a result of the nature of soil and deficiency of the finance to purchase the modern inputs.

Mohanty (2001), in his study on "Land Distribution among Scheduled Castes and Tribes", explains that Scheduled Castes and Scheduled Tribes continued to be treated as deprived units with regard to land, but there was no significant development in their landholding situation over the ages. Slightly, in few states it has been deteriorated furthermore. Even afterward over and above fifty years of planned action and strategy procedures, rational circulation of land amongst these regressive groups seems simply expecting contrary to expectation. There is a powerful connotation between social activities, legislative procedures and their successes, and the resultant violence on the scheduled people. The states with a powerful contextual of activities have comparatively well legislative and policy-making actions for safety, reestablishment, and allocation of land.

Deshpande (2003), in his article titled "Current land policy issues in India. Land Reform, Land Settlement and Cooperative", explains that at the time of British rule, land was a major issue. At the time of independence movement, farmers of the country participated in the movement because of the "land to the tiller" slogans of the Congress party. After independence, a commission was appointed under the chairmanship of J.C Kumarappa to address the land issues. This committee pointed out that there were inequalities in the holdings, large groups of people had small portion of land, and a small group of people had large portion of land in the country. There was no protection for the tenants, and there were no proper land records which led to land litigations.

Following the Kumarappa suggestions, Government of India (GoI) implemented the land reforms all over the country from the first five-year plan onwards.

1. The first and lengthiest stage (1950-72) contained land reforms that comprised 3 main efforts: elimination of the zamindars, tenancy reforms, and the reallocation of land through land ceilings and consolidation of holdings. The elimination of zamindars was reasonably fruitful, but tenancy reform and land limitations encountered with a lesser amount of achievement.

2. The second stage (1972-85) moved concentration to taking uncultivated land into farming.

3. The third stage (1985-95) amplified focus in the direction of soil and water preservation by the use of the "Watershed Development, Desert-Area Development Programmes (DADP) and Drought-Prone Area Development (DPAP). A Union Government Wasteland Development Organization was set to concentration on badlands and despoiled land".

4. The fourth and existing stage of policy (1995 onwards) centers on discussions about the need to be persistent with land legislation and hard work to increase land revenue administration and, in specific, clearness in land records.

Bandyopadhyay (2003), in his study on "Land Reforms and Agriculture: The West Bengal Experience", explains that West Bengal as the presidency and as the state faced a lot of problems. At the time of 1943, it faced the famine conditions. During this period, between three and four million people died due to the hunger. After independence, India imported food grains. It was distributed among the people through rationing all over West Bengal. In 1977, the left parties came into power and implemented the land reforms in the name of "Operation Barga" where the state had the highest sharecroppers and landless households. Through the operation Barga allowed free title to homestead plots up to five cents for a homeless family, 500,000, over 1.6 million sharecroppers were noted giving them hereditary right of cultivation, and a fair deal in crop sharing with a certificate of sharecropping which could be used as a document to establish one's identity and also for securing crop loans from institutions. Due to this in the 1980s, most of the productive classes came to power in villages. They sufficiently used the rural development programmers such as irrigation, land development, and wage for work programs. Because of this, Bengal achieved tremendous growth in agriculture production and yield. West Bengal's growth in agriculture production and yield reduced in the 1990s due to the lack of innovations and proper facilities.

Banerjee and Iyer (2005), in their article, "History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India", examine the overall land tenure systems in India from the Mughal period to land reforms after independence. In the Mughal Empire, there was land revenue system (Munsabdaari system), and the

revenue was collected by the state-appointed officers. During the British period, there were three land tenure systems, such as zamindari, Mahalwari, and Ryotwari land tenure systems implement across the British India. The landlords areas were an unequal distribution of land compared to non-landlord areas. Investment is high in agriculture development and education and health in the no landlord districts compared to the landlord's district due to more concentration of the rural development programs in recent times. During the time of British period, the areas of revenue collection by landlords was not developed as much as the areas of revenue collection by state. The dispersal of wealth is significant for three reasons: first, it decides the magnitude of the cluster in the farmers that had sufficient land and extra prosperity to be capable to create the investments to raise the productivity. Second, it influences the stability between people who primarily cultivate their personal land, and people who cultivate other people's land. It is familiar that cultivation of other peoples' land creates incentives problems, and then it reduces the investment and yield. Lastly, it made it probable that the political wellbeing of the rural people would be different significantly from that of the elite.

Sharma (2007), in his article titled "Land Distribution and Tenancy among Different Social Groups", concludes that caste structure of rural households display that nearly 10 percent of the households belonged to the STs, approximately 21 percent to the SCs, around 41 percent to the OBCs, and a 26.2 percent were from other castes. The shares of these groups in the land were 11.10 percent, 8.97 percent, 43.64 percent, and 36.29 percent respectively. There is an unequal distribution of land among the social groups. To The total landless households include mostly the OBCs followed by the SCs. Landless households are the highest among the SCs and STs compared to remaining caste groups. The share of households land leased-in was much higher among households of lower size categories such as landless and marginal households compared to their counterparts in higher land size categories.

Basu (2007), in his study "Land Reform, entry in The Oxford Companion to Economics in India", examines from the economic point of view in favor of land reforms. India as a proof on the reasons and effect of land reform. In his study, he empirically observes the consequence of the land reforms on the yield and poverty, and success of land reforms.

Land reform generally denotes redistribution of land from the opulent to the deprived. An economic argument of land distribution is to increase productivity and reduce poverty. Smallholdings will increase the productivity than large holdings. Ownership of the land gives more productivity than sharecropping. Efficient farmers want works in the small plots of land and landlords lease out the inferior land only. Here, some friction on the economy in the reduction of poverty, and increase in productivity. The reality reflects that land reforms have an adverse outcome on paucity, though the influence on yield is diversified. In those states where these procedures were intensively executed, the influence of land reform on yield seems to be positive.

According to Government of India, (2008a:73), the NCEUS has identified certain supply-side restrictions and these constraints are observed to have considerable proportion. As the public investment in infrastructure has declined worryingly since India has commenced on the new policy paradigm. The observation is well in tune with the reality as the share of public sector expenditures for agriculture and allied actions has dropped from 4.9 percent throughout the 9th plan period to 2.7 percent.

Scaria (2010), in her article, "Changes in land relations: The political economy of land reforms in a Kerala village", views that the genuine tillers of the soil failed to get benefits from the redistributive land reforms that gave proprietorship rights on nurturing tenants and homestead rights on hut inhabitants. Over the period, upper castes lost their domination over land and a few non-traditional landowning groups fitting together the ranks of landowners. Apart from land reforms, there are other indigenous and exogenous factor which led to shift of the land ownership to the extent of modern education, migration, the depression of the 1930s, etc. Disagreeing to expectations, land reforms are unproductive to improvement of agriculture and food security in the state. On the other hand, they heightened absentee landlordism and a shift to non-agricultural occupations. The connection between caste and landlessness persists to exist in spite of radical land reforms.

2.4. Agrarian conditions and crisis in India

Most of the political economists say that the 1960s and 1970s were the periods of agricultural capitalism. These two decades saw the excited participation of the state in

stimulating capitalism in agriculture. It was also hoped that the agricultural surplus thus derived would be used to encourage industrial capitalism. Industrialization, which was stagnant throughout the 1960s and early 1970s, gained push in the late 1970s. Some argue that it was the failure of capitalist development in agriculture to induce industrial expansion that forced the government in 1975 to bring in the emergency so as to help foster industrial capitalism

Pal et al. (1997), in their study explain that government outlay on agricultural research and education being the main significant determining factor of total factor of productivity, its level with regard to the worth of agricultural production and its distribution over various commodities and regions would control the importance of the growth of production, ability in resource sharing and the distribution of benefits from the growth in productivity. In contrast, the annual progress rate in actual public spending on agricultural exploration and education speeded up in the after 1970s, decelerated from the mid-1980s and hanged about 0.49 percent of Agricultural Gross Domestic Product (GDP) in the initial 1990s, as contrary to the requirements of Ninth Plan at 1 % anticipated by the Indian Council of Agricultural Research (ICAR).

Hanumantha Rao (1998), in this article "Agricultural Growth, Sustainability and Poverty Alleviation: Recent Trends and Major Issues of Reform", explains that with comparison India with China and South Korea. Socio-political systems in China and South Korea simplified mobilization of required means by state for investment in the physical structure and along with human development. Additionally, in both the countries, the execution of extreme land reforms at the very start, human development and the consequential speedy demographic change confirmed that the trickle-down instruments were in effect so that extraordinary progress resulted in the inclusive allocation of gains and quick decrease in poverty. All this was occurred because both of them showed excessive political will and lent determined state support in executing their policies. In India, implementation of land reforms has not succeeded in confirming land to poor. Green revolution in India prospered, but due to the infrastructural blockages, it could not make further growth in the field of agriculture. Fertilizer is one of land's enhancing inputs. In spite of credit constrictions, marginal and small farmers who have sufficient surplus labor can use it per hectare

effectively as much as a large farmer. But due to the decline in the subsidy for fertilizer, the use of fertilizer reduced and this decreased their surplus produce to sell.

Patnaik (2002), in her empirical study on agrarian crisis and global deflation, reveals that agrarian crisis in India and other developing nations has been prevailing. Especially in India, superimposing the 1930s problems in the 1990-1996 are continuing related to the land concentration and failure of the land reforms and the new agrarian crisis in the rural livelihoods. All these problems were initiated by the neo-liberal policies, which led to public expenditure cuts, a credit squeeze, and collapse of Employment growth in rural areas. This crisis was exaggerated by the full trade liberalization, which affected the farmers acutely. The intensifying indebtedness of Indian farmers involved in export of crops production is leading to asset loss and poverty, while more than a thousand farmers have committed suicide in a single state alone. In the 1990s, food grain output growth halved compared to the previous decade. Per head accessibility of food grains in India declined which is same as the 1930s. Price of the domestic products has been declining due to the import of commodities from developed countries.

Shetty (2004), in his article titled "Socio-Ecological Implications of Pesticide Use in India", explains that pesticides producing companies are giving some incentives to the input dealer and pesticides traders to sell more products. Taking this advantage, traders are selling the products to the farmers without giving proper instructions regarding its use crops. Without proper instructions, the farmers are spraying high amount of pesticides on crops. Over the field study of various states, it was observed that 49 percent, 39 percent, and 12 percent of illiterate, primary, and secondary educated respondents respectively had low awareness regarding the ill-effects of pesticides, whereas most of the respondents with tertiary education had high awareness. 44 percent of the respondents, particularly medium and large farmers, do not personally engage in the spraying of pesticides. They hire agricultural laborers (on contract basis) for the purpose instead. Illiterate farmers or agricultural laborers are a vulnerable group as they cannot recognize the cautioning symbols on the label and are frequently subjected to the risk of poisoning. Majority respondents who take up spraying informed that they frequently faced problems of

headaches, dizziness, nausea, nasal discharge, skin and eye irritation while handling and spraying pesticide.

Vaidyanathan (2006), in his article titled “Farmers' suicides and the agrarian crisis”, explains that in the recent time, some unfavorable things have taken place in Indian agriculture such as farmers’ suicides, declining the prices of several crops, decreasing the agriculture growth, and increasing the inequalities between farming and non-farming sectors. There are some important reasons for increasing the farmers’ suicides, such as increasing indebtedness not only for the personal consumption, but also for cultivation needs, since the farmers do not get more income from cultivation eventually. There is also decrease in the government investments for development of the irrigation facilities. Then farmers are going to dig the well and bore wells, Lack of rainfalls and droughts are resulting in the drying of wells and bore wells leading the farmers to lose hope on them. This has been mainly marked in the case of cotton. The unfavorable price movements for this crop are, to an important degree, the consequence of liberalization of imports of agricultural products. Unlike other crops, especially oilseeds, cotton did not have the benefit of tariff protection against import competition from countries which heavily subsidize their domestic producers.

Narayanamoorthy (2006), in his article titled “State of India's Farmers”, explains through the NSSO data. All India average farm income of the farmers is 11628 and expenditure on cultivation is 8791. Then he benefits 2837 rupees from cultivation. Some of the states have negative net income such as AP, Rajasthan, etc. If All India average annual income of farmer household is deducted from the all India annual expenditure of farmer households, there is a negative income of -7806 rupees. In this way most states have negative income except two or three states. The indebtedness has been increasing all over the states. This shows that farmers are not benefiting from agriculture and not even getting any income from other resources. There is the need for immediate policy measures to protect the farming community, otherwise this would reduce the production and increase food insecurity.

Roy (2007), in this study reveals that transformation in agriculture has seen as drivers of the industrialization in the economic history by supplying food at a lower price, the rise of the tax income from agriculture that aids to develop the infrastructure, create the purchasing power for buying material and machinery, create the profits by reinvesting in industry. An environment induced market failure was the main hindrance to agriculture growth. Environmental impediments confirmed that thorough agriculture desired funds were very costly and unequally dispersed. The achievements of agricultural production procedures after 1947 were due mainly to satisfy this environmental impediment by resources of community outlay and input grants. And the non-fulfillment of policy were because of the circumstance that in several areas, the agricultural obstacle cannot be overwhelmed by these means.

Narayanamoorthy (2007), in his article titled "Deceleration in Agricultural Growth: Technology Fatigue or Policy Fatigue?" explains that, at a fifty third gathering of national development council, Prime Minister Manmohan Singh emphasized that "technology fatigue" is one of the main causes for the sluggish progress of agriculture experienced since the mid-1990s. But the author of this article explains that technology fatigue is not only the reason, even more policy fatigue is the main reason for the decline in agriculture growth in India. Declining productivity in wheat is considered to be technological fatigue, but for many years India has been importing pulses to meet the demand of the nation. In the case of pulses, there was no decrease in the area, but productivity was very less due to the policy fatigue. It is a modest economic reason that no one will spend money in a project that does not offer equitable payment. This is exactly what has been taking place to agriculture in the course of the last 10 years. Farmers were not capable to retrieve at least cost of cultivation on account of cracked pricing policy. Cost of the cultivation of various crops as the price have been growing due to the increase in the labour wage rate, input prices, and miscellaneous costs. Increasing the cost of cultivation is more than the value of production. Farmers might not be persuaded to take on the group of suggested inputs for crop cultivation. Decrease in the usage of different productivity-enhancing inputs clearly would cause to deterioration in produce productivity. Net irrigated area to the total irrigated area has not been increasing. Capital accumulation and investment by the government has decreased over the years.

Meeta (2008), in her study on "Rejuvenating Agriculture with the Help of the Small Farmer", explains that agriculture will be viable for small farmers whenever writing off the loans and increase in the irrigation facilities for dry land areas where most of the small and marginal farmers have the landholding out of total holdings. The farmers are facing problems because of the absence of knowledge on inputs, seeds, and land fertility. For awareness on inputs, these farmers are more or less dependent on private sector organizations. Extra services of government are more or less non-existent. Government's policies failed to encourage the dry land crops such as horticulture, mango trees, and medical plants. Small farms, if providing the necessary awareness inputs, could be the key to an economic improvement in the opulence of farmers.

Padhi (2009), in her study "On Women Surviving Farmer Suicides in Punjab" explains that Punjab is well developed in agriculture and it produces more wheat and rice per acre or hector. The actual situation in Punjab after the 1990s reforms is that, there has been increasing cost of cultivation, decrease in productivity, and decrease in the profits in agriculture. Due to these, most of the small and marginal farmers left the farming and leased out their plots to the large landowners. Due to the acute situations, increasing indebtedness, and humiliation, maximum number of the farmers' suicides have happen in Punjab. After the farmers' suicide, their families face difficult situation. Wives of these farmers face harassment from the banks and local moneylender. Furthermore, women cannot bear the increased health expenditure and education fees for their children. Then they and their children become wage labor and bonded labors.

Deshpande et al. (2010), in their book "Agrarian crisis and farmer's suicides in India" chapter one titled "Editors introduction", explain that in the 1990s, economic reforms occurred in three ways, such as globalization, liberalization, and privatization. The chief agenda is the changes in the larger macroeconomic policies, in which key agriculture factors such as market regulation, credit availability, price support for agriculture commodities, etc. have changed. These led the Indian agriculture into serious distress through the reduced state support to the farmers, especially small and marginal farmers. This again reduced the agriculture production and yield after the 1990s. With declining trends in the institutional credit availability for farmers, the farmers approached for credit

to non-institutional factors such as moneylender and input trade. Declining the net income of the farmers over the years. All above reasons made the farmers into desperation.

Narasimha Reddy et al. (2010), in their article titled "Economic reforms, small farmer economy and agrarian crisis", explain that marginal and small farmers in 2013 accounted for 86 percent of operational holdings and 44 percent of the operated area. All over the developing countries, majority of the farmers are smallholders. More than 85 percent of these farmers constitute less than two hectors. Despite the small farmers who use resources effectively than large farmers, the former face some problems. Small farmers always face excessive operation costs, low negotiating capacity causing in high input cost, and little price for production which leave them with meager profits. Regarding the small farmers accessing credit, insurance impede them from approving the agriculture yield enhancing techniques.

Mohanakumar (2010), in his article titled "Agrarian Crisis and National Commission for Enterprises in the Unorganized Sector", states some of the supply side constrains encountered by the farmers, which were recognized by the NCEUS "National Commission for Enterprises in the Unorganized Sector", following supply side restraints faced by farmers: (i) unskilled labor force, (ii) poor admission to public goods for instance irrigation, electrical energy, and other infrastructure facilities, (iii) imperfect markets for inputs and outputs, (iv) fragile asset base, (v) less access to credit, (vi) negative externalities arising from land and water management, (vii) lack of collectivization (apolitical), and (viii) illiterate or less informed farmer folk about HYV seeds and modern practices of farming,

George and Krishnaprasad (2006), in their empirical study on "Agrarian Distress and Farmers' Suicides in the Tribal District of Wayanad", reveal that three major factors cause to the severe agrarian crisis in the Wayanad district of Kerala. The first one is the crash of the price of agricultural produce; the second is indebtedness; and the third is drought, disease, and depletion of water sources. Unrestricted imports and antagonistic changes in tariff regimes brought in neo-liberal economic reforms promoted by union governments which have caused to a drastic crash in the price of agricultural produce. In Kerala, farmers used to sell products of coffee to the coffee board up to 1992. After 1992, coffee board permitted to the small farmers and medium farmers to sell their products in domestic open

market, where at the beginning, selling of the coffee products in the open marker, farmers got high prices. After that, entry of the private traders coffee farmers got fewer prices in the market, but after refining the coffee, that trader sold it at higher price for the final consumer. The price crack caused in an extreme drop in the income of the farmers. As a result, farmers failed to pay back interest or principal amount on loans on time. Other major factors that hastened the distress were an eruption of crop disease and prevalence of drought conditions.

Bhattacharyya et al. (2013), in their study on "Political Economy of Agrarian Crisis and Slow Industrialization in India", explain the factors which led to the agrarian crises. Agriculture and industry employ the majority of the workforce in the country, but growth in these sectors is not effective. In the Indian case, there is no much shift of the agriculture labors to the industry. Green revolution policies increased the food grains all over the country and also increased the regional imbalances. Since the introduction of neo-liberal reform in 1991, state subsidy declined in fertilizer, food, and credit. Agriculture growth has dropped below the population growth rates; the cost of production in agriculture has augmented; while the selling price of grains have weakened, and there have been a virtual collapse in agricultural technological progress and information distribution systems. It is an important fact that the face of the agrarian crisis has made this sector non-viable and investments decline. The increasing food prices have had a rising effect on the industrial wages in India. Agriculture is home market for the industrial products, but there is less demand for industry from agriculture workforce due to the low production and low income of the farmers. After 1966, Green Revolution, the achieving the positive terms of trade, but benefit from the agriculture was reaped by the rural landed rich farmers.

2.5. Credit and Debt Issues of Farmers

Dantwala (1952), in his article "Agricultural Credit in India-The Missing Link" concludes that the problem to which no thoughtful care has yet been devoted is that of financing basically uneconomic low-income farmers, who do not symbolize isolated phenomena confined to distressed areas or the result of some emergency but are equal with Indian agriculture. In under-developed economies, credit must assist not merely to oil the wheels of a growing concern but to build up the economy, a much more difficult creativity. Its

administration, hence, must go along with an interest in improving the overall economy of borrowers.

Swamy (1980), in his study on "Land and Credit Reforms in India, Part Two", explains that Planning Commission and Raj Krishna Committee in 1977 estimated that total surplus area in the country was 2105 million acres, against which the state governments estimated these to be 5.39 million acres. Then it was declared to be 4.04 million acres, and finally, the area was taken over by the government to be 2.10 million acres, and the actually distributed area was 1.29 million acres to the 0.88 million beneficiaries. The absence of induced policy to effectively implement the land reforms, there is still existing inequalities in the circulation of landholdings if we observe the richest class of farmers, including those affected by the ceiling laws, owned 67 percent of total area in 1954-55. The area owned by this class declined to 61 % in 1960-61 and 54 % of the total area in 1970-77. One important thing is that whenever farmers' revolts and struggles start, governments try to establish committees to implement and distribute land reforms, but after the end of the struggles, they are not implementing any recommendations of the established committees, as in the case of Telangana Peasantry Struggle and Naxalbary Movement in West Bengal. Another significance of insufficiency of institutional credit is to rigorously hinder the productive activities of poor cultivators. Their credit necessities per acre are much bigger than those of rich cultivators because of the better intensity of land use (crop intensity), but credit accessible to them is much lower. It is clear that institutional preference of credit is based on the land, but it obstructs the poor farmers.

Chausse (1982), in his study on "A note on agricultural credit in India", discusses on the, working of the cooperative societies in India. In India, institutional credit increased with progressive level since 1954. In 1953, the institutional credit was 3 percent, but it increased to the 40 percent need of the national agriculture credit in 1974. The cooperative movement in India started to expand the formal credit to the rural farmers, 70 percent of whom depend on agriculture. There were three types of cooperative channels for provision of agriculture credit; short-term credit, medium-term credit, and the other is long-term credit. Cooperative system was established on three tire structure; state cooperative banks at state level, central cooperative banks at district level, and primary cooperative banks at the

village level. Primary cooperative banks directly deal with the farmers, provide them short term and medium term finance and supply them consumer goods and inputs such as fertilizers, plough machines, and sometimes arranging for the marketing of the produce of their members through an affiliated cooperative marketing society.

Mohan (2006), in his article "Agricultural Credit in India: Status, Issues and Future Agenda", explains how the agricultural credit has played a crucial role in the backup of agriculture production in India. Before 1900, farmers for their agricultural credit needs depended on the non-institutional credit like moneylenders. After knowing the problems of the peasants, British India rulers established the cooperatives in some provinces to give loans to the farmers. Thereafter, it covered all the provinces. After the independence, Indian government established the Commercial Banks, NABARD, and RRB (Regional Rural Banks) all over India to give loans to the farmers for their agriculture activities. Over the years, reliance of the farmers on non-institutional credit decreased, and at the same time, dependence on institutional credit increased. The Green Revolution, branded by a more usage of instruments like seeds, chemical manures, pesticides, and other equipment, amplified credit necessities which were delivered by the agricultural monetary institutes. In spite of these struggles, the stream of credit to the agricultural zone disastrously failed to display any considerable progress because of the reality that mainly commercial banks were not altered to the desires and necessities of small and marginal farmers. Then again, they have no funds to reach the anticipated demand.

Ratna Reddy and Galab (2006), in their study on "Looking beyond the Debt Trap", explain the common notion that the reasons for farmers committing suicides are rain fed and indebtedness, and along with these causes, they give some other reasons for suicides. Technology is one of the critical factors for improving land productivity. Green Revolution in 1960 helped improve land productivity in the irrigated areas. During the 1990s, overall land productivity saturated in these regions, after recording growth for more than two decades. This is primarily because of the parameters of the technology itself and the environmental difficulties linked with disproportionate input-intensive farming. Dry land areas were neglected without proper facilities like irrigation and improper utilization of technology due to high cost. Ecological factors declined the quality of land and water

resources. Heavy use of unbalanced and input composition, such as practice of organic and inorganic fertilizers and pesticides, have headed to the deterioration in soil eminence. Socio-cultural factors also headed to suicides. Some of the social factors have negative effect such as increase in education expenditure, health expenditure, cost of living, expenditure on festivals celebrations, and also income received by farmers not matching his expenditure. To get more income from agriculture, farmers are adopting high-yielding seeds and fertilizers and technology with borrowed money. Finally, the farmers are failing to balance between income and expenditure, and they are taking step towards suicides.

Shah et al. (2007), in their study on "Rural Credit in 20th Century India: Overview of History and Perspectives", explain the overall working of the credit structure for cultivation in India. At the time of colonial period, overall credit for farmers and tenants was given by moneylenders and big landlords. These informal creditors used to charge high interest rates and mortgage the assets of the farmers. If farmers or tenants failed to pay the borrowed money timely, these informal creditors used to harass them. During the period 1947-69, formal credit to the rural credit consisted of less than 9 percent, and informal credit consisted of more than 75 percent. After an evaluation of the poorly presentation of cooperative credit institutions in India, it can explain the theoretic case for nationalization of banks in 1969 and certificate its optimistic influence on rural credit and financial improvement. Though these reforms have absolutely enlarged bank success, their influence on the accessibility of reasonable rural credit to the underprivileged and India's regressive regions has been tremendously adverse. Shortage of access to rural credit has undoubtedly been one of the factors contributing towards depressing growth in agriculture in the 1990s, which is viewed today as the main hindrance to the Indian economy.

According to *The Government of India* (2007), over the year's meager presentation of credit cooperatives and regional rural banks, the incapability of commercial banks to reach their goals for agrarian loaning, and the extraordinary cost of rural banking, due to these reasons persistent reliance of agriculturalists on informal credit and the incapability of small farmers to acquire appropriate and sufficient institutional credit. Small and marginal farmer households, which accounted for 80 percent of indebted farmer households,

occupied 51 percent of the total unpaid credit from institutional agencies. Marginal and small farmers' dependency on non-institutional agencies was more than large farmers.

Satish (2007), in his article titled "Agricultural Credit in the Post-Reform Era: A Target of Systematic Policy Coarctation", concludes that over the past one and a half decade, there was a setback of the public strategy objectives of spreading the reach of agricultural credit, given a reasonably price and appropriate credit to rural households (specifically the economically vulnerable households) and overwhelming historic difficulties of inadequate and uneven rural credit markets. The effects of this policy reversal are supported by NSSO's survey. The survey discloses that the portion of institutional credit organizations in the unresolved sum of money payments of the rural households deteriorated by about 7 % points between 1991 and 2002 and was 57 percent in 2002. This is in sharp contrast to the earlier periods, wherein there were gradual increases in each decade. The financial sector liberalization has directed to enervation of the institutional framework for agricultural credit. The rural branch network was identified an outstanding progress after the nationalization of banks in 1969 and the setting up of regional rural banks (RRBs) in 1975. The proportion of rural subdivisions of commercial banks increased from 17.6 % in 1969 to 58.2 % in 1990. After that, it is a level of advanced weakening, as the RBI liberalized the plan for the shutting of rural outlets on the grounds of unviable and absence of advantageous. In percentage terms, it declined from 58.2 in 1989-90 to 51.7 in 1994-95 and further to 44.48 in 2005-06.

Ramakumar and Chavan (2008), in their article "Revival of Agricultural Credit in the 2000s: An Explanation", explain that credit to agriculture dropped in the 1990s compared to the 1980s. Between 2000 and 2006, credit to agriculture increased tremendously compared to that in 1990. In these years, indirect credit (includes the credit to infrastructure, construction of cold storage, agri-trader, etc.) to agriculture has increased compared to the direct credit (includes the credit to the crop loan to farmers, and medium and long-run credit). Further, the agriculture credit to the big farmers was high compared to the small and marginal farmers.

Cole (2009), in his article titled "Fixing Market Failures or Fixing Elections? Agricultural Credit in India", explains that there are powerful theoretic explanations to trust that

legislators will handle properties under their mechanism in order to attain balloting achievement. A loan-level study shows that balloting cycles encouraged credit explosions in agricultural credit in balloting years. Electoral rotations serve as a tool for recognizing the influence of peripheral loans on output, providing proof that enlarged stages of credit from government sector banks do not upset total agricultural production at the state level. After the election year, majority political party give targeted agriculture credit for districts which they win with majority seats and write off the debt from the public sectors banks.

Chavan (2013), in her article titled "Credit and Capital Formation in Agriculture: A Growing Disconnect", explains that there is three major formal credit institution providing agriculture credit in India, which are Cooperative banks, Commercial banks, and RRBs. As per the priority, sector lending commercial banks and RRBs should give 40 percent of the credit for various priority sectors out of their total credit. Out of 40 percent priority sector credit, 18 percent credit should be allocated to agriculture and allied sectors. Since the nationalization of banks, there has been steady increase in the supply of commercial banks Credit for Agriculture in the country. After the economic reforms, the share of agriculture credit in commercial banks declined and also branches in the rural area fell down. There is another situation in increasing the indirect credit (means credit to Agribusiness and Agri-clinics, microfinance institutions) in agriculture rather than direct credit (means credit farmers and producers). The further share of the long-term credit (Long-term agricultural credit shows credit assigned straight to the cultivators/ producers in allied activities for small irrigation, renovation and land improvement, tractors and cultivated machine, etc.) has been decreasing in agriculture credit.

2.6. Agriculture Productivity Issue

Sen (1962), in his article finds that three were three distinguished observation regarding Indian agriculture. Observation one reveals while family labor engaged in agriculture gives an "imputed value" in relation to the dominant wage level ample of Indian agronomy looks unremunerated. In Observation two, "profitability" of farming increases with the size of holding, "profitability" is being estimated by the excess (or insufficiency) of production over costs comprising the imputed value of labor. In observation three, Yield per acre

decreases with the size of holding. This trend with gross output per acre is perceived, more or less strongly, in virtually all the regions studied.

Dayal (1984), in his empirical study on "Agricultural Productivity in India: A Spatial Analysis", examines that overall study on labor, land, and total agriculture productivity have regional variations in India. The overall exploration also reveals that there is possibility for increase in agriculture production in some regions. His study discloses that great yield of agriculture takes place in two distinct circumstances. In Gujrat, South Karnataka, and North West places high agricultural productivity occur due to good irrigation, high purchasing power of inputs, medium density of population, and relatively larger holdings. In Tamil Nadu, AP, and West Bengal, it happens in different situations, due to irrigation, small holdings, high density of population, and extreme level of inputs. Irrigation and high level of inputs are the most important determinants of agriculture productivity level. Likewise, lesser productivity takes place under two dissimilar circumstances. In Rajasthan, central India, Karnataka, and coastal districts of Maharashtra, it is typically due to physical restrictions of territory or inadequate vapour supply. In Eastern Uttar Pradesh, Bihar, and Kerala, it seems to be more because of socio-economic limitations. Here, the excess population burden on the land has caused to very small holdings and high inputs of labor, without analogous improvements in the level of purchased inputs. Thus, an excessive input of labor on small holdings results in falling profits to several inputs but mainly to labor.

Desai et al. (1997), in their article "Determinants of Total Factor Productivity in Indian Agriculture", explain that the slowing down in food grains production in the 1990s is described not only by the sluggish growth of inputs like irrigation and fertilizers, but also by the decreasing role of total factor of productivity. As per a recent study, the involvement of TFP to the growth rate in output, which had climbed significantly to a slight over 40 percent in the Post-Green Revolution period of the 1960s and the 1970s, deteriorated to around 30 percent in the late 1980s.

Besley and Burgess (2000), in their study on "Land Reform, Poverty Reduction, and Growth: Evidence from India", find out a adverse influence of tenancy reform and a affirmative impression of land merging on Agricultural Efficiency in India. Together these

procedures had a bad and important effect on poverty. The other methods namely, ceiling on landholdings and the abolition of intermediaries do not have a substantial effect on agricultural yield. Abolition of zamindars had major influence on poverty, then the influence of a ceiling on landholdings was inconsequential. From this, the authors have concluded that land reforms did not affect the distribution of land and also it appears to have operated generally through changing the prescribed relations in agriculture.

Shourie et al. (2002), in their study on "Bt Cotton: Farmers' Reactions", explain that farmers are cultivating Bt cotton crop. Attentions of productivity are still the primary concern, publicizing is the major power in decision-making and seed traders behave as actual crop guidance counsellor. It might also be specified that harm to crop because of bollworm is significantly less in Bt cotton than non-Bt cotton only under situations of severe pest attack. Moreover, there is not much decrease in insecticide outlay because farmers yet do not differentiate between Bt cotton and non-Bt cotton at the time of sprinkling pesticides.

Ghatak and Roy (2007), in their study on "Land reform and agricultural productivity in India", a review of the evidence", explain that land reform generally talks about reallocation of land from the wealthy to the deprived. Further, it comprises instruction of ownership, operation, rental, sales, and heirloom of land. But in India, land reforms could not be implemented in an effective manner due to lack of political will, except two states of Kerala and West Bengal. Economic argument of implementation of land reforms such as smallholding increases the productivity, and ownership of land increases the productivity than sharecropping. But actually, there is a conflict between inverse size relations over the country among the states and districts. It was affected by the exogenous factors such as political parties' competition on reforms. It seems that tenancy reforms in India have increased the inequalities in operational holdings except for West Bengal. There is another notion that effective implementation of land reforms is possible where left-wing parties run government, and also tenancy reforms where the small farmers are more productive for effective land reforms which is evident in the case of West Bengal.

Kuruganti (2009), in her article "Bt Cotton and the Myth of Enhanced Yields", explains on the myth behind the Bt cotton farming. She reveals the fact through the official data that,

in America before implementation of GM crops, there was the report of increased yield in growth of soybean and cotton. After the implementation of GM crops, there was decreased yield in growth of both crops, while increasing the crop area of both crops under the GM. In the case of China, there was 38 percent of cotton crop production from the Xinjiang province, but for this reason, Bt cotton should not be cultivated compared to the rest of China. Xinjiang's excessive cotton earnings are ascribed to the planting of orthodox varieties with precise characters such as dwarf plant size and initial development, as well as to new agronomic performs, together with high-density sowing, a plastic piece covering and drip irrigation. In the case of India also, it can be observed that rate of yield growth decreased in some states by cultivating Bt cotton. If there is an increase in the yield per hectare in any crop, that is not due to Bt cotton. It is due to the increase in irrigation facilities. Sometimes, climate change also reduces the pests, insects, and use of chemical fertilizers.

Bar and Basu (2009), in their article "Children, Education, Labor, and Land: In the Long Run and Short Run", explain that an increase in land owned by a households, in the beginning results in the children of the household working more, but as land pursues to rise, the labor presented by the household's offspring deterioration. For deprived households, there are imperfections in labor and capital market, and the fact that teen-agers' marginal productivity rises with land holdings consequence in an escalation in child labor as the land increases.

Alejandro et al. (2010), in their article on "Comparisons of agricultural productivity growth in China and India", explain China's Agricultural sector, with TFP (Total Factor Productivity) increasing at an average rate of 3.40 percent after the reforms of the late 1970s and early 1980s. In India, there was the same figure for agricultural Total Factor Productivity growth after the reforms in the late 1980s and early 1990s which was 0.54 percent. Agricultural TFP growth sped up in China after 1979 and in India after 1974, even though China's agricultural sector obviously achieved better than that of India. The key clarification of these variances is that agricultural growth in China profited from more major institutional and policy reforms in agriculture than India. There is some proof that the change of industry in China was also vital for agricultural TFP growth. Manufacture

growth engrossed labor and cut down employment in agriculture, generating encouragement for capital investment and technical change that kept output per worker in agriculture growing at high rates. Smaller amount variations in agricultural policies and in the actives of manufacturing in India caused in sluggish growth in agricultural yield, although policy modifications that sped up economic growth in present years.

Chand et al. (2011), in his article on "farm size and productivity revisits the debates on farm size and agriculture productivity", explains that, there is need to advise policy procedures to speak the identical difficulties of rising yield and growth of agriculture along with enhancing income and living of smallholders in agriculture who establish over the 80 percent of total agricultural households, 50 percent of country side households, and 36 percent of total households in India. The study notices that while the small farm in India is better with regard to product presentation, it is pathetic with regard to creating sufficient returns and maintain a livelihood. Smallholdings below 0.8 hectares do not produce adequate earnings to retain a agricultural household out of poverty in spite of great yield. Nearly 3/4 of small farmers in India will remain below poverty if they do not acquire earnings from non-farming sources. Nurturing income of such farmers by rearranging a sizeable amount outside agriculture and thus nurturing the size of holdings did not function in India and other main Asian countries. One stronger factor contrary to this option is that arising in the size of landholdings comprises lower productivity.

2.7. Land Reform and Issues in the Combined Andhra Pradesh

According to *Government of India, Planning commission* (1966) and Koneru Ranga Rao committee report. (2006). Andhra Pradesh was a combination of three regions viz. Andhra, Rayalaseema, and Telangana. It has been implemented by the AP government to increase the productivity, to distribute the land to landless poor, and to regulate the tenancy land reforms. In Andhra Pradesh, especially numerous legislations have been enacted for equitable distribution of land "1. AP Land Encroachment Act, 1905, 2. A.P. (Andhra Area) Estates (Abolition and Conversion into Ryotwari) Act 1948, 3. The AP (Telangana Area) Tenancy and Agricultural Lands Act, 1950, 4. A.P. (Telangana Area) Abolition of Inams Act, 1955, 5. The AP (Andhra region) Tenancy Act, 1956, 6.The Andhra Pradesh Rights in Land and Pattadar Pass Books Act, 1971, 7. AP Land Reforms (Ceiling on Agricultural

Holdings) Act, 1973, 8. The Andhra Pradesh Occupants of Homesteads (Conferment of Ownership) Act, 1976 etc.), 9. The AP Assigned Lands (Prohibition of Transfer) Act, l977, 10. AP Land Grabbing (Prohibition) Act, 1982". Following are the important Acts in Andhra Pradesh Obsession of rent at 25 percent of the gross produce for irrigated lands, other than well irrigated lands and 20 percent in other cases, fixity of tenure for protected tenants subject to landlord's right to resume land for personal cultivation up to 3 family holdings, (Gov. India Planning commission 1966), to give protection to certain categories of the tenants in the Andhra Pradesh from the unjust evictions. The main provisions of the act are fixation of the maximum rent, minimum period of lease, and procedure for determination of rent (Gov. India, Planning Commission 1966). This is related to both the regions and provides with ceilings on current holdings at 4 family holdings and on future acquisition at 3 family holdings (a family holding varies from 6 to 72 acres).

Parthasarathy and Suryanarayana Raju (1971), in their article on "Andhra Pradesh (Andhra Area) Tenancy (Amendment) Act, 1970", explain that the main provisions of the Amendment Act relate to (1) further reduction of 'fair rents'; (2) constraints on termination of tenancy and qualifications for resumptions (3) pre-emptive rights for tenants. Moreover, it has been described that the magnitude of tenancy in Andhra Pradesh could be judged from the census data of 1961. According to this census date in Andhra Pradesh, percentage of tenants to total cultivators was 21.02, in which pure tenants were 6.28 percent and mixed tenants were 14.74 percent. Out of the total-operated area, pure tenants accounted for 4.22 percent and mixed tenants were 18.19 percent. Total leased-in area of all tenants in the Andhra Pradesh constituted 13 percent from the total operated area. The Deltas of Coastal Andhra had a higher percentage of tenants than Telangana and Rayalaseema. The percentage of tenants in each of the regions was as follows: Coastal North 17.74 percent, Coastal South 28.01 percent, Rayalaseema 20-21 percent, and Telangana 18.53 percent. Tenancy has become a less significant variable to benefit the poorer strata of the society since most of the land owned by the big resident landowners were found to be self-cultivated. Tenancy laws could not exercise to implement the fixed rent on various cultivated land.

According to the article published in Economic and Political Weekly (1984) titled "Andhra Pradesh: Operational Holdings, 1980-81", Andhra Pradesh is one of the states maintaining systematic land records. In that important material to each examination, the amount is accessible in these records. All villages were included in the tabulation of land records. The following items covered were (1) number and area of operational holdings, (2) land utilization, (3) cropping pattern, (4) crop-wise and source-wise irrigated area, and (5) tenancy particulars. In 1980-81, number of operational holdings increased by 15.02 lakhs compared to those in 1976-77 i.e. an increase of 24.4 percent. The operated area decreased marginally by 0.52 lakh hectares or by 0.4 percent. More than 50 percent of marginal operational holdings consisted of 13.1 percent of the area. 2.1 percent of large operational holdings accounted for 19 percent of the total operated area. Small, marginal, and semi-medium operational holdings and the operated area increased in 1980-81. Medium and large holding and the operated area decreased in 1980-81 compared to those in 1976-77. There was an increase in the operational holdings due to the splitting of joint pattas and fragmentation of family holdings. There was further decrease in the operated area due to the land allocated for Sri Ram Sagar project in Adilabad district, Nagarjunasagar project extension, and for houses. The average size of holdings in Andhra Pradesh in 1980-81 was 1.9 hectares compared to 2.3 hectares in 1976-77.

Sridhar (2006), in his article on "Why Do Farmers Commit Suicide? The Case of Andhra Pradesh", accurately expresses that, in Andhra Pradesh, farmer suicides not only happen in drought-prone regions such as Rayalaseema and Telangana, but also take place at delta region of Andhra. Agriculture has become unstable and also unviable especially for small and marginal farmers. Total output per acre of all crops has declined in the AP. Due to the liberalization and globalization, state support for farmers has decreased and also volatility of output prices in the market causing the farmers' desperation. For institutional credits, farmers are depending on the moneylenders. Continual drought in the state does not give any profits for farmers in the cultivation of agriculture. All the above reasons cause to the farmers' suicide in the state.

Koneru Ranga Rao Committee Report. (2006). Koneru Ranga Rao is a Minister for Municipal Administration and Urban Development, Government of Andhra Pradesh and

also Chairman of Land Committee, who was appointed in 2004. This committee submitted the full report to AP Government in 2006. The committee covered the important and pressing land issues. In spite of the exertions of government, merely a small fraction of underprivileged are landowners. This committee mentioned that according to 1990-91 agriculture census in India, around 87 percent of SCs and 65 percent of STs be affiliated with the class of marginal and small farmers. Between 1961 and 1991 census, about 1 Lakh persons from the Scheduled Caste deprived landownership. Only 12% SCs are holding lands. It has declined from 23% in 1961. The percentage of agricultural laborers augmented from 57% in 1961 to 72% in 1991. According to agriculture census of 1995-96, the SCs, who constitute 16 percent of the state's population, control only 7.5 percent of the operated area in Andhra Pradesh. 4,321,376.37 acres of government. Land were distributed so far, of which 979,315.91 acres were distributed to the SCs i.e. only 22% of the total land distributed. Even though fifty years of struggles of government and plentiful legislations on land reforms, access to land to the socially excluded has not enriched. The committee regretted over land administration. Still, they are using the traditional method of land records. Furthermore, most of the areas land records decayed. It has projected that India loses 1.3 percent economic progress yearly because of unclear land titles, which constrain the stream of resources and credit for farming. Panchayat secretaries in the village do not have awareness of the maintenance of land records, measurements of land, and land maps. Thousands of land cases of the deprived are confined in both revenue and civil courts at state level, district level, and sub-district level.

Balagopal (2007), in his article "Land Unrest in Andhra Pradesh-I: Ceiling Surpluses and Public Lands". Explains that more than 40 lakh acres were distributed over the decade to the poor in Andhra Pradesh. It is considered to be the main distribution of land in the country. But most of the proportion of land was transferred to the non-poor. The land would ever be a political issue in the 21st century. In the third world countries, issue of land is raised by the communists, but the era of communism is in decline since 1990's. All the governments pretended that land is important for poor for their sustainability and their upliftment, but the Andhra Pradesh government announced that there was lack of land to distribute to the poor. But the interesting thing is that AP government assigned land for the industries and business persons through special economic zones (SEZs), for which they

forcefully evicted the beneficiaries from land reforms and also surplus government land. In the Mudhigonda Mandal of Khammam district in July 2007, some of the poor landless people started agitation with help of the communist parties for land to construct a house. But Congress government brutally opened fire on the agitated people, in which 7 people died. Earlier, whatever land allocated to the landless people were waste, uncultivable, and infertile land. In several cases, even this distribution has not translated into reality. Nobody was actually placed in possession of the land. Both Chandrababu Naidu and Rajashekar Reddy worked as chief ministers of Andhra Pradesh. They acted as pro-poor, but in reality, they owned hundreds of acres of land above the ceiling limits and allotted thousands of acres of land for the SEZs at the cost of the poor.

Chapter III

Changing Context of Land Holdings in India

3.1. Introduction

Human beings are dependent on land-related activities such as agriculture in which cultivation of food grains, horticulture, fishing, etc. is done. In the production process of the economy, 'Land' is one of the major factors among the four factors of production, which are land, labor, capital, and entrepreneurship. Here, it can be observed that the distribution of the land among people is not equal across the world. A small proportion of people are controlling a larger portion of land by making the rest of the people as slaves, bondage laborers, sharecroppers, and tenants. Inequalities in the distribution of land existed all over the world based on class, race and gender etc. One may observe that distribution of land in the Indian context is the same as (in the case of class, gender) the rest of the world, but in India land has been distributed according to caste and not class, in which upper caste people have more land even though their proportion in population is less in the society. The caste groups who mostly live in the rural areas are dependent on agriculture-related activities and caste-based occupations for their livelihood since they have less proportion of land. At the time of independence in India, inequalities existed in land holdings, starvation, and uncertainty among the people.

3.2. Land Legislation Policies in India during the Colonial Period

British viceroys in India had implemented three types of the land revenue policies after occupation of the Indian Territory.

1) Zamindari System (Permanent Settlement Act 1793).
2) Ryotwari System.
3) Mahalwari System.

i) Zamindari system (permanent settlement act 1793).

- Zamindari system was familiarized by Cornwallis in 1793 through the permanent settlement act.

- British rulers had given the rights to zamindars to accumulate the land revenue from the farmers. Zamindars held the land in perpetuity at the fixed rate of tax.
- It was familiarized in provinces of Bengal, Bihar, Orissa, and Varanasi.
- During the British India period, the role of the zamindars was as rent collectors and also assistance for British rulers in the matter of increasing the British's political dominance across the country
- Zamindars appointed their assistants to collect tax revenues.
- Zamindars used to collect more tax revenue from the farmers more than the fixed tax set by the East India Company government
- The total amount was divided into 11 parts. 1/11 of the share belonged to Zamindars and 10/11 of the share belonged to East India Company (Sarkar 1989, pp.24).

ii) Ryotwari system

- Ryotwari System was introduced by Thomas Munro in 1820 when he was the governor of Madras.
- In this system, tax revenue was reduced from 1/2 to 1/3 and tax revenue was not based on the gross produce of the land, but based on the quality of the land.
- Munro surveyed all the village lands and classified them as different parts based on the quality of the land.
- Ryotwari system had prevailed in Madras, Bombay, and Coorgh provinces of British India and parts of Assam.
- In Ryotwari System, the ownership rights were given to the peasants. However, the taxes were collected by the British Government directly from the peasants.
- The revenue rates of Ryotwari System were 50 percent where the lands were dry and 60 percent for irrigated land.
- Village charts with precise border lines, cataloguing of the top soil, and the names of the occupants were sensibly collected and conserved, and the revenue was measured on each occupant (Panday 2008).

iii) Mahalwari system

- The Mahalwari system was introduced in 1822 with the estate or "mahals" proprietary bodies where land belonged jointly to the village community technically called the body of co-sharers.
- Their head was called the Lambardar, who used to sign an agreement with the government to pay the revenue on behalf of the villagers.
- It was introduced in Central Province, Agra, Punjab, Gangetic valley, North-West Frontier, etc. in British India.
- In this system, the land had been divided into Mahals. Each Mahal comprised of one or more villages.
- Ownership rights were assigned to the peasants, and the village committees were entrusted with the responsibility for the collection of taxes.(Sarwar 2012)

  During the colonial period among the three land systems, ryotwari system was better than reaming lands system, because farmers paid their taxes directly to the government (ibid.).

3.2.1. Land Reform Policies in India after Independence

In 1948, Indian National Congress appointed a committee with J.C. Kumarappa as the chairman to solve problems and to make an in-depth study on Indian agriculture. Following the 1948 Kumarappa recommendations, the Indian government initiated land reforms in different stages across the country.1) Abolition of zamindars; 2) ceiling on the land holdings; 3) distribution of the holdings to landless poor; 4) Tenancy reforms; and 5) consolidation of holdings. The main objectives of the land reforms were to reduce the disparities in the land holdings by distribution of the surplus land to the land- less poor, to improve the production of food grains and productivity, to legitimize the tenancy and register the tenancy in the panchayats, to reduce the poverty and increase the social development by reducing social inequality, to increase the participation of the people in the economic improvement of the country and also to improve the condition of the people, and to protect the tribal land by not allowing outsiders

Abolition of intermediaries

During the British rule existed intermediaries system between peasant and state, to collect the land rent and share in the crop. These intermediaries had different names in different places across the country like Zamindars, Jagirdars, Inamdars, jotedars, and Talukdars. These intermediaries had dominated rural agriculture sector and also used to exploit the peasants by the time of Indian independence. In this regard Indian government decided that, to remove intermediaries in control of ownership. All the state governments in India had passed bill for the elimination of intermediary tenures in the 1950s, even though the features and results of such legislation differed from state to state. Some of the state governments such as West Bengal and Jammu and Kashmir governments made legislation simultaneously on eradication of intermediaries and ceilings on land holdings. Some state governments in the country permitted the intermediaries to preserve the land for their personal cultivation**.**

Tenancy reforms

At the time of independence, tenants existed predominantly on the cultivation of land. Tenants at that time were facing lack of protection since there existed oral tenancy where the landlord used to dominate on the tenant. Tenants used to work on the rented land and also landlord's lands. In the first five year plan (1951-56) had contained firstly authoritative focus on national tenancy reform policy, in the Plan safeguard suggested for the tenants, tenancy should be for periods of 5 to 10 years and that rent should not exceed the level of 1/4 to 1/5 of the gross produce (Appu, 1975). In order to protect the tenants, during the 1960s and 1970s most of the states in the country put an end to the tenancy, and some states gave protection to the tenants by the legislation. Some of the states gave proprietary rights of tenants on rented land. As a result, the landlords dispossessed the tenants from the land without any indication, and most of the tenants became agricultural laborers. The State of West Bengal recognized share-croppers as tenants only with effect from 1979 (Chatterjee and Rudra 1989). Till September 2006, 125.85 lakh tenants were conferred the ownership rights at all India level through the tenancy reforms over an area of 167.16 lakh acres. In combined Andhra Pradesh, 1.07 lakh tenants were conferred the

ownership rights with an area of 5.95 lakh acres (Ministry of Rural Development, Govt. India 2006-07 annual report).

Ceilings on land holdings

The period 1951-71 marked the second phase of land reforms in India. After the abolition of intermediaries in the first phase, reforms were mainly concentrated on the imposition of ceiling on the land holdings across India. In 1955, planning commission appointed a panel to assess the improvement of the implementation of land policy in India. The panel suggested putting a limit on the family land holdings, where maximum land holding should not exceed three times of economic holding. Payment of reward to families from which land had to be taken should be total to 25 percent of market value (Das 2000). After receiving the recommendations, all states in the country enacted ceilings on land holdings, and various states enacted different ceiling limits on landholdings. For example, Orissa (8 ha to 32 ha), Andhra Pradesh (2.5 ha to 30 ha). When Indira Gandhi was the Prime Minister, she reduced the ceiling limits on land holdings and distributed surplus gained from the ceiling limit to the rural landless poor, Scheduled Castes, Scheduled Tribes, and most other backward castes. Even through imposed ceiling limit on land holdings, most of the landlords escaped from the impositions and transferred their lands to their relatives and servants. Some of the states that failed to impose the ceiling limit due to the village officials and Mandal revenue officers favored to the landlords. (Deshpande2007). From the table 3.1 below, implementation of land ceiling acts can be observed, since beginning of land ceiling acts in various states from 1961-62 till September2006. The overall amount of land stating surplus in the entire country is 68, 72,824 acres, out of which about 60, 27, 180 acres were taken possession of and 48, 99, 893 acres were distributed to 54, 01, 232 beneficiaries. Out of total beneficiaries, scheduled caste beneficiaries were 21, 02,729 and out of total distributed land, 18, 29,876 acres were distributed to SCs. Scheduled Tribe beneficiaries were 8, 57,027 and distribution of area to the STs were 7, 72, 906 acres. Other beneficiaries were 24, 37,727 and distribution of area to them were 22, 89, 844 acres.

Table 3.1 Implementation of land ceiling act all over India till September 2006.

Area declared surplus	Area taken possession	Area distributed to individual beneficiaries	Total no. of beneficiaries	Scheduled caste beneficiaries		Scheduled tribe beneficiaries		Other beneficiaries	
				N0.	Area in acres	No	Area in acres	No	Area in acres
68,72,824	60,27,180	48,99,893	54,01,232	21,02,729	18,29,876	8,57,027	7,72,906	24,37,727	22,89,844

Source: Ministry of Rural Development, Govt. India 2006-07 annual report.

Consolidation of Holdings

In India, most of the farm holdings were very small and most of the farmers had small plots of land in various places. Then it led to wastage of time for farmers to go to different parts of land, causing to boundary disputes, hindering the use of the modern machines like tractors in the fields. To make the agriculture more productive and reduce the problems Indian government initiated the consolidation of holdings, it means to bring jointly all plots of land of the farmer into one compact, which are spread all over the village. In the programme all land in the village is firstly combined into one compact block and it is divided into smaller portions and assigned to every individual farmer. But it did not succeed in implementation as expected in the policy except in the two states such as Punjab and Haryana. Most of places in the country farmers have sentiments and beliefs, where they are not ready to leave what their ancestries have given them. Village revenue officers were not skilled or trained in the process. Since inception till September 2006, an area of 1739.01 lakh acres was consolidated all over the country. The State-wise position of consolidation of land was highest in Uttara Pradesh with 587 lakh acres followed by Maharashtra with 527 lakh acres. In combined Andhra Pradesh, a total of8.18 lakh acres land was consolidated (Ministry of Rural Development, Govt. India 2006-07 annual report).

Bhoodan and Graham Movement

Bhoodan (land gift) movement began by Vinobha Bhave, he started this movement in 1951 from Pochampally village of Telangana area by getting 100 acres of land, on the way to ask the landlords to hand over their land to him for equal distribution of land to landless poor (Shah, G. 2004 pp.52). He entreated all the landlords of the villages to give him 50 million hectares of land to distribute all over India. With this request, he journeyed all over country approximately 82,000 km., Out of a total area of 21.59 lakh acres of Bhoodan land

donated, 16.57 lakh acres were distributed (Ministry of Rural Development, Govt. India 2006-07 annual report). In combined Andhra Pradesh out of total 2.52 lakh acres of Bhoodan land donated, 1.10 lakh acres were distributed, with a balance of 1.42 lakh acres for distribution. A total of 42,199 beneficiaries acquired land on account of the Bhoodan movement. Out of the total, 12,832 were members of Scheduled Tribes, and 4,538 were Backward Caste people and Others (Govt. AP Land Committee Report, 2006).

Protection of land belonging to the SCs, STs, and other marginalized communities

Central government mentioned in the land reform policy that, protection and revamp of poor peoples' lands should be the highest priority in the land reform program of the land administration mechanism in the states, and also state governments should use this policy as providing procedures to plug the loopholes in prevailing state laws on the subject and shall take steps to (National land reform Policy 2013):

i. Physical certify all the lands granted to SCs and STs by including landless poor, local youth and Self-Help Groups of women, under the complete direction of Revenue Authorities

ii. All cases of alienation or unauthorized occupation of lands in violation of prevailing laws should acknowledge and the required steps have to be taken to revamp the land to return to the poor

iii. Another important thing is that in scheduled tribe areas land transfers from tribal to non-tribal is banned

i) Review existing laws and policies

Certain problems existed in the possession and title of the ScheduledCastes and Scheduled Tribes land holdings. In order to correct these issues, the states shall review the prevailing laws and rules relating to alienation/assignment of land pertaining to Scheduled Castes and Scheduled Tribes and take required stages for eliminating the constrictions, if any, in protecting and reinstating the assigned and other lands pertaining to SCs and STs.

ii) Land Development

Development of land belonging to marginalized groups was one of the prime policies by the MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Scheme), Watershed Management, and NABARD (National Bank for Agriculture and Rural Development) which helped rural infrastructure improvement fund etc. in a particular time. All the state governments insisted the land development works in the lands of the poor. In land Development, the first priority was given to SCs, STs, and provisions of irrigation facilities to the SCs and STs Land. Land development and provisions of irrigation facilities for the weaker section increased the productivity of production and also increased income through the farming.

Scheduled tribes and access to land

a) Land transfer regulations: In the country, most of the tribal land was alienated to other castes through various ways such as selling off their lands and grabbing land from tribal by political leaders, business persons, and so on. In order to restrain the tribal land alienation, the government brought up the Panchayat (Extension to Scheduled Areas) Act (PESA), 1996. In this act Gram Sabha and Panchayats have the authorities to stop alienation of land in the Scheduled Areas and take proper action to reinstate any alienated land of Scheduled Tribes.

All the states shall take steps to observe the land administration machinery in tribal areas in concern of the welfare of Scheduled Tribes and are familiar with all protective enactments/judgments etc. to stop passing of awards in favor to non-tribal

b) Forest rights act: The government of India has initiated the Forest Right Act for getting the ownership on forest land. The process of pointing out hamlets or settlements for the intention of the Forest Rights Act (FRA) 2006 shall be identified under Rule 2A of the FRA. Primary significance was offered to Community Forest Resource Rights [Sec.3 (1) (i)] of FRA. All villages/hamlets shall assert and attain Community Forest Resource (CFR) Rights and in case there are villages/hamlets who do not claim or obtain CFR rights, it shall be mandatory on the District Level Committee to record in writing the causes thereof.

All state-level appointed committees review the above information under the FRA act. It shall also be observed efficiently that the process of shaping and approval of all the rights

under Sec.3 (1) and (2) category wise ranging from 1) Individual rights, 2) community rights, 3) rights of ownership, use, and disposal of Minor Forest Produce, 4) rights in and over disputed land, 5) rights of settlement and conversion of all forest villages, unsurveyed villages, and other villages in forest whether recorded notified or not in to revenue villages, 6) rights to community tenures and habitat rights to especially Vulnerable tribal groups, 7) rights of conversion of Pattas or leases or grants (Draft national land reform policy 2013).

Land Rights to Women

Across the country, women comprise approximately 40 percent of total agrarian labor force. Moreover, 75 % of all female and 85 % of the rural female labor force in the country are relied on agriculture. Additionally, countryside households are progressively becoming de-facto female-headed households, because of widowhood, abandonment, or out migration of head of family. The 11th Five Year Plan acknowledges that agrarian output is progressively getting relied on the capability of women to task excellently as farmers and powerfully recommends for guaranteeing energetic (rights being rights not just in law but also in practice) and self-governing (rights being rights that women enjoy in their own capability and of those enjoyed by men) land rights for women (national land reform policy 2013).

3.2.2. Land Holding Pattern In India.

All the states in the country implemented the land reforms to reduce the inequalities in the land holdings. According to agriculture census (2010-11), land holdings are classified into5 categories, in which Marginal landholdings (Below 0.5 ha. – 1.0 ha), Small (1.0 – 2.0 ha.), Semi-Medium (2.0 – 4.0 ha), Medium (4.0 - 10 ha), Large (above 10 ha). From the table 3.2 below, it can be observed that percentage distribution of the households and land owned by them, by category-wise in all over India. It can be noticed that landless households had been fluctuating from 1971-72 to 2013. Highest percent of the distribution of households were located in the marginal category of ownership holdings. Percentage distribution of households and percent of the area owned in the marginal ownership holdings had been increasing, in which 1971-72, 53.0 percent marginal households controlled the 9.8 percent of total area, in 2013, 29.8 percent of the total area was being

controlled by the 75.4 percent marginal land-owned households. During 1971-72, 68.5 percent marginal and small land-owned households controlled only 24.5 percent of total area, in 2013, 85.4 percent of land-owned households controlled 53.3 percent of total area. Percentage of semi medium, medium and large landholding households' had been decreasing over the years.

Table 3.2 Percentage of land owned households and area owned by the size groups at all India level.

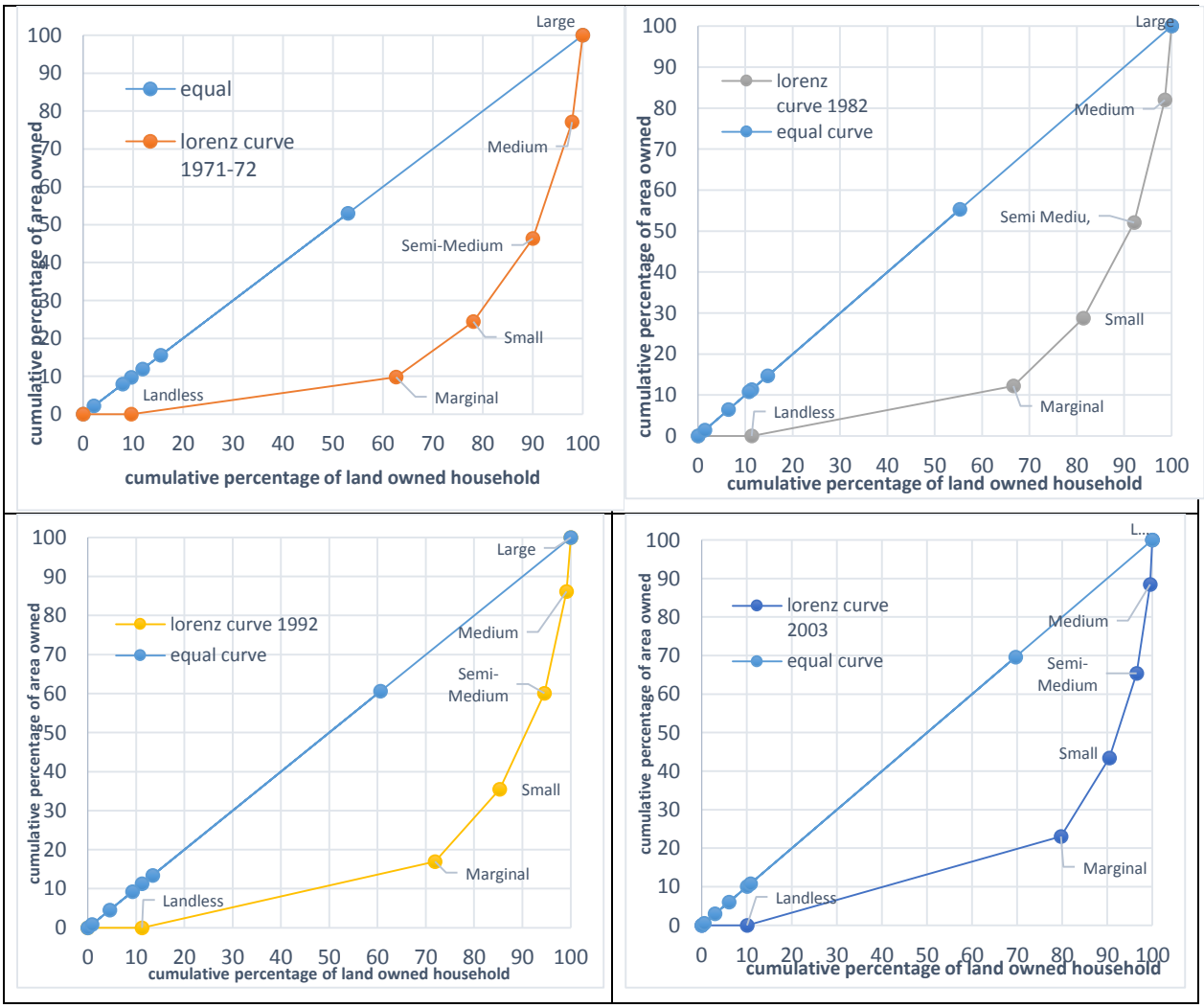
	1971-72		1982		1992		2003		2013	
Size wise	%.land owned hoh.	% area owned	%.land owned hoh	% area owned	%.land owned Hoh.	% area owned	%.land owned hoh	% area owned	%.land owned hoh	% area owned
Landless	9.6	0.0	11.3	0.0	11.3	0.0	10.0	0.0	7.4	0.0
Marginal	53.0	9.8	55.3	12.2	60.6	16.9	69.6	23.0	75.4	29.8
Small	15.5	14.7	14.7	16.5	13.4	18.6	10.8	20.4	10.0	23.5
Semi - medium	11.9	21.9	10.8	23.4	9.3	24.6	6.0	22.0	5.0	22.1
Medium	7.9	30.7	6.5	29.9	4.5	26.1	3.0	23.1	1.9	18.8
Large	2.1	22.9	1.4	18.0	0.9	13.8	0.5	11.6	0.2	5.8
total	100	100	100	100.0	100	100	100	100	100	100
Ave.size.hol	1.53		1.28		1.01		0.73		0.59	
Gini coefficient	**0.68**		**0.67**		**0.66**		**0.65**		**0.59**	

Source: 59th and 70th NSSO livestock and household survey Data.

The existence of the higher percentage of marginal and small land-owned households means that, there is predominately presence of scheduled caste, scheduled tribes and OBC land-owning households across the country. But area distributed to the small land holding households has been increasing over the years. Furthermore, in 1971-72, 2.1 percentage of large landholding households controlled the 22.91 percent of the total area, in 2013, 0.2 percentage of large land-owned households controlled 5.81 percent of total area. But over the years, the percentage of semi medium, medium, and large land-holding households and the average size of holdings had been decreasing. Increase in the population led to more fragmentation of land in small pieces, and the landlords migrated to urban places by selling their land in pieces. Another important thing is that breaking of the joint family system and formation of nuclear family system also led to the increase of marginal and small land holding households.

We have used the Gini coefficient and Lorenz curves to measure the inequality among the size groups. In India, inequalities in distribution of land among size group of the households still exists. It is being shown by the Lorenz curve, which is far away from the equality curve over the period. Through the Gini coefficient values, it can be observed how much inequality existed among the size groups. Gini coefficient value in the 1971-72 was 0.68, in 2013 it was 0.59. It is being indicated that, these land reforms could not affect more to reduce the inequality existed among the size groups across the country, even though the implementation of land reforms as flagship program of central and state governments across the country through the redistribution of land, land ceiling,.

Figure 3.1 Lorenz curve to measuring the inequality among the size groups at all India level from 1971-72 to 2013.



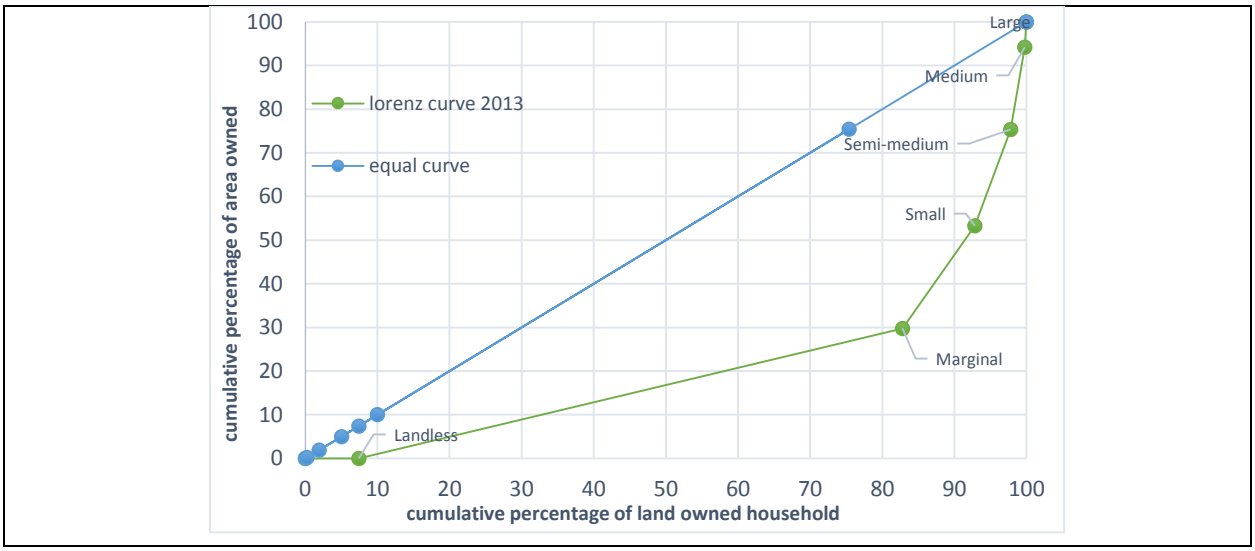


Table. 3.3 Percentage distribution of Operational holdings and operated area among the size groups all over India.

Social groups	1970-71	1980-81	1985-86	1990-91	1995-96	2000-1	2005-06	2010-11
Marginal	51.0* (9.0)**	56.4 (12.0)	57.8 (13.4)	59.4 (15.0)	61.6 (17.2)	62.9 (18.7)	64.8 (20.2)	67.1 (22.5)
Small	18.9 (11.9)	18.1 (14.1)	18.4 (15.6)	18.8 (17.4)	18.7 (18.8)	18.9 (20.2)	18.5 (20.9)	17.9 (22.1)
Semi-Medium	15.0 (18.5)	14.0 (21.2)	13.6 (22.3)	13.1 (23.2)	12.3 (23.8)	11.7 (24.0)	10.9 (23.9)	10.0 (23.6)
Medium	11.2 (29.7)	9.1 (29.6)	8.1 (28.6)	7.1 (27.0)	6.1 (25.3)	5.5 (24.0)	4.9 (23.1)	4.2 (21.2)
Large	3.9 (30.8)	2.4 (23.0)	2.0 (20.1)	1.6 (17.3)	1.2 (14.8)	1.0 (13.2)	0.8 (11.8)	0.7 (10.6)
Total	100 (100)	100 (100)	100 (100)	100 (100)	100 (100)	100 (100)	100 (100)	100 (100)
Average. Size of holdings	2.28***	1.84	1.69	1.55	1.41	1.33	1.23	1.15
Gini coefficient	0.62	0.60	0.59	0.58	0.56	0.55	0.55	0.54

Source: Agriculture census 2011. * shows the percentage of operational holdings, ** Numbers in parenthesis shows that percentage of operated area, ***Average size of holdings is in hectors.

From the above table 3.3, percentage distribution of the operational holdings and operated area among the size groups can be noticed. There is difference between the ownership holding[1] and operational holdings[2]. By1970-71, 51.0 percent marginal operational holdings constituted the 9.0 percent operated area[3], 18.9 percent small operational holdings held the 11.9 percent operated area, while 15.0 percent semi- medium, 11.2 percent medium, 3.9 percent large operational holdings constituted 18.5 percent, 29.7 percent, 30.8 percent operated area of total operated area respectively. Over the period, the marginal and small operational holdings and operated area have been increasing. The operated area is fluctuating over the period under the semi medium operational holdings. Medium and large operational holdings and operated area have been decreasing over the period.

Average size of operational holdings also decreased from 2.28 hectors in 1970-71 to 1.15 hectors in 201-11. Average size of holdings are becoming the uneconomic holdings among the size groups. It took place due to more increase in the operational holdings than the operated area.

Inequality in the distribution of operated area can be observed among the operational holdings form 1970-71 to 201-11 by studying the Gini coefficient values and Lorenz curves. Gini coefficient value in 2010-11 was0.54, while in 1970-71 it was 0.64. Over the period inequality in the distribution of operated area among size group operational holdings have been decreasing, but this inequality still persisted.

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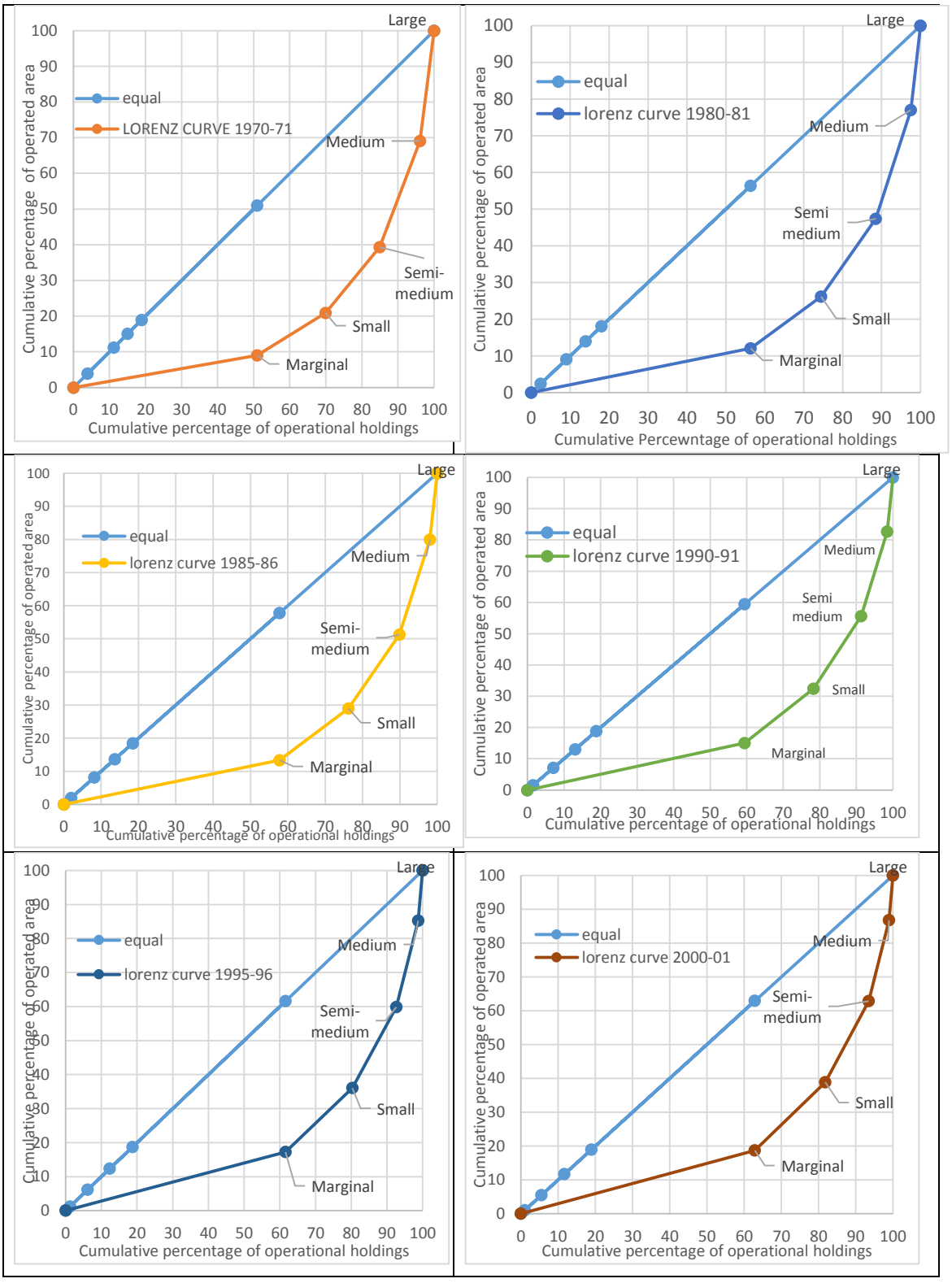
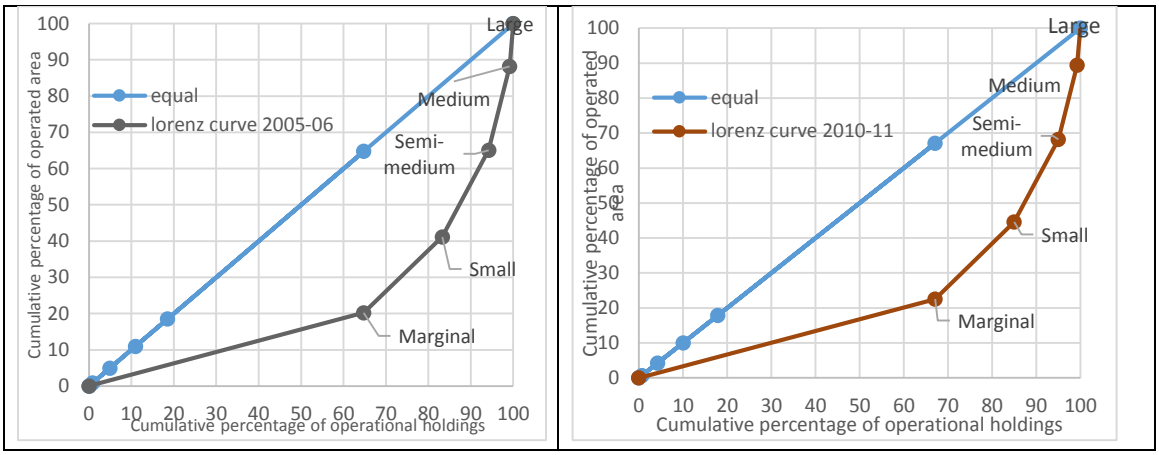
[1] Land owned by the household, i.e., land on which the household had the right of permanent heritable possession with or without the right to transfer the title, e.g., Pattadars, Bhumidars, Je Bhumiswamis etc. (Nsso 7^{0th} round).

[2] Household operational holding constitutes of all land that was used wholly or partly for agricultural production and was operated (directed/managed) by one household member alone or with assistance of Others, without regard to title, size or location (Agriculture census 2011).

[3] Operated area includes both cultivated and uncultivated area. Part of the operated area puts into the agricultural production during the reference period. If, for instance, an operational holding consists of four survey numbers out of which one survey number is put to non-agricultural uses, the total area of the operational holding will be equal to the total geographical area of all the four survey numbers (agriculture census 2010-11).

Figure 3.2 Lorenz curve to measuring the inequality among the size groups at all India level from 1980-81 to 2010-11.





From the table 3.4, the percentage of landless households across the country can be identified from various land and livestock holding surveys of NSS from 1971-72 to 2013. At the all India level, it was seen that the percentage of landless households increased from 1971-72 to 1992 and thereafter percentage of landless households decreased to 10 percent in 1992 and 7.41 percent in 2013.

Table 3.4 Percentage of landless households in the major states of India.

State	Percentage of landless households				
	1971-72	1982	1992	2003	2013
Andhra Pradesh	7.0	11.9	11.9	14.3	15.93
Telangana	-	-	-	-	6.19
Assam	25.0	7.5	13.4	8.1	7.42
Bihar	4.3	4.1	8.6	7.6	5.33
Jharkhand	-	-	-	-	1.35
Gujrat	13.4	16.8	16.3	13.6	12.50
Haryana	11.9	6.1	3.7	9.2	1.05
Himachal Pradesh	4.4	7.7	10.4	15.0	14.23
Jammu & Kashmir	1.0	6.8	2.8	3.3	3.06
Karnataka	12.5	13.7	10.0	15.0	14.23
Kerala	15.7	12.8	8.4	4.8	9.35
Madhya Pradesh	9.6	14.4	15.2	12.1	5.56
Chhattisgarh	-	-	-	-	8.23
Maharashtra	10.4	21.2	19.6	17.7	12.84
Odisha	10.6	7.7	13.8	9.6	5.39
Punjab	7.1	6.4	5.9	4.6	6.84
Rajasthan	2.9	8.1	6.4	5.7	3.89
Tamil Nadu	17.0	19.1	17.9	16.6	8.84
Uttar Pradesh	4.6	4.9	4.9	3.8	3.32
West Bengal	9.8	16.2	11.0	6.2	6.55
NE states	-	-	-	-	**6.07**
Group of UTs	-	-	-	-	**30.18**
All India	**9.6**	**11.3**	**11.3**	**10.0**	**7.41**

Source: 70th NSSO livestock's and household survey Data

One of the important things observed from the above table is that at the second phase of land reform implemented in the country in the year of 1970-71, from 1971-72 to 1992, the percentage of landless households increased. But after 1992, all major states observed a decreasing percentage of landless households except Andhra Pradesh, Punjab, Kerala, and Himachal Pradesh, where the percentage of landless households increased.

3.3. Distribution of Land Holding Households among the Social Groups

The table 3.5 below depicts percentage of land-owned households and area owned by the social groups across the country, during the two periods of NSSO rounds 2003 and 2013. during 2003, 19.8 percent Scheduled Caste households owned 8.8 percent, 8.5 percent Scheduled Tribe land owned 10.6 percent, 39.7 percent of Other Backward Classes households owned 43.1 percent, and 32.1 percent Others households owned 37.1 percent of the total area. One important thing that can be observed except Scheduled Castes, percent of the area owned by the remaining social groups is more than the percent of landholding households. SCs historically were deprived of having sufficient land for their livelihood.

Table 3.5 The Percentage distribution of ownership holdings and area among the different social groups at all India level.

	NSSO 59 ROUND 2003					NSSO 70ST ROUND 2013				
Indicators	SC	ST	OBC	Others	All	SC	ST	OBC	Others	All
Percentage of Land owned. households	19.8	8.5	39.7	32.1	100	20.06	11.89	44.82	23.23	100
Percentage area owned	8.8	10.6	43.1	37.1	100	9.23	13.06	45.68	32.03	100
Average area (ha) owned per household	**0.249**	**0.708**	**0.611**	**0.658**		**0.272**	**0.650**	**0.603**	**0.816**	
Gini coefficient	**0.11**					**0.15**				

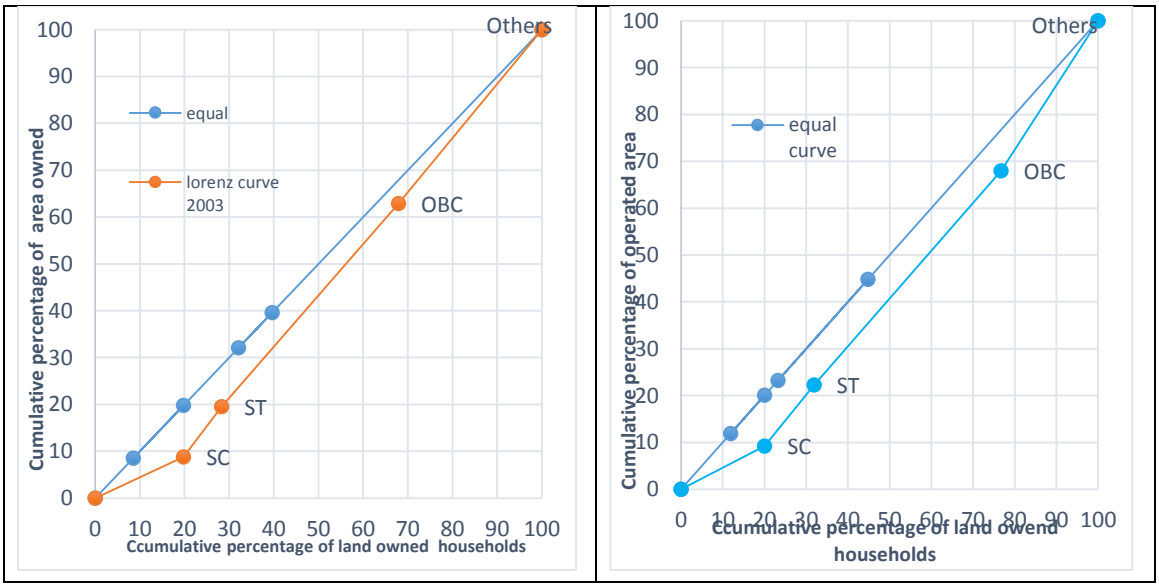
Source: 59th and 70th NSSO livestock and household survey Data.

Average area owned per household was highest for the Others with 0.658 hectors, and average area owned per household was lowest for the Scheduled Caste with 0.249 hectors, followed by the other backward classes and scheduled tribes. The average size of holdings

for STs and Others at all India level decreased in 2013 compared to 2003 NSSO round. Except for scheduled castes, the remaining socialgroups' average size of holdings is more than the national average size of holdings. And also it was seen in 2013 NSSO round and percentage of area, and landholding households increased for all social groups except Others, but percent of area increase was less among the SCs compared to STs and OBCs.

From figure 3.3, it can be seen that Lorenz curve is far away from the equal curve of distribution among the social groups. Gini coefficient values had been increasing from 2003 to 2013, which was0.11 to 0.15. But it was quite contrast to the result of table.1, where inequalities had been decreasing among the size groups. Here in case of the social groups it increased. Redistribution of land to scheduled caste households took place after the independence but they are not economic holdings. Hence they remained merely as agriculture laborer than cultivators.

Figure.3.3 Lorenz curve to measure the inequality among the social groups at all India level from 2003 to 2013.



From the table 3.6 below, distribution of operational holdings and operated area among the social groups can be noticed from 1980-81 to 2010-11. By 1980-81, 11.3 percent SCs operational holding households constituted only 7.0 percent operated area and 7.7 percent STs operational holding households constituted the 10.2 percent operated area, while 81.0

percent other operational holding households controlled the 82.0 percent operated area of total operated area. By 2010-11, 12.4 percent SCs operational holding households held 8.7 percent operated area, and 8.7 percent STs operational holding households held 11.4 percent operated area, while 79.0 percent other operational holding households' control 79.0 percent of operated area of total operated area. Over the period distribution of the operational holdings and operated had been increasing among the SCs and STs compared to Others. Another important thing was that, except SCs, percent of operated area of STs and Others was more than the percent of operational holdings of these caste groups. Shifting of the operational holdings and operated area towards the SCs and STs, it reflected that land had been transferring towards them. We can know the inequality among the social groups through the Lorenz curves and Gini coefficient. Gini coefficient value in 1980-81 was 0.024, in 1985-86 it was 0.028, in 1990-91 it was 0.02, in 1995-96 it was 0.027, in 2000-01 it was 0.028, in 2005-06 it was 0.020, and in 2010-11 it was 0.017.

Table 3.6 Percentage distribution of Operational holdings and operated area among the social groups all India

Social groups	1980-81	1985-86	1990-91	1995-96	2000-1	2005-06	2010-11
SC	11.3* (7.0)**	12.4 (7.7)	12.6 (8.0)	12.7 (8.2)	12.8 (8.2)	12.4 (8.4)	12.4 (8.7)
ST	7.7 (10.2)	7.9 (10.5)	8.1 (10.8)	8.2 (10.7)	7.8 (10.4)	8.0 (10.7)	8.7 (11.4)
Others	81.0 (82.8)	79.7 (81.8)	79.3 (81.2)	79.1 (81.1)	79.3 (81.4)	79.6 (80.9)	79.0 (80.0)
Total	100 (100)	100 (100)	100 (100)	100 (100)	100 (100)	100 (100)	100 (100)
Gini coefficient value	0.024	0.028	0.027	0.027	0.028	0.020	0.017

Source: Agriculture census 2011. * shows the percentage of operational holdings, **Numbers in parenthesis shows that percentage of operated area.

3.4. Agriculture Production and Area at All India Level.

Every country's economic performance is dependent on the agriculture performance because a large number of the rural and urban people depend directly or indirectly on agriculture. There are other two sectors such as industry and services performance linked to the agriculture sector. All these three sectors are interdependent on one another. Whatever is produced in agriculture is distributed to the remaining two sectors so that such

products are consumable. Products of the industry and services are used in agriculture as an input for food grains and commercial crops production. From the table 3.7 below, it shows the performance of Indian agriculture from 1950-51 to 2015-16. Before going to examine the compound annual growth rate (CAG) of various products such as commercial and noncommercial agriculture products, there is a need to divide the Indian economy into three parts. First, it is the performance of the growth of agriculture production before green revolution period (1950-51 to1959-60), second, it is the green revolution decades (1960-61 to1989-90) and third, it is the growth of the performance of agriculture production of principal crops after the new economic policy (1990-91 to 2015-16). Before the green revolution, all commodities were reregistered in the production of high positive compound annual growth rate per annum. After that compound annual growth rate of all the food grains which included the rice, wheat, coarse cereals, total cereals, pulses, total oilseeds, and commercial crops such as cotton, sugar cane, and tobacco had been fluctuating during the period of 1960-61 to 2015-16.

Table.3.7 Compound annual growth rate of production of principal crops at all India level (in %).

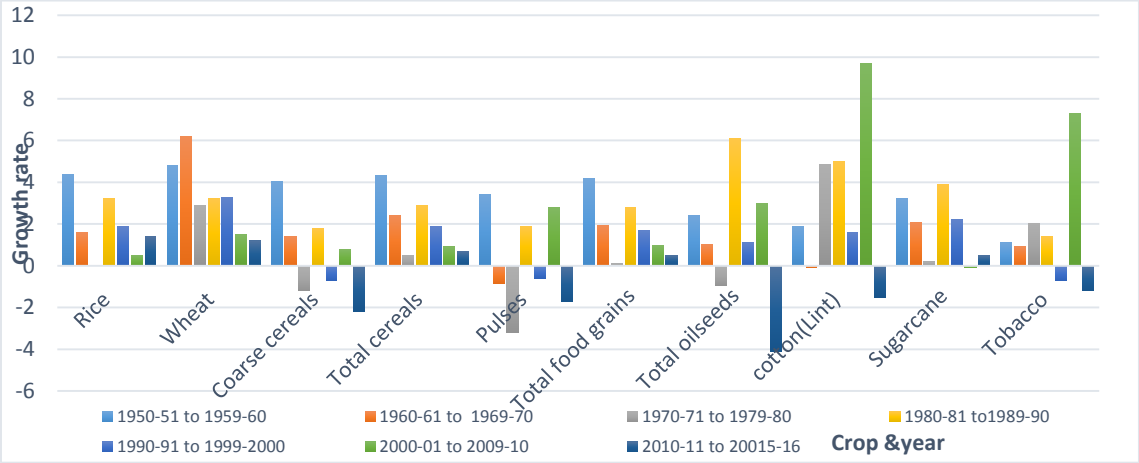
Year	Rice	Wheat	Coarse cereals	Total cereals	Pulses	Total food grains	Total oilseeds	Sugarcane	Cotton (Lint)	Tobacco
1950-51 to 1959-60	4.4	4.8	4.05	4.3	3.4	4.2	2.4	3.2	1.9	1.1
1960-61 to 1969-70	1.6	6.2	1.4	2.4	-0.83	1.95	1.03	2.07	-0.07	0.93
1970-71 to 1979-80	0.03	2.9	-1.2	0.5	-3.2	0.12	-0.97	0.19	4.86	2.03
1980-81 to1989-90	3.2	3.2	1.8	2.9	1.9	2.8	6.1	3.9	5.0	1.4
1990-91 to 1999-2000	1.9	3.3	-0.7	1.9	-0.6	1.7	1.1	2.2	1.6	-0.7
2000-01 to 2009-10	0.5	1.5	0.8	0.9	2.8	1.0	3.0	-0.1	9.7	7.3
2010-11 to 20015-16	1.4	1.2	-2.2	0.7	-1.7	0.5	-4.1	0.5	-1.5	-1.2

Source: RBI database.

But the decline of CAGR of all agriculture products crops was high after the economic reform period. During the period from 1980-81 to 2009-10, there was more positive growth for production of total oilseeds and cotton. “As it is expected that, the growth in the food grains production has been decorated when India entered in the era of globalization. The free market play has adversely affected the production of food grains and the rate of growth

of food grains production deteriorated after the introduction of New Economic Policy (NEP) in India" Ahmad and Haseen, 2012).

Figure 3.4 Compound annual growth rate of production of principal crops at all India level from 1950-51 to 2011-2015-16.



There are some other reasons which led to the decline in the growth rates of production of crops. 1. Before the economic reforms all agricultural inputs were highly subsidized and available at low price, but after reforms, it changed. 2. All the agriculture products in India had a good price and were also exported to other countries at higher prices, but after the WTO reforms on agriculture trade liberalization such as market access and cut down of the export subsidies, it led to the flow of low priced commodities all over the world. As a result, Indian farmers faced the reduction in market prices for their products and it became one of the causes that led them to leave agriculture 3. In addition, cost of the agriculture inputs such as fertilizers, seeds, and pesticides also increased. These all affected the Indian farmers and growth of total production. From the figure above, graphical representation of compound annual growth rate of various products can be examined beginning from 1950-51 to 2015-16 agriculture products.

From the table 3.8 below, it can be identified that before initiation of the green revolution in the Indian agriculture, growth of the area under different crops contributed for the rise of production. There was fluctuation in the growth rate of the area of all commodities all over India. Area under the total food grains declined by the-0.5 percent after the 2010-16. CAGR of the area of cotton was high after the 1990-91 economic reforms in India.

Table 3.8 All India compound annual growth rate of area of principal crops.

Commodity Year	Rice	wheat	Coarse cereals	Total cereals	Pulses	Total food grains	Total oilseeds	Sugarcane	Cotton	Tobacco
1950-51 to 1959-60	0.9	3.2	1.5	1.5	2.7	1.8	2.7	2.3	2.2	1.3
1960-61 to 1969-70	1.0	2.5	0.5	1.0	-0.7	0.7	0.7	1.3	0.2	1.0
1970-71 to 1979-80	0.5	2.0	-1.0	0.1	-0.1	0.1	0.2	-0.04	0.7	-0.5
1980-81 to1989-90	0.5	0.5	-1.0	-0.1	0.4	0.01	2.6	2.6	-0.2	-0.9
1990-91 to 1999-2000	0.6	1.3	-2.1	-0.1	-1.5	-0.4	0.1	1.4	1.6	0.5
2000-01 to 2009-10	-0.6	1.0	-0.9	-0.3	1.4	0.02	1.3	-0.3	1.7	5.4
2010-11 to 20015-16	0.2	0.7	-2.9	-0.5	-0.7	-0.5	-0.7	0.2	0.9	-2.5

Source: RBI database

From the table 3.9 below, it can be noticed that agriculture performance was determined by the yield or productivity of the commodity. The increase in the yield per hectare lead to increase in the country's overall production without increasing more cultivated area. CAGR of yield of rice achieved the lower growth rate at all India level during the green revolution period compared to the pre-green revolution period. But at the same period, wheat achieved more growth rate such as 3.6 percent compared to the earlier period such as 1.5 percent.

Table 3.9 The compound annual growth rate of yield of principal crops at all India level.

Year	Rice	wheat	Coarse cereals	Total cereals	Pulses	Total food grains	Total oilseeds	Sugarcane	Cotton(Lint)	Tobacco
1950-51 to 1959-60	3.4	1.5	2.5	2.8	0.7	2.4	-0.2	-0.2	0.9	-0.2
1960-61 to 1969-70	0.6	3.6	0.9	1.4	-0.1	1.3	0.3	-0.2	0.8	0.1
1970-71 to 1979-80	-0.4	0.9	-0.2	0.3	-3.0	0.05	-1.1	4.2	0.2	2.4
1980-81 to1989-90	2.7	2.7	2.9	3.0	1.5	2.8	3.4	5.2	1.3	2.3
1990-91 to 1999-2000	1.3	2.0	1.4	2.1	0.9	2.1	1.0	0.0	0.8	-1.1
2000-01 to 2009-10	1.1	0.5	1.1	1.2	1.5	1.0	1.7	7.8	0.2	1.7
2010-11 to 20015-16	0.7	0.3	0.4	0.7	-0.6	0.6	-2.1	-1.4	0.1	-1.0

Source: RBI databas.

3.4.1. Cropping diversification.

Crop diversification is meant for giving an extensive choice in the production of a variety of crops in a given the area so as to expand production connected activities on various crops and also to lessen the risk (Hazra 2001). In another perspective, it can be understood that it is a shift from the traditionally grown less payable crops to highly payable commercial crops or horticulture crops. Crop diversification or specialization will be taken by the farmers, based on the availability of infrastructural facilities, irrigation facilities, and farm inputs, quality of land and market facilities and suitable price for the product. In general Herfindahl index[4]was used to measure the crop diversification.

Table 3.10 Measurement of crop diversification index by Herfindahl index at all over India.

YEAR	1950-51	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11	2015-16
Squired Rice proportion	0.070	0.059	0.060	0.065	0.067	0.079	0.062	0.067
Squired Wheat proportion	0.007	0.008	0.014	0.020	0.021	0.026	0.028	0.032
Squired Coarse cereals proportion	0.104	0.102	0.090	0.071	0.048	0.036	0.027	0.020
Squired Total Cereals proportion	0.450	0.428	0.441	0.440	0.390	0.402	0.339	0.337
Squired T. Pulses proportion	0.027	0.028	0.022	0.020	0.022	0.016	0.023	0.023
Squired Total Food grains proportion	0.697	0.675	0.658	0.650	0.599	0.581	0.540	0.534
Squired T. Oilseeds proportion	0.008	0.010	0.012	0.013	0.021	0.021	0.025	0.024
Squired Sugarcane proportion	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001
Squired Cotton proportion	0.003	0.003	0.002	0.002	0.002	0.003	0.004	0.005
Squired Tobacco proportion	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00001	0.00001
squired miscellaneous proportion	0.00002	0.00004	0.00011	0.00014	0.00010	0.00013	0.00011	0.00011
Crop diversification effect	0.71	0.69	0.67	0.67	0.62	0.61	0.57	0.56

Source: RBI database. Values based on author own calculation through the RBI data base.

[4]Herfindahl Index is computed by taking sum of squares of acreage proportion of each crop in the total cropped area. Mathematically, the index is given as below. (Pal and *Kar, 2012).

$HI = \sum_{1=1}^{N} P_i^2$

Where N is the total number of crops and Pi represents area proportion of the i^{th} crop in total cropped area. With the increase in diversification, the Herfindahl Index would decrease. This index takes a value one when there is complete concentration and approaches zero when diversification is "perfect". Thus the Herfindahl Index is bounded by Zero and one.

From table above 3.10, it can be observed that, changes in the cropping pattern all over India from 1950-51 to 2015-16. Among the total pulses, there was also crop diversification. It was observed that, the total food grains over the period decreased from the crop specialization to crop diversification. Moreover, the oilseeds cropping pattern changed towards crop specialization, but there wasstill crop diversification. If observed, Herfindahl index value all over India from 1950-51 to 2015-16, highly crop specialization had been taking place, but these specialization declined from 0.71 to 0.56. It means that, there had been a change in cropping pattern all over India from traditionally cultivated crops to other crops over the period. Crop diversification towards the commercial crops, could be due to rise in cost of production and climate change.

3.5. Cost of Production

Cost of production is also one of the factors that affect the economic condition of the farmers and crop diversification. The cost of production was estimated at the C2 level for every product. Cost of cultivation for each product per quintal is different across the country. From the table 3.11 below, it can be identified that differences in cost of cultivation for a quintal of paddy in A.P., Bihar, Punjab, and West Bengal in the year 1999-2000 was Rs. 509, Rs.426, Rs.385, and Rs.490 respectively. During 2014-15, the cost of cultivation of paddy same states for quintal production was Rs.1351, Rs.1280, Rs.998, and Rs.2007 respectively. On observation of appendix table 3.A, minimum support price (MSP) for per quintal paddy in the 1999-2000 and 2014-15 was Rs. 490 and Rs. 1410 respectively. In 1999-2000, the cost of cultivation per quintal of paddy in A.P, was more than the MSP in that year, and in West Bengal, the cost of cultivation per quintal of paddy was equal to the MSP. Here, it can be observed that in some states farmers bore loss in agriculture where as some state farmers made their income on the cultivation of crops which was sufficient for their livelihood. Changing the cost of cultivation has an impact on farm income of the farmers.

Table 3.11 Cost of production for the principle crops per quintal at cost C2.

Crop/State	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Paddy																
A.P	509	497	538	544	489	505	541	557	641	790	939	920	978	1135	1248	1351
Bihar	426	452	407	484	468	552	497	561	458	585	961	983	861	1081	1160	1280
Punjab	385	386	393	498	443	449	487	477	506	670	773	836	906	946	1043	998
W.Bengal	490	497	500	549	546	582	581	626	670	731	865	1023	1086	1326	1367	2007
Maize																
A.P	524	486	470	592	522	582	578	576	614	847	834	866	892	1096	1303	1300
Karnataka	390	316	531	574	634	491	411	497	473	582	700	698	915	1249	1063	1242
Rajasthan	713	769	671	673	555	715	985	1019	691	659	1094	902	1138	1272	1905	1132
Cotton																
A.P	1835	1718	1751	1634	1720	1814	2291	1598	1709	2510	2407	3306	3559	4089	4253	3537
Gujarat	1889	2778	2618	1956	1567	1501	1595	1709	1717	2182	2225	2431	3287	4347	3345	3314
Maharashtra	1903	2269	2205	2366	2152	2146	2150	2052	2011	2539	2672	3614	3985	4120	4036	3452
Jowar																
A.P	792	717	936	845	997	713	748	900	1166	1102	1430	2010	1638	1408	1410	1745
Karnataka	695	553	820	845	1213	761	801	963	977	1008	1218	1810	1778	2007	1643	2099
Maharashtra	560	579	629	529	580	614	676	667	749	928	1052	1382	1524	2426	1826	1650
Groundnut																
A.P	1688	1252	1675	1798	1680	1563	1989	2089	2075	2575	2538	2565	3716	3681	4046	3757
Gujrat	1441	1809	789	1502	946	1534	1286	1690	1567	1921	2494	2036	2935	4905	2859	3341
Sugarcane																
A.P	64	70	74	72	65	79	99	90	107	120	130	150	183	162	148	218.45
Uttar Pradesh	63	65	71	68	63	65	69	68	73	99	108	124	141	158	165	173.25
Tamil Nadu	55	54	58	66	64	70	77	80	74	87	101	114	129	150	164	171.05

Source: Directorate of economics and statistics, department of agriculture and co-operation ministry of agriculture, the government of India.

3.6. Employment and wages in Agriculture

Percentage of the dependent workforce on agriculture and allied sectors has decreased over the years. If we observe the Table 3.12, we find that the, total labor force in the country in 1999-2000 was 397 million people, but it increased to 467 million people during 2011-12. Out of the total workforce in 1999-2000, 238 million workers were in agriculture. It consisted of 5 9.9 percent of total workforce, but it declined to 48.8 percent during 2011-12. Over the period people in the rural area who depended on agriculture began shifting towards urban employment due to the droughts, unemployment in the rural areas. Increasing employment opportunities in the manufacture, mining, and also service sectors caused reduction in the dependent labor force on agriculture all over India.

Table 3.12 Total workforce and agriculture workforce at all India level.

Year	Total workforce (in million)	Agriculture workforce	% agriculture workforce to total workforce
1999-00	397	238	59.9
2004-05	457	259	56.7
2009-10	460	245	53.3
2011-12	467	228	48.8

Source: NSSO, various rounds, FICCI Research.

Despite agriculture remaining as a main source of employment for the maximum of the rural inhabitants, there is a need to provide proper wages and salaries for those who work in agriculture. If we observe the Table 3.13 below, we can see wage structure in agriculture among different tasks in agriculture. Different tasks means, it includes all manual labor performed by various community people in rural areas. The average daily wage structure is given at all India level in 2002-03 among gender groups throughvarious tasks in the agriculture. In ploughing work,the average daily wage for men was Rs. 71.53, for women Rs. 40.46 and children Rs. 28.49. For sowing,the men were paid Rs. 62.62, women Rs. 44.2, and children Rs, 35.69, the wage structure couldbe perceived in the harvesting, winnowing, threshing,picking, herdsman, etc. one of the important feature of the agriculture is that, there existed gender inequality in wage payments. From 2007-2008 cropping year onwards, wages paid for different gender groups had been increasing enormously along withvarious agriculture tasks. Increase in the wages could be the result of implementation of the MGNREGA, as it provided equal minimum wage for both men and women. It provided 100 days work at initial stage. In the rural area most of the agriculture depended peopled joined in MGNREGA works, as result increased the labor shortage in agriculture during the crop period and farmers faced a lot of difficulties at the time of sowing, transplanting, harvesting, picking their crops, etc. Then the farmers steadily increased the wages of the various agriculture tasks to sowing , transplant, and harvest etc. crops. Even though there was an increaase in wage rates of agriculture works, still there is no change in the Gender Wage Gap.

Table 3.13 Occupation-wise Average Daily Wage Rates in Agriculture sector all India.

Year	Ploughing	Sowing	Weeding	Transplanting	Harvesting	Winnowing	Threshing	Picking*	Herds-man
2002-03									
Men	71.53	62.62	53.9	57.33	58.03	52.88	57.22	54.76	40.36
Women	40.46	44.2	44.9	48.24	47.86	44.11	46.84	43.63	31.6
Children	28.49	34.47	35.69	34.55	31.84	33.54	29.83	27.67	25.33
2003-04									
Men	72.19	64.15	58.95	61.96	62.37	54.21	61.03	54.69	40.57
Women	39.57	44.53	46.00	49.27	52.31	46.01	46.95	43.52	30.66
Children	@	64.96	35.69	35.4	32.24	@	34.73	32.70	26.29
2004-05									
Men	72.28	66.09	57.79	62.06	61.95	54.93	59.15	54.6	41.51
Women	41.58	46.17	46.73	50.98	50.99	42.69	46.63	41.49	31.68
Children	@	37.82	36.52	36.79	31.57	30.93	34.75	30.81	27.58
2005-06									
Men	76.15	68.4	64.0	66.5	68.32	65.74	66.05	61.47	42.4
Women	40.45	47.86	50.29	54.47	55.84	49.74	51.82	49.96	33.31
Children	@	39.12	36.83	39.13	40.17	45.75	46.58	32.96	28.58
2006-07									
Men	81.79	73.29	64.97	69.47	68.45	66.18	67.4	67.45	43.46
Women	42.37	51.41	52.82	56.44	55.69	51.04	54.41	51.06	34.43
Children	@	41.32	37.81	42.67	38.69	40.95	40.71	34.39	29.62
2007-08									
Men	91.38	79.28	70.07	73.79	75.24	71.06	73.5	72.46	47.64
Women	49.96	57.18	58.27	61.93	62.31	56.09	59.41	58.15	37.78
Children	@	44.72	42.35	45.7	42.54	40.79	40.18	40.9	31.4
2008-09									
Men	102.9	90	80.15	83.28	87.05	81.23	85.06	81.1	53.48
Women	55.43	65	68.02	71.43	71.58	65.08	67.66	66.37	41.32
Children	@	48.91	49.46	52.51	50.49	43.4	46.06	45.78	36.22
2009-10									
Men	120.85	104.52	92.78	98.29	102.82	96.32	100.23	96.98	62.23
Women	70.43	79.47	78.94	86.71	84.95	79.02	82.12	78.94	46.66
Children	@	58.41	58.8	58.08	61.72	48.27	53.32	51.41	42.75
2010-11									
Men	145.51	125.75	111.22	120.19	122.53	112.82	117.78	121.1	77.17
Women	87.23	98.17	95.79	104.17	102.36	94.83	97.08	101.19	60.43
Children	@	70.64	71.76	72.56	70.91	58.83	66.41	78.31	54.47
2011-12									
Men	170.47	152.07	134.01	140.14	148.49	136.9	141.46	145	92
Women	99.09	120.14	117.67	124.79	123.29	114.07	115.75	116.8	72.45
Children	@	84.87	89.88	91.22	83.89	66.61	70.76	93.04	58.53
2012-13									
Men	204.11	177.36	158.87	165.17	176.17	160.03	171	154.89	111.3
Women	121.25	141.17	139.31	146.84	144.83	132.34	137.86	130.25	86.23
Children	@	100.7	97.8	109.78	115.19	86	82.5	116.76	69.37
20.13-14									
Men	259.03	219.51	226.50	226.50	229.28	229.28	229.28	191.44	179.11
Women	185.39	179.66	182.46	182.46	192.77	192.77	192.77	157.89	133.54
Children	@	@	108.67	108.67	150.0	150.0	150.0	178.83	84.52
2014-15									
Men	269.72	234.8	234.8	234.8	238.82	238.82	238.82	202.02	190.14
Women	189.31	190.81	190.81	190.81	201.42	201.42	201.42	167.48	143.19
Children	-	115.35	115.35	115.35	156.35	156.35	156.35	172.35	88.52
215-16									
Men	305.51	272.63	272.63	272.63	264.84	264.84	264.84	227.5	203.49
Women	228.27	225.43	225.43	225.43	225.47	225.47	225.47	193.01	165.57
Children	-	145.71	145.71	145.71	188.00	188.00	188.00	180.00	113.59

Source: ministry of labor & employment, Govt. of India and indiastat.com. Note: *: Picking including picking of cotton bolls/seed pods, jute stalks and tea leaves etc. @ quotations are less than five.

The table 3.14 below, shows the percentage change of occupation-wise average daily wage rates in agriculture sector between men and women from 20003-04 to 2015-16 in India. If we observe the percentage change of wage of various work categories in agriculture, in ploughing in 2003-04, the percentage change of male wage was positive, but in the case of women, it was a negative change. For the same work in 2007-08, 2009-10, 2010-11, 2012-13, 2013-14 and 2015-16, the percentage change of male wage rate was less than the percentage change of women wage. By 2015-16, except herdsman work category, all the work categories percentage change of male wage was less than the percentage of women wage. Overall percentage change of women wage was more than male. This could be due to the feminization of agriculture. But there was a huge gap between the male and women wage payment.

Table 3.14 Percentage change of Occupation-wise Average Daily Wage Rates in Agriculture sector at all India level.

Year	Ploughing		Sowing		Weeding		Transplanting		Harvesting		Winnowing		Threshing		Picking		herdsman	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
2003-04	0.9	-2.2	2.4	0.7	9.4	2.4	8.1	2.1	7.5	9.3	2.5	4.3	6.7	0.2	-0.1	-0.3	0.52	-3.0
2004-05	0.1	5.1	3.0	3.7	-2.0	1.6	0.2	3.5	-0.7	-2.5	1.3	-7.2	-3.1	-0.7	-0.2	-4.7	2.32	3.3
2005-06	5.4	-2.7	3.5	3.7	10.7	7.6	7.2	6.8	10.3	9.5	19.7	16.5	11.7	11.1	12.6	20.4	2.14	5.1
2006-07	7.4	4.7	7.1	7.4	1.5	5.0	4.5	3.6	0.2	-0.3	0.7	2.6	2.0	5.0	9.7	2.2	2.50	3.4
2007-08	11.7	17.9	8.2	11.2	7.8	10.3	6.2	9.7	9.9	11.9	7.4	9.9	9.1	9.2	7.4	13.9	9.62	9.7
2008-09	12.6	10.9	13.5	13.7	14.4	16.7	12.9	15.3	15.7	14.9	14.3	16.0	15.7	13.9	11.9	14.1	12.26	9.4
2009-10	17.4	27.1	16.1	22.3	15.8	16.1	18.0	21.4	18.1	18.7	18.6	21.4	17.8	21.4	19.6	18.9	16.36	12.9
2010-11	20.4	23.9	20.3	23.5	19.9	21.3	22.3	20.1	19.2	20.5	17.1	20.0	17.5	18.2	24.9	28.2	24.01	29.5
2011-12	17.2	13.6	20.9	22.4	20.5	22.8	16.6	19.8	21.2	20.4	21.3	20.3	20.1	19.2	19.7	15.4	19.22	19.9
2012-13	19.7	22.4	16.6	17.5	18.6	18.4	17.9	17.7	18.6	17.5	16.9	16.0	20.9	19.1	6.8	11.5	20.98	19.0
2013-14	26.9	52.9	23.8	27.3	42.6	31.0	37.1	24.3	30.1	33.1	43.3	45.7	34.1	39.8	23.6	21.2	60.93	54.9
2014-15	4.1	2.1	7.0	6.2	3.7	4.6	3.7	4.6	4.2	4.5	4.2	4.5	4.2	4.5	5.5	6.1	6.16	7.2
2015-16	13.3	20.6	16.1	18.1	16.1	18.1	16.1	18.1	10.9	11.9	10.9	11.9	10.9	11.9	12.6	15.2	49.45	44.1

Source: author own calculation based on the ministry of labor & employment, Govt. of India and indiastat.com

3.7. Indebtedness among the Farmers All Over India by Size

In India, agriculture is the primary occupation for the rural population. Agriculture and allied sectors provide the employment for more than 80 percent of the rural population. In India, 85 percent of the operational holdings are marginal and small holdings, these landholding groups need to buy equipment as they are mainly dependent on credit either from the institutional or non-institutional sources due to the lack of the saving, prevailing the poverty among year by year.

Dependence of the farming community on the institutional credit for borrowing makes them somewhat better than non-intuitional in the matters of less interest rate, there is not much harassment (means coercion) like non-institutional agencies (moneylenders, relatives, private traders). But actually, most of the farmers are dependent on non-institutional sources for agriculture borrowings. Especially, these are in the case of the small and marginal farmers who are denied (in the most of the rural area banks are dominated by the political leaders and large farmers, the credit flows only to these group instead of right person) institutional credit for several years and also due to inequality in the credit disbursed by the institutional agencies. Prevalence of illiteracy among the farming community gives the advantage to the money-lenders to charge highinterest rates on borrowed money. Royal Commission on Agriculture1928, well stated on farmers conditions as "the Indian peasant is born in debt, lives in debt and dies in debt"

Consequences of indebtedness and the growth of the indebtedness among the farming community in rural areas cause rural unrest, and also leads to the impoverishment of the small and marginal farmers. Farmers have to mortgage their land to the moneylenders, if they do not pay the borrowed money. Farmers' become wage laborers or tenants, and psychologically they become stressed, which may also lead to farmers' suicides.

From the table 3.15 below, indebtedness of the agriculture households can be perceived class-wise by comparing the two NSSO rounds of 2003 and 2013. In 2003, 61.1 percent marginal farmers, 18.8 percent small farmers, 12.5 percent semi-medium farmers, 6.4 percent medium farmers, and 1.2 percent large farmers were indebted to the total indebted households, but in 2013, the percentage of indebted households decreased in all size group,

except percentage in the marginal indebted households of total indebted agriculture households.

Table 3.15 Indebtedness of Agricultural Households (at all India level) in Different Size Classes of Land Possessed.

Land Possessed (ha)	Estimated Number of Agricultural Households	% to Total in each Class	Estimated No. of Indebted Agricultural Households	% to Total in each Class	% of Indebted Agricultural Households to Total	Average Outstanding Loan Amount (Rs)	Loans from	
							Institutional %	Noninstitutional %
2003 NSSO								
Marginal 0.01-1.00	5,89,071	65.9	2,65,031	61.1	45	21289	39.56	60.44
Small 1.01-2.00	1,60,600	18.0	81,920	18.8	51.0	13762	57.7	42.3
Semi-medium 2.01-4.00	93,504	10.5	54,409	12.5	58.2	23456	65.1	35.0
Medium 4.01-10.0	42,581	4.8	27,734	6.4	65.1	42532	68.8	31.2
Large 10 & above	7,748	0.8	5,148	1.2	66.4	76232	67.6	32.4
All India	**8,93,504**	**100.0**	**4,34,242**	**100**	**48.6**	**12585**	**57.7**	**42.3**
2013 NSSO								
Marginal 0.01-1.00	6,26,360	69.44	2,98,330	63.68	47.62	30133	38.33	61.77
Small 1.01-2.00	1,54,580	17.14	86,110	18.4	55.7	54800	64.8	35.2
Semi-medium 2.01-4.00	84,350	9.35	56,100	12.0	66.5	94900	67.5	32.5
Medium 4.01-10.0	33,020	3.66	25,210	5.4	76.3	182700	71.5	28.5
Large 10 & above	3,710	0.41	2,920	0.6	78.7	290300	79	21
All India	**9,02,010**	**100.0**	**4,68,480**	**100**	**51.9**	**47000**	**59.8**	**40.2**

Source: NSSO, Situation Assessment Survey of Farmers, 2003&2013.

Further, percentage of indebted households by all size groups decreased amongst the estimated total number of agriculture households from 2003 to 2013 NSSO rounds. But percent of indebted households in India increased from 48.6 in 2003 to 51.9 in 2013. Moreover, loan outstanding by the size groups had been increasing, with an increase in the size of land holdings. And also, marginal and small farmers all over India heavily depend on the non-institutional credit to compare the medium and large farmers. Medium and large farmers are heavily dependent on the institutional credit. Even though, all over India dependence on the institutional credit has increased from 57.7percent in 2003 to 59.8 percent in 2013, dependence on non-institutional credit has been decreased from 42.3% in

2003 to 40.2 % in 2013, still people are dependent on non-institutional credit even though there are a number of banks issuing credit.

It can be noticed from table 3.16 given below the various NSSO rounds conducted surveys on the indebted households during the period of 2003 and 2013. In 2003, 48.6% farmer households at all-India level were indebted. The incidence of indebtedness of farmer households in different social groups was 36.3 percent among the STs, 50.2 percent among the SCs, 51.4 percent among the OBCs and 49.4 percent among the Others. In 2013, percent of indebted farmers in all social groups decreased except among the STs farmers. But overall indebtedness among the farmer households was highest among the OBCs followed by the Others and SCs.

Table 3.16 Indebtedness of farmer households in different social groups at all India level.

NSSO 59th round 2003		NSSO 70th round 2013
Social group	% indebted households	% indebted households
ST	36.3	33.8
SC	50.2	52.0
OBC	51.4	56.5
Others	49.4	53.4
All India	48.6	51.9

Source: NSSO, Situation Assessment Survey of Farmers, 2003&2013

3.8. Agriculture Credit India

In the country, most of the farmers are from marginal and small landholding households. These farmers suffer a lot due to lack of availability of credit and support from the government. Recently farmers' suicides are increasing in India because of indebtedness which has taken from the non-institutional agencies. Access to credit is very important for farmers to invest in all agricultural developmental activities. Credit helps farmers to invest in agriculture machinery to produce more output. If we observe the credit availability to farmers from pre-independence period, institutional credit availability to farmers is very less, and farmers are mainly dependent on moneylenders and landlords. In India, agricultural credit system consists of informal and formal credit supply systems. Informal credit systems include moneylenders, private traders, relatives, and friends. These type of credit system imposes excessive interest rates on the farmers. Formal credit supply system

includes cooperatives, commercial banks, self-help groups, regional rural banks, and NABARD.

Cooperative credit societies

During the colonial period, farmers were dependent on moneylenders and landlords. At this time, cooperative societies were enacted in 1904. Cooperative credit societies of 1904 and 1912 were the significant milestone in the agricultural credit policy in India to reduce poverty, indebtedness of farmers, and the dependence on money lenders. After independence, the cooperatives became more significant for providing institutional credit for farmers across the country. Through the cooperative societies, supply of cheaper and adequate credit to agriculture with less interest rates slowly reduced dependence on the money lenders. In India, primary Agricultural credit societies (PACS) cover nearly 86 percent of the Indian villages and comprise nearly 36 percent of the total rural population of the country.

Regional Rural Banks (RRBs)

Regional rural banks were established in 1975 through an ordinance passed by parliament, with the recommendations of M. Narasimham Rao, the chairman of Narshimham committee working group. The main motive of the RRB act 1976 is that it spread institutional credit at grass-root level and provided comprehensive credit and banking facilities in rural areas.

Commercial banks

At the time of independence, the role of the commercial banks was very low in providing credit advances for agricultural performance. After the nationalization of 14 commercial banks in 1969 and 6 commercial banks in 1980, commercial banks started to spread out financial support for agricultural purpose both directly and indirectly and issued both short and medium-term loans. Still, commercial banks are facing problems in advancing loans to the farmers. The government enforced social control on banks for which major banks were nationalized in 1969 and extended branches in rural area. Since 1969 banks were requested to lend 18%, but since 1997 commercial banks limited the lending 13.5 percent of their total loan to agriculture. It reduced the availability of institutional credit to farmers.

These banks were not interested in providing loans to the small and marginal farmers compared to medium and large farmers, due to less percentage of small and marginal farmers' loan repayment or not recovery of loan advances is given to the small and marginal farmers.

Other agencies

The term other agencies refers to various state governments across the country which provide loans to the farmers at the time of droughts and floods to fulfill the minimum needs and recovery of agriculture. All these formal credit societies are giving the loan advances to farmers in three ways such as short term, medium term, and long-term credit supply.

Short-term credit

Most of the farmers need credit at the beginning of cropping season for purchasing seeds, fertilizers, pesticides, and paying the wages of the workers and plowmen. To fulfill all the requirements, there are short-term credit loans available (formal agencies) for the farmers for a period of less than 15 months from all the institutional credit suppliers. Such loans are normally paid back after harvest.

Medium-term credit:

Some of the farmers take medium-term loans from formal credit institutions after the fulfillment of the short-term credit needs. It is required for farmers for medium period ranging between 15 months and 5 years for digging well and bore well, purchasing cattle, plough, pumping sets, other agricultural equipment, etc. Amount of credit is given to farmers on the name of medium-term credit which is larger than the short-term credit.

Long-term credit

Long-term credit loans for farmers is given for the period of more than five years, to buy additional land for increasing agricultural production activities, renovation of land, and advanced machines and technology such as tractors, paddy reaping machines, etc. Thus, the long-term credit is needed for adequate time for the repayment of such loan

From the table 3.17 below, it shows the flow of institutional credit for agriculture from various institutional agencies. By observing the duration 1980-81, we find that the flow of

institutional credit from the cooperatives to agriculture was 2028.5 crores, which comprise 59 percent of total agriculture credit. During the period 1990-91, it was 4819.1 crores i.e. 47.3 percent, during the period 2000-01 it was 20718 crores i.e. 39.2 percent, during the period 2010-11it was 78121 crores i.e. 16.7 percent, and during the period 2014-15 it was increased to 1, 38,469 crores i.e. 16.5 percent of total agriculture credit.

Table 3.17 Agency-wise Flow of Institutional Credit for Agriculture in India from 1980-81 to 2014-15.

Year	Co-Operative Banks	% of total	Regional Rural Banks(RRBs)	% of total	Commercial Banks	% of total	Other Agencies	% of total	Total	Percentage growth rate over the year
1980-81	2028.5	59.0	0	0.00	1262.8	36.76	144.2	4.20	3435.5	
1981-82	2479	57.7	167.6	3.90	1495.6	34.82	153.3	3.57	4295.5	25.0
1982-83	2716.9	62.4	222.3	5.11	1224.7	28.14	187.8	4.32	4351.7	1.3
1983-84	2938	56.0	262.8	5.01	1858.2	35.43	185.2	3.53	5244.2	20.5
1984-85	3154.3	51.1	310.1	5.03	2461	39.91	241.4	3.91	6166.8	17.6
1985-86	3674	51.3	402	5.62	2728.9	38.12	353.6	4.94	7158.5	16.1
1986-87	3701	47.9	476.9	6.18	3332.4	43.17	209.6	2.72	7719.9	7.8
1987-88	4710.4	51.2	483.2	5.25	3526.2	38.34	478.4	5.20	9198.2	19.1
1988-89	4873.1	51.9	419.9	4.48	3813.2	40.65	274.5	2.93	9380.7	2.0
1989-90	5406.8	50.9	647.2	6.09	4282.4	40.29	291.8	2.75	10628.2	13.3
1990-91	4819.1	47.3	334.5	3.28	4675.5	45.89	358.6	3.52	10187.7	-4.1
1991-92	5796.8	50.2	596.3	5.17	4805.9	41.65	338.5	2.93	11537.5	13.2
1992-93	6483.7	51.7	697.7	5.57	4959.9	39.58	388.5	3.10	12529.8	8.6
1993-94	8484	56.5	752.1	5.01	5399.9	35.97	377	2.51	15013	19.8
1994-95	9875.5	52.6	1083	5.77	7407.9	39.46	406.7	2.17	18773.1	25.0
1995-96	12483	52.7	1381.1	5.83	9274	39.14	553.8	2.34	23691.9	26.2
1996-97	11944	45.2	1748	6.62	14467	54.78	0	0.0	26411	11
1997-98	14085	44.1	2040	6.4	15831	49.54	0	0.0	31956	21
1998-99	15870	43.1	2460	6.7	18443	50.04	87	0.2	36860	15.3
1999-00	18260	39.5	3172	6.9	24733	53.46	103	0.2	46268	25.5
2000-01	20718	39.2	4219	8.0	27807	52.64	83	0.2	52827	14.2
2001-02	23524	37.9	4854	7.8	33587	54.13	80	0.1	62045	17.4
2002-03	23636	34.0	6070	8.7	39774	57.18	80	0.1	69560	12.1
2003-04	26875	30.9	7581	8.7	52441	60.29	84	0.1	86981	25
2004-05	31231	24.9	12404	9.9	81481	65.02	193	0.2	125309	44.1
2005-06	39403	21.8	15223	8.4	125477	69.52	382	0.2	180485	44
2006-07	42480	18.5	20435	8.9	166485	72.57	0	0.0	229400	27.1
2007-08	48258	19.0	25312	9.9	181088	71.11	0	0.0	254658	11
2008-09	46192	15.3	26765	8.9	228951	75.83	0	0.0	301908	18.6
2009-10	63497	16.5	35217	9.2	285800	74.33	0	0.0	384514	27.4
2010-11	78121	16.7	44293	9.5	345877	73.86	0	0.0	468291	21.8
2011-12	87963	17.2	54450	10.7	368616	72.13	0	0.0	511029	9.1
2012-13	111203	18.3	63681	10.5	432491	71.21	0	0.0	607375	18.9
2013-14	119963	16.9	82653	11.6	509005	71.53	0	0.0	711621	17.2
2014-15	138469	16.5	102483	12.2	599691	71.34	0	0.0	840643	18.8

Source: RBI Database, India stat.

The flow of institutional credit for agriculture from cooperatives had been increasing, but as percent to total agriculture credit decreased over the years, the flow of institutional credit from RRBs to agriculture sector during the period 1981-82 was 167.6 crores i.e. 3.90 percent, during the period 1990-91 it Increased to 334.5 crores i.e. 3.28 percent, during the

period 2000-01 it was 4219 crores i.e. 8.0 percent, and during the period 2014-15 it has risen to 102483 crores i.e. 12.2 percent of the total agriculture credit. Over the years, the flow of agriculture credit from RRBs increased the amount and percent of total agriculture credit is not increasing. Agriculture credit flow from commercial banks during the period 1980-81 was 1262.8 crores i.e. 36.76 percent, during the period 2000-01 it was grown to 27807 crores i.e. 52.64 percent, and during the period 2014-15 it increased to 599691crores i.e.71.34 percent of total agriculture credit. High percent and amount of agriculture credit were contributed by the commercial banks. The term other agencies refers to central and state governments provided the agriculture credit over the years from 1980-81 to 2014-15, wherever droughts or floods are located. Percentage growth of agriculture credit from the formal credit agencies had been fluctuating over the years. Sufficient credit availability for farmers, makes them more efficient to generate higher agriculture production and that leads to the increase the income and profits.

The table 3.18 below shows the scheduled commercial banks' direct finance to farmers according to the size of land holdings (disbursements) - short-term and long-term loans from 1980-81 to 2011-12. According to RBI data classification, marginal farmers are those who hold land up to 2.5 acres. During the period1980-81, the commercial banks held the 1586.8 marginal farmers accounts. The amount disbursed by the commercial banks for marginal farmers was 252.40 crores, and per capita availability of credit for marginal farmers' was 1591 rupees. The farmers who held land between 2.5 to 5 acres were considered as Small farmers, if we observe in 1980-81, commercial banks held 692.6 small farmers' accounts. The amount of loan given by the commercial banks for small farmers was 168.3 crores. Per capita availability of credit for small farmers was 2430 rupees. The farmers who held land more than 5 acres and above were treated as large farmers, during the period1980-81 large farmers having 790 accounts in the commercial banks, 593 crores amount was disbursed by the commercial banks for large farmers, and per capita availability of credit for them was Rs. 7,515 rupees. During the period1980-81 all size group farmers had3069.7 accounts, the amount disbursed by them was 1014.4 crores, per capita availability per farmer was Rs.3305.Further, it was perceived during the period19990-91 and 2000-01. Moreover, during the period 2011-12 marginal farmers held

13,735accounts, small farmers' held 10021accounts, and large farmers held 6782 accounts in the commercial banks.

Table 3.18 Scheduled Commercial Banks' Direct Finance to Farmers according to Size of Land Holdings (Disbursements) – including Short-Term and Long-Term Loans at all India. (A number of accounts in thousands; Amount in Rupees Billion, per capita availability in thousands).

	Marginal farmers Up to2.5 Acres			Small farmers Above2.5 acres to 5 Acres			Large farmers Above5 Acres			All size group farmers		
Year(End-June)	No. Accounts	Amount Rs.	P.C avail.	No. Accounts	Amount	P.C avail.	No. Accounts	Amount	P.C avail.	No. Accounts	Amount	P.C avail.
1980-81	1586.8	252.40	1591	692.6	168.3	2430	790.2	593.8	7515	3069.7	1014.4	3305
1981-82	682.4	134.30	1968	331.9	99.9	3010	334.5	249.4	7456	1348.8	483.6	3585
1982-83	1303.5	290.10	2226	651.9	211.1	3238	615.8	475.6	7723	2571.2	976.8	3799
1983-84	1830.7	404.30	2208	1072.2	372.1	3470	835	742.6	8893	3737.9	1519	4064
1984-85	1828.8	506.40	2769	1241.1	481.6	3880	902.6	950.4	10530	3972.4	1938.4	4880
1985-86	1949.7	617.30	3166	1232.1	588.6	4777	988.4	1037.1	10493	4170.2	2243	5379
1986-87	2045.4	758.30	3707	1385.9	707.5	5105	1043.9	1278.1	12244	4475.1	2743.9	6131
1987-88	2236.3	824.30	3686	1441.6	760.2	5273	1037.9	1360.1	13104	4715.8	2944.5	6244
1988-89	2190.5	881.20	4023	1453.4	835.1	5746	990.2	1470.8	14854	4634	3187	6877
1989-90	2057.3	1032.60	5019	1336.9	889.9	6656	946.6	1607.2	16979	4340.8	3529.7	8131
1990-91	1960.2	1180.80	6024	1218.8	952.2	7813	898.8	1781.8	19824	4077.8	3914.8	9600
1991-92	1862.4	1172.30	6295	1288.5	1012.5	7858	949.2	1886.8	19878	4100.2	4071.7	9930
1992-93	1870.7	1170.50	6257	1336.1	1032.7	7729	999.5	2002.5	20035	4206.2	4205.6	9999
1993-94	1886.0	1312.40	6959	1341.2	1175.9	8768	1191.6	2069.5	17367	4418.8	4557.8	10315
1994-95	2032.4	1691.90	8325	1517.6	1474.3	9715	1261.4	2970.4	23548	4811.5	6136.7	12754
1995-96	2024.3	2001.10	9885	1688.8	1952.3	11560	1702.8	3703.2	21748	5416	7656.6	14137
1996-97	2075.8	2176.40	10485	1675.8	2288.5	13656	1744.6	4510.8	25856	5496.3	8975.7	16330
1997-98	2104.3	2288.00	10873	1811.3	2412.5	13319	1420.1	4827	33991	5335.8	9527.5	17856
1998-99	2307.7	2786.60	12075	1877.5	3180.7	16941	1659.3	5861.9	35328	5844.5	11829.3	20240
1999-00	2341.8	3337.80	14253	1871.2	3466.9	18528	1580.5	7208.9	45612	5793.5	14013.6	24188
2000-01	2382.4	3739.60	15697	1860.3	3641.6	19575	1598.6	7134.9	44632	5841.3	14516.1	24851
2001-02	2678.6	4351.80	16247	1933	4370.5	22610	2358.5	7577.8	32130	6970	16300.1	23386
2002-03	2494.0	4834.20	19383	1934.2	5577.7	28837	1983.1	11444.6	57711	6411.3	21856.5	34091
2003-04	3711.0	7953.10	21431	2694.5	7340.3	27242	2259	16591.8	73448	8664.7	31885.2	36799
2004-05	4478.2	10833.34	24191	3172.2	10550.3	33258	2534.99	19735.07	77851	10185.47	41118.76	40370
2005-06	5003.9	16822.79	33619	3670.3	17619.18	48004	3670.14	32681.62	89047	12344	67124	54378
2006-07	5963.0	23246.00	38984	4008	21588	53862	4379	49335	112663	14350	94169	65623
2007-08	6605.0	25352.00	38383	4463	23215	52017	4932	48140	97607	16000	96707	60442
2008-09	8544.0	34267.00	40107	6641	33280	50113	6811	72753	106817	21996	140300	63784
2009-10	8127.0	42626.00	52450	7175	44331	61785	6385	73061	114426	21687	160018	73785
2010-11	9253.0	46019.00	49734	9690	57436	59273	6044	85455	141388	24987	188910	75603
2011-12	13735.0	89714.00	65318	10021	82919	82745	6782	99037	146029	30538	271670	88961

Source: Source: RBI Database, India stat. * Shot run loan means loans available for the farmers for period of less than 15 months from all the institutional credit Suppliers. ** Long term loans means credit is available farmers more than five years.

But commercial banks amount disbursed to marginal farmers was 89,714crores, and small farmers were 82,919 crores, and large farmers were 99,037 crores. Per capita availability of credit for each marginal farmer was 65,318 rupees, small farmer was 82,745rupees, and large farmer was 1, 46,029 rupees. Furthermore, all over India, all farming groups held 30,538 accounts. Loans disbursed by the commercial banks were 2, 71,670 crores, and per capita availability of credit for each farmer was 88, 961 rupees. The overall explanation and observation from the table 3.18 reveals that there existed inequality in the disbursement of loans among the farmers by the commercial banks. Per capita availability of credit for marginal and small farmers is very less compared to the large farmers, despite marginal and small farmers holding more accounts than large farmers in commercial banks. In India, almost 80 percent of farmers are small and marginal farmers. They even do not have sufficient money for cultivating the crops and they have to depend either on institutional or non-institutional credit agencies to get the money for cultivation. In approaching the non-institutional agencies (money lenders, traders, relatives, etc.), the farmers face severe difficulties such as higher interest and harassment if they cannot pay back borrowed money.

The table 3.19 below, shows outstanding loan amount of the farmers from the institutional and non-institutional agencies. Over the years, effort towards reducing the dependence on the non-institutional credit had been achieved, where the high rate of interest used to levy on the borrowed money of farmers for the purpose of cultivation. The outstanding credit of the farmers from the non-institutional credit decreased from 89.8 percent in 1950 to 36 percent in 2010

Table.3.19 Loan amount outstanding for all size wise farmers by agency wise.

Year	Institutional	Non-institutional
1950	10.2	89.8
1960	20.9	79.1
1970	32	68
1980	56.2	43.8
1990	66.3	33.7
2000	61.1	38.9
2010	64	36

Source: NABARD Annual report 2014-15.

3.9. Agriculture Income and Expenditure of Farmers

Sufficient Income is important for every person or households to get the minimum necessities such as food and clothing and also it is necessary to save money for future unexpected expenditures. In every line of work and business, people work to get sufficient wage, income, and profit except for farmers in the agricultural sector. It can be observed in the table 3.20 regarding the size-wise average income and consumption expenditure of the all size group farmers from 59 and 70 NSSO rounds. After deducting average monthly income from their average monthly consumption expenditure of the agriculture households, the net income of the marginal farmers was Rs. -846 that of the small was 655, semi-medium 96, medium1055 and of the large agriculture households 3249 rupees, and all over India, it was -655 rupees. All the farming households are in negative net income, except medium and large farmers, which means marginal, small, and semi-medium farmers are not getting enough income to meet their expenditure. And it can also be observed in 2013 that there was improvement in the income of all size groups except marginal agriculture households, their net income were Rs. -856 rupees.

Table 3.20 Average monthly income (Rs) and consumption expenditure per agricultural household during July 2002–June 2003 and July 2012- June 2013 for each size class of land at all India level.

Size class of land (ha)	July 2002–June 2003 (NSS, 59th Round)			July 2012–June 2013 (NSS 70th Round)		
	Average monthly income (Rs.)	Average monthly expenditure (Rs.)	Net income	Average monthly income (Rs.)	Average monthly expenditure (Rs.)	Net income
Marginal 0.01-1.00	1607	2453	-846	4653	5509	-856
Small 1.01-2.00	2493	3148	-655	7348	6457	891
Semi-medium 2.01-4.00	3589	3685	-96	10730	7786	2944
Medium 4.01-10.00	5681	4626	1055	19637	10104	9533
Large 10 & above	9667	6418	3249	41388	14447	26941
All sizes	2115	2770	-655	6426	6223	203

Source: Source: NSSO, Situation Assessment Survey of Farmers, 2003&2013.

According to National Crime Record Bureau (NCRB) 2016 report, in 2014 in the country, 12360 farming suicides took place in which 5650 suicides were from farmers or cultivators, and 6710 suicides were from agriculture laborers. In 2015, farming suicides were 12602, in which 8007 were farmers or cultivators and 4595 were from agriculture laborers. Out of 8,007 farmer's suicides during 2015, 7566 were male and 441 were female. According to report, approximately 58 percent of farmers' suicides are taking place due to indebtedness and farming related issues. Moreover, there are other reasons such as family problems, illness, drugs and alcohol consuming, etc. During 2015, highest farmers suicide took place in Maharashtra (3030), followed by Telangana state (1358), Karnataka (1197), Madhya Pradesh (581), Chhattisgarh (854), and Andhra Pradesh (516) (NCRB report2016).

3.10. Summary:

The study on Indian agriculture includes various variables such as land holdings, indebtedness, agriculture credit, agriculture income at the all India level and state level. Inequality still exists in the distribution of land among the class groups and social groups, even though there is implementation of land reforms across the country. At all India level, 7.5 percent of semi-medium, medium, and large landholding households owned approximately 47.35 percent of the land. Social group-wise distribution of land at all India level reveals that, except SCs percent of area owned is more than the percent of landholding households among the remaining communities like STs, OBCs, and Others,. But across the country within the caste groups, percent of landless households are more among the SCs. Percent of indebtedness to total indebted agriculture households is highest in the marginal and small land-holding farmers, but outstanding loan payments is increasing by increasing the size. Most of the indebted marginal and small farmers are mainly dependent on the non-institutional credit. At all India level, percent of indebted farmers within every caste is highest in the OBCs, followed by the SCs and Others. At all India level 2003 NSSO survey, net income for the marginal and small farmers were negative compared to semi-medium, medium, and large farmers. By 2013, small marginal farmers' net income was negative and small farmers were getting some amount of positive income. Cost of cultivation for production of crops is increasing, and farmers are not getting a suitable price for their products, which leads to farmer's distress. Another important thing is to study growth rate

of agriculture production, area, and yield. Percent of compound annual growth of production of various crops has been fluctuating over the years. Compound annual growth rate of various products at all India level shows that positive higher growth before green revolution is compared to green revolution period. Growth rate of production of all agriculture crops have decreased after the economic reforms compared to green revolution period. By observing the cropping pattern in India through the Herfindahl index, we find that there still is crop specialization in India, but it has been decreasing from high specialization to medium specialization. There is gender discrimination in the payment of agriculture wages over the period, but there is increasing trend in agriculture wages. In India, there has been increasing marginal and small holdings and also decreasing the average size of holdings. To make the agriculture more inclusive, there is a need to protect all small and marginal farmers.

Chapter IV

Land Holding Situation in United Andhra Pradesh

4.1. Introduction

In this chapter mainly concentrated on the land legislation and land holding pattern in the united Andhra Pradesh. Land legislation in the united Andhra Pradesh can we observed below.

AP Land encroachment Act, 1905

This act provided the measures to protect the government's land or property from unauthorized encroachment by any individual. If any unauthorized person re-enters and occupies land from which he was dispossessed, he would be punished with detention up to 6 months or with fine up to Rs.1000/- or with both. (Section 6 (3) of the Act), (A.P. land encroachment act, 1905)

Jagirdari abolition regulation 1949

After taking over Hyderabad state, Indian Government had implemented the Jagirdari abolition and appointed an agrarian inquiry committee to recommend the comprehensive land reform legislation in 1949.

The AP Tenancy and Agricultural Land Act, 1950

The main objective of A.P. (Telangana area) tenancy act is protection to tenants who cultivate the land by lease. The act mainly mentions that no tenancy would be generated after the termination of 3 years from the date of the beginning of the Act. Landlords should not terminate the tenants from the leased land before the expiry date of tenure. The government determines the area of family holdings. If the landowner does not own more than three times of family holdings may lease out for a period of five years (AP Land committee report 2006 by Koneru Ranga Rao).

A.P Abolition of Inam Act, 1955

The settlement of Inams was not active. Only those who applied for settlement acquired the occupancy rights and the land titles were settled in their name. Though as per the statistics available in the office of the Chief Commissioner of Land Administration, 9,

08,575 acres were settled so far under A.P. (Andhra Area) Inam Abolition Act, 1956, A.P. (Telangana Area) Inam Abolition Act.

The AP Tenancy Act, 1956

In Andhra area, tenancy act was enacted in 1956. This act mainly concentrated on the payment of the fair rent by the tenant and regulations on the tenant and landowner relations. If the maximum rent on leased land and the occupancy rights were fixed, he could work very hard and feel secured. The landlord was also permitted to take the land back from the tenant for personal cultivation.

The Andhra Pradesh Rights in Land and Pattadar Pass Books Act, 1971

An important objective of this act is that it provided the title to the owners and established ownership of Pattadar owners over the ryotwari lands through Pattadar passbooks and title actions. Providing pass books to the farmers enabled them to get institutional credit and also easy access to land-related public policies.

The Andhra Pradesh Occupants of Homesteads (Conferment of Ownership) Act, 1976 etc.)

Under the act of right of ownership, landless agriculturists, agricultural laborers, and artisans in respect of places occupied, nearby their dwelling houses or huts in rural areas in the state (AP Land committee report 2006 by Koneru Ranga Rao).

AP Land Reforms (Ceiling on Agricultural Holdings) Act, 1973

Under this act, the state has imposed the ceiling limit on the big landowners, who owned more than ceiling limit across the state. Proposed in Agenda Notes 1985 of Regional Minister's Conference, ceiling limit in Andhra Pradesh for irrigated land with two crops was 10-18 acres, irrigated land with one crop 15-27 acres, and dry land 35-54 acres (Agriculture census 2010-11). From the table 4.1, it can be observed that, in combined Andhra Pradesh based on ceiling limit area, 8, 43,183 acres of land were declared, but 6, 51, 823 acres of land were taken into possession, and 5, 88, 925 acres were distributed to 5, 30, 852 individual beneficiaries. The state could not take a position on 1, 91, 360 acres ceiling surplus land because of the land litigation. Out of the 6, 51,823 acres of possessed

land, 5, 88, 925 acres were distributed. Surplus land had been distributed among the landless SCs, STs, and Others communities

Table 4.1 Implementation of land ceiling act in Andhra Pradesh till September 2006.

Area declared surplus (in acres)	Area taken possession	Area distributed to individual beneficiaries	Total no. of beneficiaries	Scheduled caste beneficiaries		Scheduled tribe beneficiaries		Other beneficiaries	
				N0.	Area acres	No	Area acres	No	Area acres
843183	651823	588925	530852	224846	233502	85637	120720	220369	234703

Source: Ministry of Rural Development, Govt. India 2006-07 annual report.

Out of the total distributed land, 2, 33,502 acres were distributed to 2, 48,846 Scheduled Caste beneficiaries, 1, 20,720 acres were distributed to 85,637 Scheduled Tribe beneficiaries, and 2, 34,703 acres distributed to 2, 20,369 other caste beneficiaries. But in most of the places, surplus land was assigned to households and poor individuals, but they were not in possession of land because the land was under the control of the original stated (AP land reforms act 1973).

The AP Assigned Lands (Prohibition of Transfer) Act, l977

This act prohibited transfer (through alienation/sale to a third party) of land allocated to the landless poor persons. If the land assigned to the poor person were found in the hands of the third person by government authorities, the government officers might take the possession of the assigned land, after removal of person in possession by giving him various chances and give back the land to the original assignee.

AP Land Grabbing (Prohibition) Act, 1982

This Act was intended mainly to stop and control the illegal activity of grabbing government land, a local authority, a religious or charitable institution or endowment including Wakf board, temple, and church, or any other private property, either individually or in groups either by influence or force or crumbling or otherwise.

4.2. Land Holding Pattern in Combined Andhra Pradesh

Andhra Pradesh as a combined state consisted of three regions such as coastal Andhra, Telangana, and Rayalaseema, and with total 23 districts. Andhra Pradesh was established

in 1956, November 1st. The state implemented land reforms and distributed land to landless poor. From the table 4.2 below, we can notice the percentage distribution of operational holdings and operated area among the class groups over the period. Out of total operated area by 1970-71, 47.23 percent marginal and 19.17 percent small operational land holding households controlled 9.30 percent and 11.70 percent operated area respectively, while 18.20 percent semi- medium, 11.90 percent medium, and 3.50 percent large operational land holding households controlled 21.90 percent, 31.30 percent, and 25.20 percent operated area respectively. 66.4 percent marginal and small operational holdings controlled only 21 percent operated area, while 33.6 percent semi medium, medium, and large operational holders controlled 79 percent operated area. This reflects huge inequality in the distribution of land. By 2012-13, 77.74 percent marginal and small operational holdings held 44.35 percent operated area. Here, percentage of increase of marginal and small operational holdings is more than the increase of operated area. Increase of percentage of operated area is more towards the semi-medium operational holdings, while there is decrease in the medium and large operational holdings and operated area. The important reasons for increase in marginal, small, and semi-medium holdings is fragmentation of land and large farmers moving to nearby cities as entrepreneurs.

Table 4.2 Percentage distribution of operational holdings and operated area by the size groups in combined Andhra Pradesh.

	1971-72		1981-82		1991-92		2002-03		2012-13	
Size wise	%. of opera hoh.	% op. area owned	%. of opera hoh.	% op. area owned	%. of opera hoh.	% op. area owned	%. of opera hoh.	% op. area owned	%. of opera hoh.	% op. area owned
Marginal	47.23	9.30	48.60	10.30	59.30	17.50	60.70	18.60	50.66	16.28
Small	19.17	11.70	22.20	15.30	21.40	23.30	20.70	21.10	27.08	28.07
Semi – medium	18.20	21.90	15.50	21.10	13.20	26.30	12.00	22.80	18.38	36.08
Medium	11.90	31.30	10.80	30.20	5.30	23.50	5.50	22.10	3.58	17.04
Large	3.50	25.80	2.90	23.10	0.80	9.40	1.10	15.40	0.26	2.52
total	100	100	100	100	100	100	100	100	100	100
Gini coefficient	**0.58**		**0.57**		**0.53**		**0.54**		**0.45**	

Source: 70th NSSO round.

Gini Coefficient values show the range of inequality. It was 0.58 in 1971-72 and 0.45 in 2012-13. There is decline in inequality among the size groups over the period. Figure 4.1 observes that Lorenz curve shows the inequality by observing the distance between equal

curve and Lorenz curve. Inequality still exists distribution of operational holdings and operated area among size group households.

Figure 4.1 Lorenz curve to measure the inequality among the size groups from 1971-72 to 2012-13.

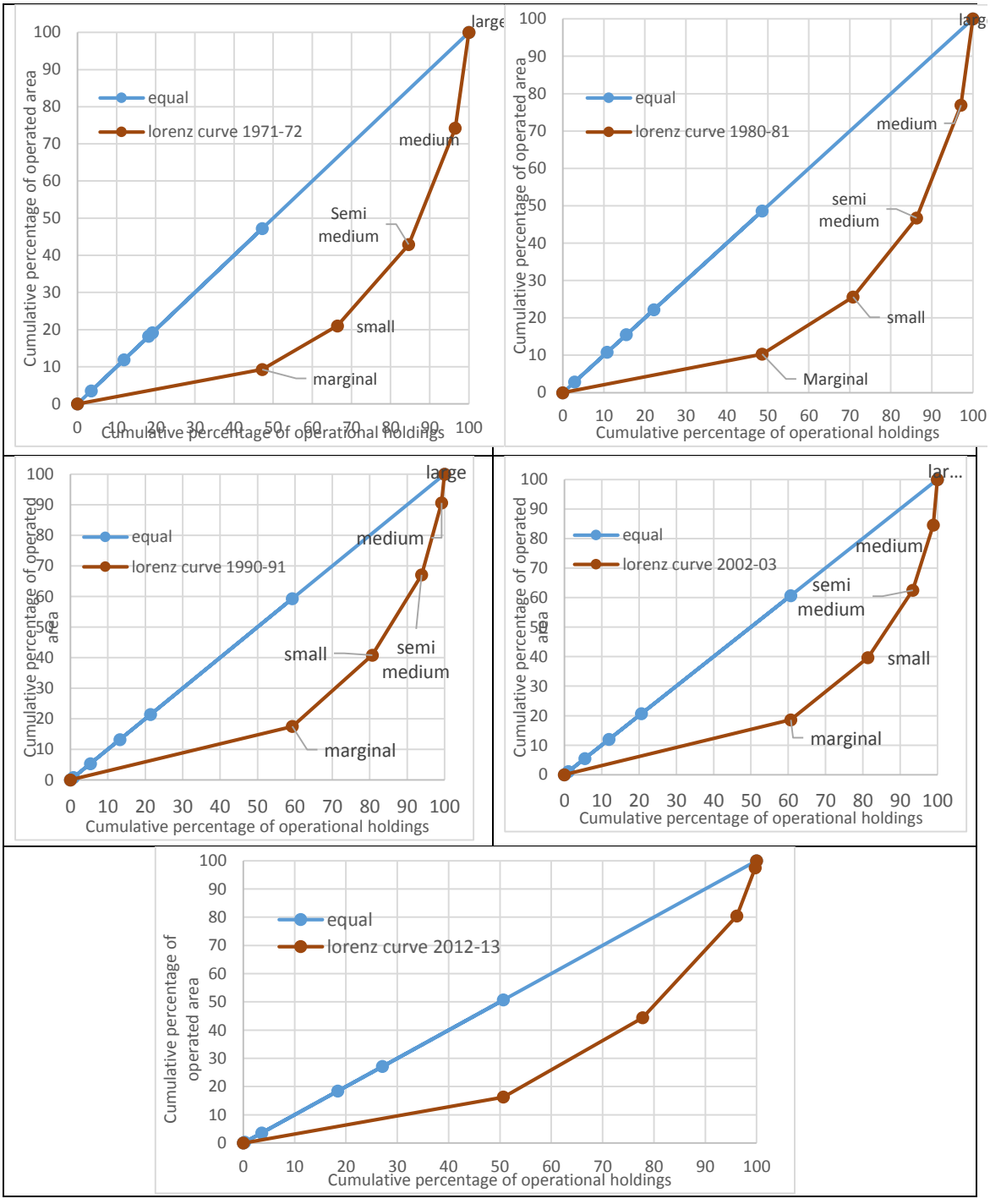


Table 4.3 shows the percentage distribution of operational holdings and operated area among the social groups. By 2000-01, 11.1 percent of SCs operational holding households held 7.7 percent operated area, and 8.0 percent of STs operational holdings households held the 8.8 percent operated area, while 80.9 percent Others operational holding households held the 83.5 percent operated area of total operated area. This clearly shows that SCs operated area is less than their operational holding, but in the case of STs and Others it is not the same. There was same situation in 2010-11, as it was in 2000-01. Even though there is distribution of surplus land to landless poor, most of the SCs are far away from having own land.

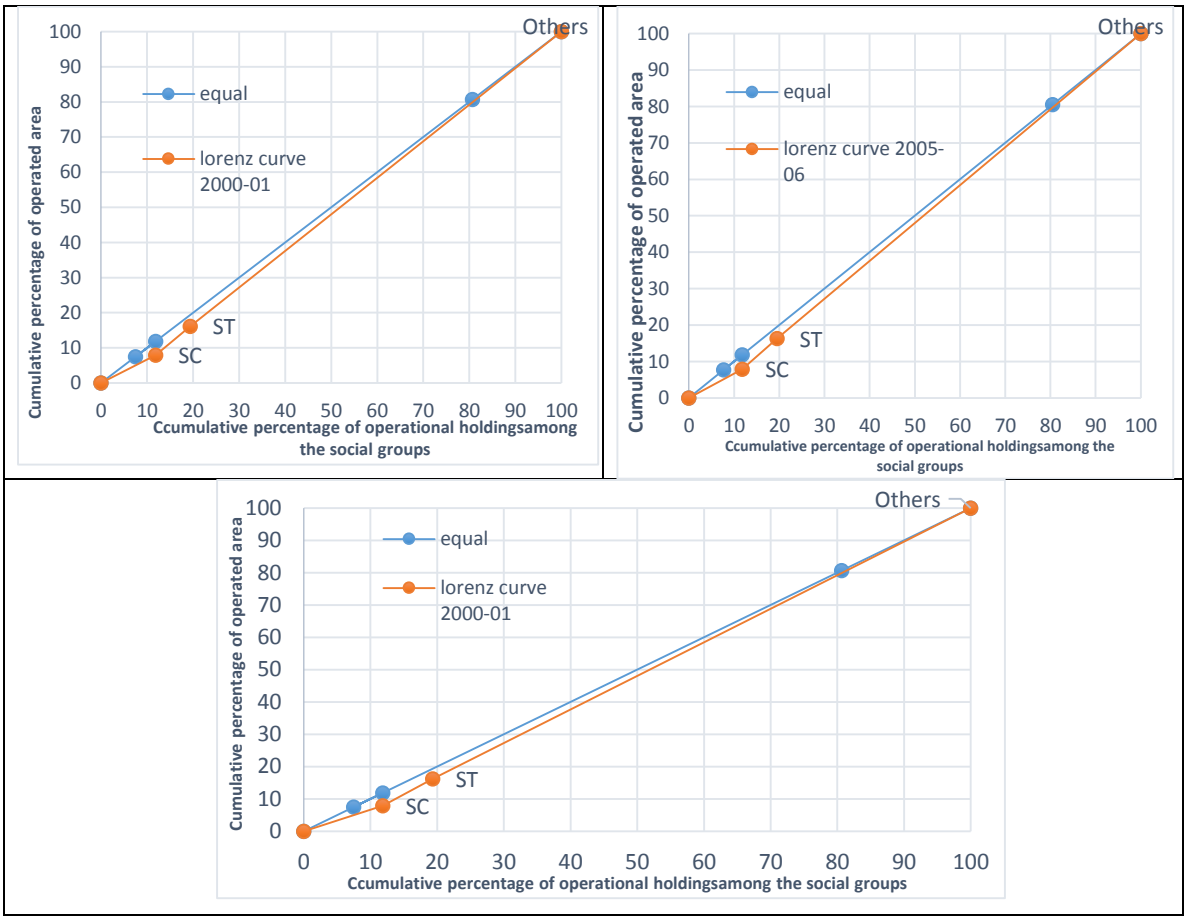
Table 4.3 Percentage distribution of operational holdings and operated area among the social groups in combined Andhra Pradesh from 2000-01 to 2010-11.

Social groups	2000-01		2005-06		2010-11	
	Opera.hol	oper.area	opera.hol	oper.area	opera.hol	oper.area
SC	11.1	7.7	11.8	7.9	11.9	7.9
ST	8.0	8.8	7.7	8.4	7.5	8.3
Others	80.9	83.5	80.5	83.7	80.7	83.8
Total	100	100	100	100	100	100
Gini coefficient	0.036		0.035		0.030	

Source: Various agriculture census data, Directorate of economics and statistics, Gov. of Telangana.

Figure 4.2 shows the inequality in the distribution of operational and operated area among the social groups in the combined Andhra Pradesh. Gini coefficient value in 2000-01 was 0.036, in 2005-06, it was 0.035, and in 2010-11, it was 0.030. This is less inequality among the social groups.

Figure 4.2 Lorenz curve for measuring the inequality among the social groups in Combined Andhra Pradesh from 2000-01 to 2010-11.



4.3. Land Holding Pattern among the districts in Telangana

After observing landholding pattern in united Andhra Pradesh, let us concentrated on landholding pattern and inequality among the size groups and class groups among the districts of Telangana, where number of farmer's suicides have been taking place after the formation of state. Telangana as a state was established in 2014. Earlier, it was one of the regions in the combined Andhra Pradesh. As a state, it consisted of 10 districts, namely Adilabad, Nizamabad, Karimnagar, Medak, Ranga Reddy, Mahabubnagar, Nalgonda, Warangal, Khammam, and Hyderabad.

From the appendix table 4.A, distribution of operational holdings and operated area among the size groups in each district in Telangana can be observed during the three agriculture census (2000-01 to 2010-11). By 2000-1, it shows the highest marginal holdings of total

operational holdings of each district in Telangana. Firstly, within the Nizamabad district accounted for 66.4 percent marginal holdings of total operational holdings, which constituted 29.2 percent of the total operated area, while large holdings accounted for 0.2 percent and area under this covered 5.3 percent of the total operated area. Secondly, within the Karimnagar district, marginal holdings accounted for 65.7 percent of total operational holdings which constituted 27.0 percent of the total operated area, while large holdings constituted 0.3 percent of total operational holdings. Within Mahabubnagar and Ranga Reddy districts, has the lowest marginal holding of their total operational holdings compared to other districts of Telangana. Marginal holdings as a percentage of total operational holdings in 2010-11 were highest in Nizamabad, Karimnagar, Medak, and Warangal districts.

Table 4.4 shows average size of holdings and Gini Coefficient values in each district in Telangana. State average size of land holdings in the Telangana marginally decreased over the period from 1.37 hectares in 2000-01 to 1.12 hectares in 2010-11. By 2000-01, average size of holdings was highest for Adilabad district i.e. 1.60 hectares and lowest for the Nizamabad i.e. 1.01 hectares, and it was the same in 2005-06 and 2010-11.

Table 4.4 Average size of holdings and Gini coefficient among each district in the Telangana.

	2000-01	2005-06	2010-11	2000-01	2005-06	2010-11
Districts	Average size Holdings (in hectare)	Average size Holdings (in hectare)	Average size holdings (in hectare)	Gini coefficient	Gini coefficient	Gini coefficient
Adilabad	1.60	1.54	1.40	0.48	0.46	0.44
Nizamabad	1.01	0.96	0.92	0.44	0.40	0.38
Karimnagar	1.05	1.04	0.96	0.46	0.45	0.42
Medak	1.19	1.13	0.97	0.49	0.47	0.44
Ranga Reddy	1.53	1.49	1.22	0.48	0.47	0.44
Mahabubnagar	1.67	1.55	1.23	0.54	0.48	0.45
Nalgonda	1.48	1.41	1.19	0.49	0.49	0.44
Warangal	1.26	1.24	1.01	0.52	0.51	0.45
Khammam	1.44	1.35	1.14	0.49	0.48	0.44
Total	**1.37**	**1.30**	**1.12**	**0.49**	**0.48**	**0.44**

Source: various agriculture census data of Directorate of economics and statistics, Telangana government.

Table 4.4, Gini Coefficient values can tell the existence of inequality among the size groups in each district. Gini Concentration was highest in Mahabubnagar with 0.54 in 2000-01,

while it was the lowest in Nizamabad and it shows the same in 2010-11. Inequality in Mahabubnagar and Warangal districts is higher than the Telangana state by observing the Gini coefficient. In Telangana, Gini concentration shows 0.49 in 2000-01, 0.48 in 2005-06, and 0.44 in 2010-11. Still, there is higher presence of inequality among the size groups, even though there is a slight decrease in the values of Gini Coefficient in the state and among the districts.

The table 4.5 below shows the percentage distribution operational holdings and operated area among the different social groups across Telangana region. In 2000-01, scheduled castes holdings comprised 14.6 percent of total operational holdings and area under their control was 9.7 percent of total operated area, while scheduled tribes accounted for 11.3 percent and area under their control was 11.5 percent and the holdings of the Others group accounted for 74.0 percent of total operational holdings which controlled 78.8 percent of total operated area. The average size of holdings of scheduled castes had been decreasing from 2000-01 to 2010-11 compared to reaming social groups. State average size of holdings also decreased from 1.36 (ha) in 2000-01 to 1.11 (ha) in 2010-11.

Table 4.5 The Percentage of operational holdings and area operated among the social groups in Telangana.

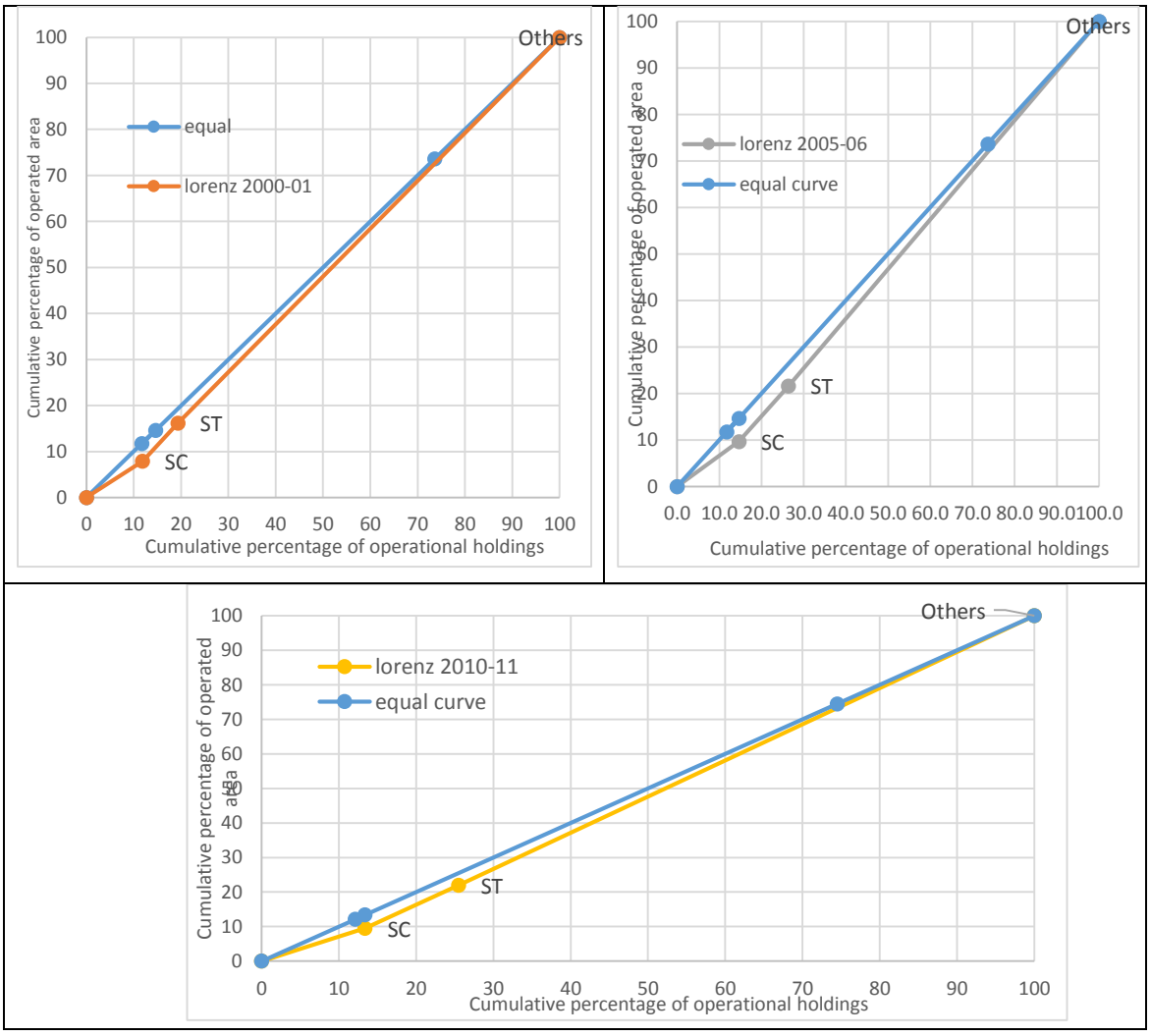
Size	2000-01		2005-06		2010-11		Average. Holdings (ha.)		
	% of opera. hol	% of oper.area	% of opera. hol	% of oper.area	% of opera. hol	% of oper. area	2000-1	2005-06	2010-11
SC	14.6	9.7	14.6	9.6	13.4	9.5	0.90	0.85	0.79
ST	11.3	11.5	11.7	11.9	12.1	12.5	1.38	1.32	1.14
Others	74.0	78.8	73.6	78.4	74.5	78.0	1.45	1.38	1.16
Total	100	100	100	100	100	100	1.36	1.30	1.11
Gini .co	**0.054**		**0.053**		**0.040**				

Source: various agriculture census data of Directorate of economics and statistics, Telangana government.

To measure the inequality among the social groups over the period in Telangana, Lorenz curve has to be drawn and Gini coefficient has to be calculated. From the figure 4.3 below, it can be seen that Lorenz curves are far away from the equal curve of the graph. Gini concentration values are 0.054 in the 2000-1, 0.053 in 2005-06 and 0.040 in 2010-11. The Gini concentration values reveal that inequalities are still existing in the distribution of

operated area among the social groups in Telangana state, even though it has been decreased over the period.

Figure 4.3 Lorenz curve for measuring the inequality among the social groups at Telangana region from 2000-01 to 2010-11.



Appendix table 4.B depicts the percentage distribution of operational holdings and operated area among the social groups in each district in Telangana. By 2000-01, the percentage of SCs operational holdings were highest in Ranga Reddy and Karimnagar districts, while the percentage of STs operational holdings were highest in the Khammam and Adilabad districts. In 2010-11, there was the highest percentage of SCs operational holdings in the Medak, Ranga Reddy, and Adilabad districts, while the highest percentage

of STs operational holdings were in Khammam and Adilabad districts, that is because their population is more in these districts.

Here, the table 4.6 below shows the existence of inequalities in each district among the social groups through the Gini coefficient values. The Gini Coefficient values tell that, in Nalgonda district, more inequality existed among the social groups such as 0.075 in 2000-01, 0.079 in 2005-06, and 0.067 in 2010-11 followed by Karimnagar district such as 0.066 in 2000-01, 0.069 in 2005-06 and 0.053 in 2013compared to rest of the districts. Inequality is less in Adilabad district in the distribution of operated area among the social groups.

Table 4.6 Gini coefficient values among social groups all districts in Telangana.

District Year	**2000-01**	**2005-06**	**2010-11**
	Gini coefficient values	**Gini coefficient values**	**Gini coefficient values**
ADILABAD	0.004	0.006	0.006
NIZAMABAD	0.051	0.048	0.041
KARIMNAGAR	0.066	0.069	0.053
MEDAK	0.106	0.055	0.043
RANGAREDDY	0.067	0.065	0.050
MAHABUBNAGAR	0.064	0.062	0.047
NALGONDA	0.075	0.079	0.067
WARANGAL	0.058	0.071	0.048
KHAMMAM	0.056	0.049	0.050
Total Telangana	0.091	0.053	0.040

Source: author calculation based on operational and operated area data of directorate of economics and statistics.

4.4. The Social Composition of Population in Telangana.

Telangana is a newly established state after bifurcation from Andhra Pradesh. It is 12th in place of demographics and geography in India. In the table 4.7 below, the social composition of the population in Telangana has been depicted. Scheduled Caste population is highest in Karimnagar district constituting 18.79 percent, followed by Nalgonda with 18.27 percent and Adilabad 17.82 percent of population in the concerned district. Scheduled Tribes population is highest in Khammam with 25.18 percent followed by Adilabad with 18.09 percent and Warangal with 15.11 percent of total population in the concerned district. The population in "Others" category is highest in Hyderabad with 92.47

percent following Ranga Reddy with 83.56 percent. Overall in the state, SCs are 15.45 percent, STs are 9.08 percent, and the Others are 75.47 percent.

Table 4.7 Social Composition of Population in each district in Telangana.

Districts/ census	% SC Population	% ST Population	% Others population	Total
Adilabad	17.82	18.09	64.09	100
Nizamabad	14.54	7.56	77.9	100
Karimnagar	18.79	2.83	78.37	100
Medak	17.73	5.57	76.7	100
Ranga Reddy	12.31	4.13	83.56	100
Mahabubnagar	17.49	8.99	73.52	100
Nalgonda	18.27	11.3	70.43	100
Warangal	17.54	15.11	17.54	100
Khammam	16.84	25.18	57.98	100
Hyderabad	6.29	1.24	92.47	100
Total	**15.45**	**9.08**	**75.47**	**100**

Source: statistical yearbook 2015, directorate of economics and statistics, Telangana government.

4.5. Agriculture Growth Performance in Production Area, And Yield in Combined Andhra Pradesh

The state of Andhra Pradesh existed from 1956 to 2014 with Hyderabad as its capital. Andhra Pradesh comprised of three regions, which were Andhra, Telangana, and Rayalaseema. It was bifurcated into two states viz. Andhra Pradesh and Telangana. Andhra Pradesh has three regions have different socio-economic conditions. Here, the compound annual growth rate was used to analyze the 60 years agriculture performance of the combined Andhra Pradesh from 1955-56 to 2013-14. Before going to agriculture performance, there is a need to know the irrigation facilities in the state which is the main source for agriculture development and growth. Two rivers such as Krishna and Godavari along with other sub rivers flow across the three regions in the state. Two big dams were constructed across the Krishna River in the state such as Nagarjuna sager and Srisailam dam. Water from these two dams is used in the form of drinking water and irrigation and also for generating hydroelectric power all over the state. Moreover, Godavari River is also one of the biggest rivers in the state. There are some dams that have been constructed across the river such as Sriram Sagar, Badrachalam, and Dawaleswaram dam. These are mainly used for the purpose of irrigation and drinking in the state.

The rivers and their tributaries that flow through the state are mainly useful for agriculture. Moreover, there are other factors that also help in the development of agriculture in the state such as manpower machinery, institutional credit, etc. The agricultural growth in the combined state can be seen from the table 4.8 below, beginning from 1955 till 2014 based on the available data. It can be divided into three stages in agriculture performance based on Indian economic transformation. There is also the performance of agriculture all over Indian states based on pre-green revolution (1956 to 1965), post green revolution (1965-66 to 1984-85), and post economic reforms period (1985-86 to 2013-14).

Table 4.8 Compound Annual Growth Rate (CAGR %) of Production and Area Principle Commodities in Andhra Pradesh.

Commodity Year	RICE		Total cereals		Total pulses		Total food grains		Groundnut		Cotton		Chilly	
	pro	area	pro	area	pro	area	pro	area	pro	area	pro	area	pro	area
1955-56 to 1964-1965	4.4	2.4	3.3	1.0	1.5	0.8	3.2	1.0	-1.7	-1.3	1.3	-0.9	1.3	-0.7
1965-66 to 1974-75	3.9	1.2	4.2	0.9	3.6	1.1	4.2	0.9	8.4	1.7	18.7	4.0	4.3	2.0
1975-76 to 1984-85	1.8	-1.1	1.2	-1.8	1.0	-0.7	1.2	-1.6	1.2	2.3	15.2	7.9	6.6	0.7
1985-86 to 1994-95	2.6	0.5	1.9	-1.6	4.7	1.8	2.0	-0.9	2.5	2.7	6.7	3.1	0.7	-0.8
1995-96 to 2004-05	0.2	-1.8	1.0	-1.6	8.9	1.2	1.7	-0.9	-4.6	-1.9	3.1	1.1	7.5	1.5
2004-05 to 2013-14	-8.3	0.02	-4.8	0.7	-4.6	-2.8	-4.8	-0.5	-10.1	-3.4	30.5	8.7	4.3	-0.4

Source: Directorate of economics and statistics, Gov. of Andhra Pradesh from 1955-56 to 2013-14

We can see the pre-green revolution period agriculture growth performance in Andhra Pradesh, except groundnut CAGR of production of various commodities in Andhra Pradesh had maintained positive growth per annum. CAGR of the area of all commodities except ground nut and chilly has the positive growth per annum. During the period of the green revolution, all food grain crops maintained positive growth with declining percent growth rate of area per annum. But the remaining commodities such as groundnut, cotton, chilly, etc. maintained positive growth by increasing the percent growth rate of the area. During the post-economic period except for cotton, chilly, and tobacco, all commodities CAGR of production and area declined intensely from 2004-05 to 2013-14. Cotton achieved 30.5 percent growth rate in the production and 8.7 percent growth rate in the area. In the same

period, rice achieved -8.3 percent of the negative growth in the production per annum and even though increased in area by 0.02.Another important thing should be observed that from the table 4.9 below, CAGR has been calculated based on state average yield of every product. Increasing the production by increasing the area is not important, In addition to it, increasing the production by increasing the productivity and by reducing the area is more important. Per annum, percent of CAGR of yield of the commodities except for total cereals, all food grain commodities have been decreasing from positive to negative growth over the years. Moreover, percentage of CAGR of yield for all commercial crops per annum had been increasing from low and negative to positive growth over the period.

Table 4.9 Compound Annual Growth Rate (CAGR %) of Yield of Principle Commodities in Andhra Pradesh.

Year Commodity	1955-56 to 1964-1965	1965-66 to 1974-75	1975-76 to 1984-85	1985-86 to 1994-95	1995-96 to 2004-05	2004-05 to 2013-14
Rice	3.1	2.3	1.4	2.0	2.0	0.8
Total cereals	2.8	4.1	0.1	3.1	2.4	3.4
Total pulses	1.7	2.7	1.0	-0.2	1.3	-2.1
Total food grains	2.2	3.3	2.8	3.0	2.6	-4.7
Ground nut	-0.6	2.9	0.4	1.2	1.8	2
Cotton	-1.1	13.3	3.5	6.7	0.8	3.0
Chilly	0.6	0.5	5.8	2.3	5.2	27.1

Source: Directorate of economics and statistics, Gov. of Andhra Pradesh from 1955-56 to 2014-15

4.6. Indebtedness

Nowadays agriculture farmers are in dangerous zone. They are facing lack of credit problems during the cropping period and also Indian agriculture mainly depends on rainfall. Farmers become indebted due to lack of institutional credit and failure of the crops. The table 4.10 shows indebtedness of farmer households in 2003 in combined Andhra Pradesh where 82 percent of indebted farmers existed. We can observe the percentage of indebted farmers among the social groups in 2013 the percentage of indebted farmer households have increased in all the social groups except the STs. In both the states by 2013, highest percent indebted farmer households are among the SCs followed by OBCs and Others.

Table 4.10 Indebtedness of farmer households in different social groups at Andhra Pradesh level.

NSSO 59th round 2003		NSSO 70th round 2013	
Social group	% indebted households (U. AP)	% indebted households (AP)	% indebted households (Telangana)
ST	78	73.3	77.5
SC	79.4	97.6	91.2
OBC	83.2	93.7	91.8
Others	83.6	93.6	89.6
All	82	92.9	89.1

Source: NSSO, Situation Assessment Survey of Farmers, 2003&2013

The table 4.11 shows the sectoral distribution of advances given by the commercial banks for priority sector. Advances are given by the commercial banks for agriculture and allied sector has been decreasing over the years. There has been an increase in the percent of the loan that is given to other priority sector.

Table 4.11 Sectorial distribution of priority sector advances in AP by Scheduled Commercial Banks. (Outstanding amount in %)

Items Year Sectors	**Agri. And allied sectors**			**SSI**	**Education**	**Housing**	**Other Priority**	**Total**
	Direct	**Indirect**	**Total**					
1995-96	45	7	52	32	Na	3	13	100(6807)
1996-97	46	7	53	29	Na	Na	Na	100(7800)
1997-98	40	7	47	43	1	3	6	100(9507)
1998-99	34	7	41	36	1	4	18	100(12412)
1999-00	34	8	45	42	1	8	4	100(12560)
2000-01	34	9	43	34	2	10	6	100(14495)
2001-02	35	6	41	43	2	12	3	100(16678)
2002-03	34	7	41	32	3	20	4	100(20727)
2003-04	33	6	39	28	3	24	6	100(25602)
2004-05	34.87	10.62	45.49	24.29	4.06	23.46	2.74	100(337501)
2005-06	36.4	11.75	48.39	22.75	4.27	19.37	5.2	100(473352)
2006-07	36.59	7.27	43.87	20.34	3.84	28.3	3.64	100(606465)
2007-08	37	10	47	26	4	22	1	(100(70669)
2008-09	39.04	11.49	50.53	18.37	4.39	21.46	5.37	100(902447)
2009-10	36.38	12.77	49.16	19.37	4.086	18.52	8.98	100(1185190)
2010-11	34.8	12.4	47.09	21.05	3.61	17.67	10.8	100(1408007)
2011-12	36.08	13.4	49.5	22.81	2.97	14.89	9.99	100(1701090)
2012-13	33.38	6.84	40.22	18.62	1.91	11.24	28.06	100(2457572)
2013-14	32.29	5.92	38.22	18.79	1.69	10.28	30.99	100(2934992)

Source: RBI database, statistical tables relating to banks in India, Note: 1. figures in parenthesis are in million rupees. 2. SSI includes the micro industries and enterprises, small business, 3. Other sectors include the SHG, Export loan, SC, ST and other weak section loans.

There has been increased dependence on the non-institutional credit by the agriculture farmers, due to decrease in loan advances given by the commercial banks. Scheduled

commercial banks are not giving loans to the farmers especially marginal and small farmers, Even there is regulations from the government to give loans to the farmers without delay.

4.7. Access to Land in Nalgonda District

In the ancient days, Nalgonda region was a part of various kingdoms in which Kakatiya, Bahamani, and Qutb Shai rulers ruled and it was also an extension to Mughal Empire. In the early part of the 18th century, it was separated after the formation of Hyderabad state by Asaf Jahi Empire. Later, it became part of the erstwhile undivided Andhra Pradesh with effect from November 1, 1956 under the Act of Reorganization of states. After the formation of Telangana state on June 2014, Nalgonda became a part of Telangana. Nalgonda is one of the highest Scheduled Caste population district after Karimnagar district. After the analyses of state level inequality in landholdings, it was seen that Nalgonda district contained highest inequality among the social groups and class groups. This chapter mainly discusses on the historical and geographical back ground of Nalgonda, demographic structure, and land holding pattern in Nalgonda, agriculture production, area, and yield in Nalgonda.

4.7.1. Historical and Geographical Background of Nalgonda

The district of Nalgonda is popular for its revolutionary activities in Telangana region to confront any type of oppressions by rulers. During the period of Nizam, the people of this region were looted and harassed by the private army of Nizam known as Razakars. To confront the Razakars, Telangana peasant struggle started from Nalgonda and Warangal, and then spread across Telangana. Many died during the struggle with Razakars to protect their assets, families, and food grains. Nalgonda was also well known for "Bhoodan Movement," which was started by Acharya Vinobha Bhave at Pochampally Mandal in the district. Through the Bhoodan movement, Vinobha Bhave asked landlords to donate their lands to distribute to the landless poor. Many landless people benefited which was 42,199 in combined Andhra Pradesh, but also in the rest of the country through this movement.

Nalgonda, as a district, appears to be a triangle surrounded by Medak and Warangal districts on the north, parts of Mahabubnagar and Guntur districts on the south, Khammam and Krishna districts on the east, and parts of Mahabubnagar and Ranga Reddy districts on

the west. With its distinct geographical features across the district, Nalgonda contains black, red, and silt soil. The rivers Krishna and one of its tributaries Musi flow through the district. Nagarjuna Sagar Dam and Musi Dam are two dams in the district. Based on the availability of irrigation facilities, the district can be divided into four parts; the northern part of the district is irrigated through Musi River and the eastern part through Nagarjuna Sagar left canal, whereas the western and southern parts depend on rainfall for cultivation. However, these two parts are adversely affected by drought compared to the north and eastern parts.

Figure 4.4: Geographical structure of Nalgonda district

The eastern part is very rich in irrigation facilities, thus helping farmers to cultivate better compared to the rest of the parts. The eastern part and some part of the northern part are popular for paddy as the major crop and maize and pulses as second major crops. Cotton is a major crop in western, southern, and some parts of northern parts while fruit gardens and pulses are second major crops. In terms of revenue divisions, Nalgonda district has 5

revenue divisions- Nalgonda, Suryapet, Miryalaguda, Bhongir, and Deverakonda and they consist of 59 Mandals, 1,135 villages, 8 municipalities, 12 Member of Legislative Assembly (MLA), and 2 Member of Parliament (MP) constituencies.

4.7.2. Demographical Background of Nalgonda District

Of the total population in the district of Nalgonda, 50.44 percent are male and 49.56 percent female. The urban population constitutes 18.99 percent and rural population 81.01 percent of the total population, which indicates that the population is highly concentrated in the rural areas rather than the urban areas.

The density of population (persons per square kilometer) is 245 in the district. The percentage of the total Scheduled Castes (SCs) population is 18.27 of the total population of the district with the SC male population being 18.9 percent of the total male population and the percentage of SC female population is 18.45 of the total female population, whereas the percentage of total Scheduled Tribes (STs) population is 11.30 of the total district population with the percentage of the STs male population being 11.59 of the total male population of the district and the percentage of STs female population being 11.01 of the total female population of the district.

In terms of the working population, it is 49.92 percent and the non-working population constitutes 50.08 percent in the district. The percentage of main workers stands at 42.81 percent and marginal workers is 7.12 percent of the total workers. The percent of cultivators is 18.67 percent while agriculture labour constitutes 49.56 percent. The workers in the household industry constitute 2.62 percent and other workers constitute 29.18 percent of the total marginal and main workers.

The literacy of the district is 64.20 percent which is less than the percentage of the literacy rate of the state i.e. 66.46 percent. Of the total male population of the district, male literates constitute 70.10 percent, which is less than the percentage of state male literacy rate of 74.95 percent. Similarly, of the total female population of the district, female literates constitute 54.19 percent, which is less than the percentage of state female literacy rate 57.92 percent. The literacy rate of Scheduled Castes (SCs) stands at 60.75 percent of total district population of SCs. It is 48.08 percent for Scheduled Tribes (STs). In the district, the urban literacy rate is 81.69 percent and rural literacy rate is 60.07 percent. It emerges from the

female literacy rate that the education for women in the district is neglected compared to men.

Table 4.12 Demographic characteristics of the Nalgonda district.

	Population (in Million)			% of Total population	Literacy rate (in percentage)		
Male	17,59,772			50.44	70.10		
Female	17,29,037			49.56	54.19		
Total	34,88,809			100	**Total literacy**	**SCs**	**STs**
					64.20	60.75	48.08
Rural	28,26,302			81.01	60.07		
Urban	6,62,507			18.99	81.69		
Total	3488809			100	64.20		
Number of households	The density of Population(Persons per sq. Km.)			Sex ratio Total	Rural sex ratio		Urban sex ratio
8,72,911	245			983	980		995
Scheduled Castes (pop)	% of SC Male Tot. pop	% of SC female Tot. pop	% of Total SCs	Scheduled tribes (pop)	% of ST Male Tot pp	% of ST female Tot. pop	% of Total STs Tot. pop
6,37,385	18.09	18.45	18.27	3,94,279	11.59	11.01	11.30
% of Non-workers	Main workers	Marginal workers	% of total Workers	Cultivators	Agric ulture labor	Workers In hou. industry	Other workers
50.08	42.81	7.12	49.92	18.67	49.56	2.62	29.18

Source: Census 2011.

4.8. Operational Holdings and Operated Area in Nalgonda district

Nalgonda boasts of a history that fought against the Razakars and feudal landlords. In addition, many prominent leaders hailed from this district at the forefront of the communists-led Telangana peasant movement. Nalgonda as a district comprises 18.27 percent SCs, 11.3 percent STs, and 70.43 percent Others of the total population. Nalgonda district has the second highest SC population in the state. From Table 4.13, the percentage of distribution of operational holdings and operated area among the size groups can be observed. By 2000-01, marginal holdings constituted 53.43 percent and area under their control was 16.8 percent, while small holdings accounted for 24.8 percent of total

operational holdings and area under command were 23.8 percent of the total operated area. Marginal and small holdings constituted 78.3 percent of total operational holdings and area under their control was only 40.4 percent of the total operated area. The semi-medium, medium, and large operational holdings constituted 21.7 percent of total operational holdings and area under their control was 59.6 percent of the total operated area. It can also be seen in the years 2005-06 and 2010-11. The distribution of operated area among the size groups was very unequal. It can be observed from the Gini Coefficient values of 0.49 in 2000-01, 0.49 in 2005-06, and 0.44 in 2010-11.

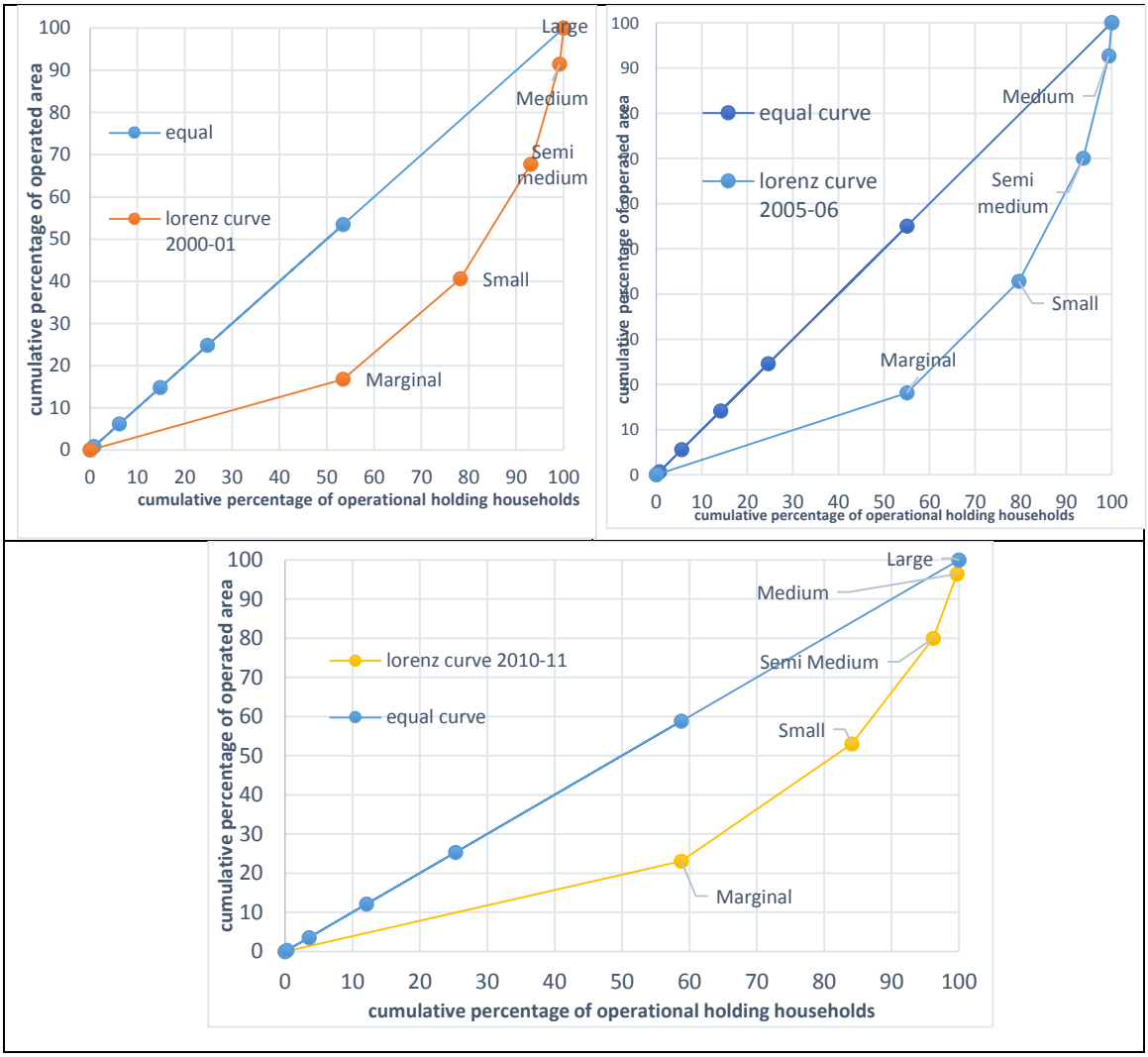
Table 4.13 Percentage of operational holdings and area operated among the size groups in Nalgonda.

Size	**2000- 01**		**2005- 06**		**2010- 11**	
	% of opera.hol	**% of oper.area**	**% of opera.hol**	**% of oper.area**	**% of opera.hol**	**% of oper.area**
Marginal	53.5	16.8	55.0	18.1	58.8	23.1
Small	24.8	23.8	24.5	24.7	25.3	29.9
Semi – medium	14.8	27.1	14.2	27.2	12.1	26.9
Medium	6.1	23.8	5.6	22.6	3.5	16.5
Large	0.8	8.5	0.7	7.3	0.3	3.6
total	100	100	100.0	100	100	100
Gini. Coefficient	0.49		0.49		0.44	

Source: Various agriculture census data of Directorate of Economics and Statistics, Govt. of Telangana

Figure 4.5 reveals that inequality existed more among the size groups. Lorenz curves are far away from the equality curve of the graph over the period in the Nalgonda district. It shows that, after Karimnagar district, Nalgonda district had the second highest inequality among the size groups.

Figure 4.5 Lorenz curves for measuring the inequality among the size groups in Nalgonda district from 2000-01 to 2010-11



From Table 4.14 below, it can be noticed that, in 2000-01, the SC holdings constituted 12.9 percent and the area under their control was 7.7 percent. The ST holdings accounted for 10.3 percent of the total operational holdings whereas the area under their command was 10.8 percent of the total operated area. Others which included the Other Backward Class (OBCs) constituted 76.8 percent of the total operational holdings and under their control was 84.0 percent of the total operated area. In 2000-01, the average size of operational holdings of SCs was less than one hectare compared to the remaining social groups in the district. Over the period, the average size of the operational holdings of all social groups had been declining. In 2010-11, the average size of operational holdings of the SCs and

STs was less than one hectare compared to Others. The average size of holdings among the social groups in the district had also been decreasing from 1.480 hectares in 200-01 to 1.191 in 2010-11.

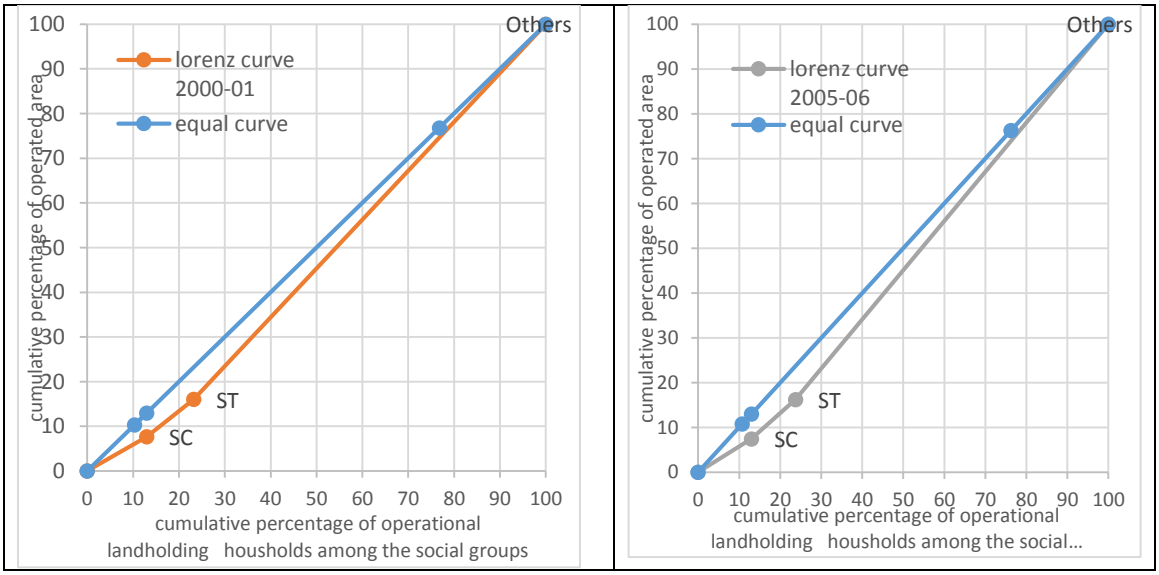
Table 4.14 Percentage of operational holdings and area operated among the social groups in Nalgonda.

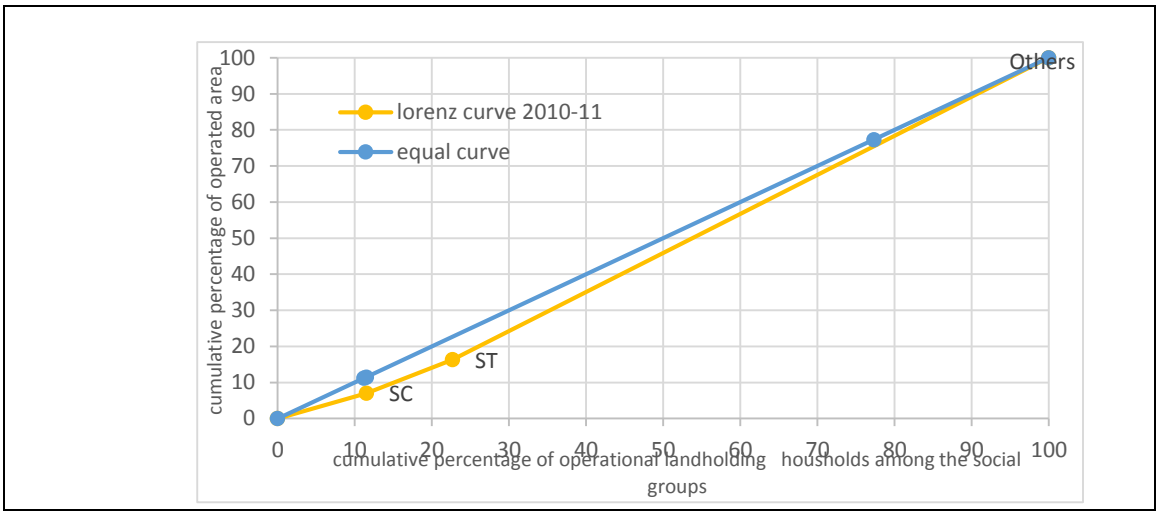
	2000-01		2005-06		2010-11		2000-1	2010-11	2010-11
	% of opera.hol	% of oper.area	% of opera.hol	% of oper.area	% of opera.hol	% of oper.area	ave.hol (ha.)	ave.hol	ave.hol
SC	12.9	7.7	13.0	7.4	11.5	7.0	0.876	0.804	0.725
ST	10.3	8.4	10.8	8.8	11.2	9.3	1.203	1.149	0.993
Others	76.8	84.0	76.3	83.8	77.3	83.7	1.618	1.545	1.290
Total	100.0	100.0	100.0	100.0	100.0	100.0	1.480	1.406	1.191

Source: author calculated based on various agriculture census data of Directorate of economics and statistics, Telangana government.

From Figure 4.6, the inequality among the social groups can be observed from the Lorenz curves. The curve is distant over the period from the equal curve. Gini concentration was 0.075 in 2000-01, 0.079 in 2005-06, and 0.067 in 2010-11.

Figures 4.6 Lorenz curve for measure the inequality among the social groups in Nalgonda district from 2000-01 to 2010-11.





4.9. Land Purchase and Land Distribution Scheme (LPLDS)

The LPLD scheme started on August 15, 2014 to distribute 3 acres of land to landless and near landless Scheduled Caste households. Seeing the fact that, the Scheduled Castes suffered from social discrimination and deprivation and with a view to empowering and assuring them dignity of living, the Government of Telangana initiated the scheme of Land Purchase and distribution of Land to the Women of *Bhoomileni Nirupeda Dalita Vyavasaya Aadharitha Kutumbalu*. The main purpose of the scheme was to give access to self-sustainance rather than wage labor or bondage labor. People benefitted from this scheme, and they raised their income levels by depending on their own land. As a result of that, they got rid of backwardness. There is a notion that own land holding households put more effort on land rather than tenant holding in order to produce more production and yield and reduce the cost of cultivation. Distribution of land to landless poor was important because land is symbol of dignity, social status, and also economic asset in the rural areas. This has been realized in the two villages named Pallephad (23 beneficiaries) and Gangapur (21 beneficiaries).The unused land was brought into cultivation and was made usable. The land which did not provide any returns in the past, was now yielding returns (Thilothu Rao 2017).

Following Observations on Implementation of the LPLDS

Beneficiaries

The distributed land was not appropriate for cultivation. The distributed lands in Gangapur (Gundala mandal) and Pallepahad (Gurampode mandal) villages were a part of the private land and government land. The private land distributed to the beneficiaries was cultivable, but it was dissimilar to the government land distributed as those were not in use for agriculture for past years. To transform the non-cultivable land into cultivable land, they invested an amount ranging from Rs. 25000 to 35000. As some of the distributed lands had bore well irrigation facility, the majority of beneficiaries were in need of bore well motor and electricity facility (Thilothu Rao 2017).

In the Munugode Mandal of Kistapuram village, the government distributed 30 acres of black soil land to 10 beneficiaries. According to their viewpoints, they got good quality lands which were cultivatable. The government gave agriculture investment for first crop and also dug bore wells in distributed lands. They were happy with having three acres of land. Some of the beneficiaries in the village said that "they would not get three acres of land even they work their life time". In the village, the beneficiaries cultivated cotton, their first crop, and got profits.

Purchase of the cultivable and non-fertile land: While purchasing the land government had to buy the cultivable land and non-cultivable land. In one case, the land owner wanted to sell his cultivable land only if the government wanted to buy his non-cultivable land. The landowners were not willing to sell their land in some cases: the government was forcing the landowners to sell land. They were not prepared to sell their land, but they were selling it because they did not want to face any problem by confronting the government.

Government

The government is also compelling the beneficiaries to agree to take the non-cultivable land. Government also says that if the receivers reject to take non-cultivable land, they will not acquire this also later. Government land which is not into production process in early years, now it got into the production process and yielding returns. This is very supportive of agriculture in the state.

Distribution of land to landless poor gave good results, wherever good land was distributed. The distributed land was a burden to the beneficiaries, wherever there were rock land and unfertile land. Wherever government officials were keen to implement the land distribution under the LPLD Scheme, the beneficiaries were getting all incentives mentioned in the scheme and if they lacked incentives. The government made web portal and better tracking mechanism which will help in achieving the need of the SCSP. The process of executing the LPLD Scheme had significant results. Even though the government did not have huge land bank, it managed to redistribution of land in sample villages.

The table 4.15 shows distribution of the land to the SC women in Telangana and Nalgonda district. Through the LPLD scheme in the state, 4981 SC women beneficiaries existed, to whom 12846.05 acres of land was distributed by the government of Telangana since 2014. To distribute the land to SCs in the state, government pooled the land through the government surplus land and also private landholders. In the state, most of the distributed land was taken from the private landholders. Moreover, it took the undivided Nalgonda in which 336 women beneficiaries existed through LPLD scheme, to whom 857.45 acres of land was distributed in which 250.32 acres land from government and 607.13 acres land form private landholders. In recent time, this is the great scheme distribution of the land in the name of the women.

Table 4.15 Land distribution in Telangana and Nalgonda district from 2014 to 2018.

	Beneficiaries	**Total acres of land**	**Government land**	**Private land**
Telangana	4981	12846.05	337.14	12508.31
Nalgonda	336	857.45	250.32	607.13

Source: Telangana scheduled caste development department. 2018.

4.10. CAGR of Production, Area, Yield of Nalgonda district

Table 4.16 Compound Annual Growth Rate (CAGR %) of Production and Area Principal Commodities in Nalgonda.

Commodity Year	RICE		Total cereals		Total pulses		Total food grains		Groundnut		Cotton		Chilly	
	Pro	area	pro	area	Pro	area	pro	area	pro	area	pro	area	pro	area
1955-56 to 1964-1965	9.9	3.1	4.7	1.2	0.2	1.8	4.5	1.3	2.2	-0.5	-3.2	-2.6	-2.1	-8.0
1965-66 to 1974-75	10.0	6.1	7.5	2.6	-2.1	-1.6	7.4	2.1	2.1	-2.5	2.5	-2.2	1.7	0.1
1975-76 to 1984-85	-1.2	-3.1	-1.4	-3.3	0.7	3.8	-1.4	-2.4	0.8	4.3	58.7	43.3	12.6	6.5
1985-86 to 1994-95	4.1	2.0	2.7	-2.7	2.3	-1.9	2.7	2.3	1.4	2.3	17.1	13.0	-9.0	-2.3
1995-96 to 2004-05	0.8	-0.2	0.65	-1.2	2.0	2.0	0.7	-0.3	-5.2	-3.7	10.4	10.0	2.0	5.9
2004-05 to 2014-15	-3.1	0.4	-3.1	-0.3	-5.6	-11.0	-3.1	-1.7	-24.0	-8.6	36.6	13.7	2.5	-3.8

Source: Source: Directorate of economics and statistics, Gov. of Andhra Pradesh from 1955-56 to 2014-15

Table 4.16 above portrays the Compound Annual Growth Rate (CAGR) of all principal crops and the corresponding production area in Nalgonda. Canals and bore wells were the major sources of irrigation for wetland crops such as rice, chilly, sugarcane, etc. It can be observed that the rate of growth of rice production depended on the rate of growth of the area. For total cereals, CAGR fluctuated over the period. The CAGR of production of pulses had been negative in two decades, 1965-66 to 1974-75 and 2004-05 to 2014-15. Negative growth of production of pulses was due to the negative growth of a cropping area. During the period 1985-86 to 1994-95, the production of pulses had a positive growth even though the rate of growth of area was negative due to increase in the yield. Up to 1974-1975, there was positive growth in the production and area of food grains. During the period of two decades, food grain production showed negative growth rate due to the negative growth of the area. There was tremendous growth in the production of cotton from 1975-76 onwards along with growth rate of the area. A major reason for an increased growth of cotton was that it could be cultivated in the dry land and wet land. Although chilly is a commercial crop, it had positive growth in the production. If there is positive growth in the cropping area except in the decade of 2004-05 to 2014-15. The fluctuation in area growth rate of chilly was due to the high risk in the cultivation of the crop. The rate of growth of tobacco was also as same as chilly. In the district, up to 1984-85, sugarcane

was also one of the major crops with a positive growth in area and production followed by negative growth rates in production and area.

From Table 4.17, the rate of growth of the yield per annum can be observed in each decade over the period. The yield per acre can be identified through divided of the production of the crop by area of respective crop. If production of any crop increases despite a decrease in the crop area, it means an increase in the yield of the crop. Rice registered the highest CAGR of yield per annum during the period from 1955-56 to 1964-65 followed by a downward trend. The CAGR of yield per annum was same as rice over the period in the case of foodgrains. The CAGR of yield of cotton crop per annum registered the highest rate during the period from 1975-76 to 1984-85. Most of the commodities registered positive growth in the yield due to the rate of growth of area and HYV seeds.

Table 4.17 Compound Annual Growth Rate of Yield of Principal Commodities in Nalgonda.

YEAR	Rice	Total cereals	Total pulses	Total food grains	Groundnut	Cotton	Chilly
1955-56 to 1964-65	6.6	5.2	2	4.2	2.7	-0.6	6.5
1965-66 to 1974-75	3.7	5.3	-2.7	3.7	4.7	4.8	1.6
1975-76 to 1984-85	1.9	1.4	-1.5	0.8	-3.4	10.7	5.6
1985-86 to 1994-95	2	3.7	1.2	3.2	-0.9	3.6	-6.8
1995-96 to 2004-05	1	-1.1	5.7	0.6	-1.6	0.4	-3.7
2004-05 to 2014-15	0.01	-0.2	-0.3	-0.01	2.6	0.7	3.4

Source: Source: Directorate of economics and statistics, Gov. of Andhra Pradesh from 1955-56 to 2014-15

4.11. Summary:

In this chapter mainly concentrated on land legislations, land holding pattern and land in inequalities among the social and size groups in united Andhra Pradesh. After knowing the fact that inequality is existed more among the size groups in the united Andhra Pradesh state. Then, concentrated on the landholding pattern among the Telangana districts in which recent times having the more farmer's suicides. Inequalities among the social groups showed very high in the Nalgonda district after observing the land holding pattern in each district in Telangana. And also Nalgonda district having the second highest Scheduled Caste population in Telangana. After Telangana became state, Telangana government

implemented the LPLD Scheme for landless Schedule Caste women. Under these scheme 3 acres land has distributed to scheduled caste land less women. In these scheme beneficiaries are happy, where they got good quality land, beneficiaries are not happy where they are not get good quality land. Compound annual growth rate of agriculture crops in production in the united Andhra Pradesh having the positive growth rate before the green revolution period. During the green revolution period all crops having the declined positive growth rate in the production and area. After the 1975-76 cotton having the more positive growth in the production and area because of increase the usage of HYV seeds. In the case of the Nalgonda district rice registered positive growth in production and area during the green revolution because of the Nagarjuna Sagar left canal. At the same period total cereals registered positive growth rate in the production and area. After the 1975 cotton registered high positive growth rate in production and area like United Andhra Pradesh.

Chapter V

Land inequality and Agrarian Situation: Gudiwada Village

5.1. Introduction

We have used various rounds of NSSO data and various reports to study the inequality in land distribution among various size and social groups in Telangana state, after examining all India level .Gini concentration shows that there is a presence of inequality among the size groups (0.49 in 2000-01, 0.48 in 2005-06, and 0.44 in 2010-11). Among all the districts of Telangana area, Nalgonda district has the highest degree of inequality in the land distribution among the social groups. Gini concentration was 0.075 in 2000-01, 0.079 in 2005-06, and 0.067 in 2010-11. Interestingly, Nalgonda district had second highest SC population in the state. After observing both the state and district level data on distribution of operated area among the various operational holdings for the case study, Gudiwada village of Kethepally Mandal was selected as it had the highest SC and ST population in the mandal.

Figure- 5.1 Geographical structure of the Gudiwada village.

5.2. Demographic features of Gudiwada village

Gudiwada village is located in Kethapally Mandal of Nalgonda district of Telangana state. It is in the northern part of Nalgonda. Historically, Gudiwada village has a history since Kakatiya period. The temple of lord Shiva was constructed in the village 820 years back by Kakatiya rulers. Based on the name of the temple, this village was named Gudiwada, where gudi means "temple" wada means "street". Table 5.1 gives an overview of the village. Out of 855 households, 257 households (30.1 percent) are Scheduled Castes (SCs), 43 households (4.9 percent) are Scheduled Tribes (STs), 513 households (57.9 percent) are Other Backward Classes (OBCs) and Others are 42 households (4.5 percent). The village has 3418 people, out of which SCs are 1121(32.8 percent), STs are 166 (4.9 percent), OBCs are 1978 (57.9 percent), and Others are 153 (4.5 percent).

According to the field data, the literacy rate of the village is 62.21 percent, which is less than Nalgonda district average (64.20 percent according to 2011 census). Male literacy rate in the village is 65.2 percent. Furthermore, female literacy rate in the village is 58.3 percent, which is more than district female literacy i.e. 54.19 percent.

There are 540 households from various social groups. They participated in the MGNREGA scheme in the village during 2017. Out of the total households, 35.2 percent are SC households, 6.5 are ST households, 57.4 percent are OBC households, and 0.9 percent are from other community households. In the village, 1126 people participated in the MGNREGA, out of which 391 (34.7 percent) persons were SCs, 77 (6.8 percent) were from STs, 652 (57.9 percent) persons were from OBCs, and 6 (0.5 percent) persons were from other communities. The data reflects the non-availability of daily work in the village after harvesting. MGNREGA has become one of the main sources of employment.

All state governments in the country allocate ration cards for people who live below poverty line to provide food security. To supply the food grains and kerosene through PDS, State government issues three types of ration cards - White card is given to people who are Below Poverty Line, Anthyodaya card is given to people who are in extreme poor, and Pink card is to those Above Poverty Line. Based on these three types of ration cards, government provides the welfare scheme benefits and medical facilities at subsidized prices. White ration card holders and Anthyodaya ration card holders are eligible for all

types of government schemes, whereas pink ration card holders are eligible for some schemes.

Table 5.1 Demographic and Characteristics of Gudiwada village.

Total No. of households is 855				Percentage	Landless households 323	
SC	257			30.1	105	
ST	43			5.0	28	
OBC	513			60.0	186	
Others	42			4.9	04	
Total population	3418					
Male	1911				55.9	
Female	1507				44.1	
	Male	Female	Total	% pp. of total	% male	% female
SC	611	510	1121	32.8	54.5	45.5
ST	96	70	166	4.9	57.8	42.2
OBC	1118	860	1978	57.9	56.5	43.5
Others	86	67	153	4.5	56.2	43.8
Total	1911	1507	3418	100	55.9	44.1
Literacy rate	Male literacy			Female literacy	Total	
Total village literacy	65.2			58.3	62.1	
SC	63.0			58.0	60.7	
ST	62.5			44.3	55.4	
OBC	64.8			57.3	61.6	
Others	87.2			86.6	86.9	
Workers category	No. of workers				% of workers	
Cultivators	404				21.0	
Agriculture laborers	865				44.9	
Others labors	447				23.2	
Private sectors jobs	102				5.3	
Government jobs	22				1.1	
Not working adults	86				4.5	
Total	1926				100.0	
MGNREGA WORKERS	No. of households		% of households	No. of participants	% of participants	
SC	190		35.2	391	34.7	
ST	35		6.5	77	6.8	
OBC	310		57.4	652	57.9	
Others	5		0.9	6	0.5	
TOTAL	540		100.0	1126	100.0	
Type of ration cards	Social groups					
	SC	ST	OBC	Others	TOTAL CARDS	
White	220	28	475	0	723	
Pink	0	0	0	10	10	
Anthyodaya	30	13	25	0	68	
No Cards	7	2	13	32	54	
Total households	257	43	513	42	801 / 855	

Source: Field Survey, 2017

The government provides 6 kgs of rice per month at Rs. 1 per Kg to each person. The data collected from the field reflects that there are 855 total households in the village out of which 801 households have ration cards and 54 households do not have any type of ration card. Out of the 801 households who have ration card, 723 households have white ration cards, 10 households have pink cards, and 68 households have Anthyodaya cards. In the village, out of 257 SC households, 250 of them have ration cards and 7 households do not have any card. Out of 250 households, 220 households have white ration card holders and 30 households have Anthyodaya card holders. Out of 43 ST households, 41 are ration card holders and 2 do not hold any card. Out of 41 ST ration card holding households, 28 households have white cards and 13 households have Anthyodaya cards. Out of 513 OBC households, 500 households are ration card holders and 13 do not hold any card. Out of 500 ration card holding households, 475 have white cards and 25 have Anthyodaya cards. In the village, Others have 42 households, out of which 32 households do not held any card and 10 households hold pink cards.

5.3. Occupational structure in the village

Development of any village or region depends on the occupational division of the households or workers. Historically, agriculture is a prime occupation for all the village households. Over the period, occupational division has been taking place across the villages in the country. Agriculture is continuously losing its glow in the villages due to high cost of production and the low farm income and high prevalence of disguised unemployment. People in the villages are trying to shift to other non-farm occupations,., more than 70 percent of people in the village dependent on agriculture and related occupations.

The table 5.2 represents the occupational division of households in the Gudiwada village. According to various social groups such as SC, ST, OBC and Others, In the village, 404 (47.3 percent) households are dependent on cultivation, 184 (21.5 percent) households are dependent on agriculture labour, 203 (23.7 percent) households are dependent on other than agriculture activities, 37 (4.3 percent) households are involved in private sector jobs, 16 (1.9 percent) households rely on government jobs as their major occupation and 11 (1.3 percent) households are not working. Here, it can be observed that in the village, 68.8 percent of households are dependent on agriculture-related occupation rest of the

households are dependent on other than agriculture activities. And also it provides the information related to the occupation-wise distribution of each person among the social groups in the village. In the village 404 (21.0 percent) persons are involved in cultivation, 865 (44.9 percent) participate in agriculture labour, 447 (23.2 percent) persons are involved in other labour (other than agriculture), 102 (5.3) persons are in private sector jobs, 22 (1.1 percent) persons are dependent on government jobs as their major occupation. If we see each caste-wise occupation division, within the SCs 66.1 percent persons are involved in agriculture and related activities as a major occupation and reaming 33.9 percent persons are dependent on non-related agriculture. Among STs, 57.5 percent persons are dependent on agriculture and related works and remaining 42.5 percent of persons are dependent on other than agriculture activities. Within OBCs, 68.4 percent persons are relied on agriculture and related activities and remaining 31.6 percent persons are dependent on non-agriculture activity. Among Others, 43.0 percent persons are dependent on agriculture and related activities, and remaining 67.0 percent persons rely on non-agriculture activities.

Table 5.2 Occupational distribution of the households in the village.

Occupational division of Households	SC	ST	OBC	Others	Total
Cultivators	91 (35.4)	12 (27.9)	273 (53.2)	28 (66.7)	404 (47.3)
Agricultural labour	83 (32.3)	14 (32.6)	86 (16.8)	1 (2.4)	184 (21.5)
Other labour	63 (24.5)	13 (30.2)	124 (24.2)	3 (7.1)	203 (23.7)
Private sector jobs	7 (2.7)	3 (7.0)	24 (4.7)	3 (7.1)	37 (4.3)
Government	5 (1.9)	1 (2.3)	3 (0.6)	7 (16.7)	16 (1.9)
Not working adults	8 (3.1)	0 (0.0)	3 (0.6)	0 (0)	11 (1.3)
Total	257 (100)	43 (100)	513 (100)	42 (100)	855 (100)
Occupation-wise division of persons					
Cultivators	91 (15.0)	12 (12.8)	273 (24.1)	28 (30.1)	404 (21.0)
Agricultural labour	309 (51.1)	42 (44.7)	502 (44.3)	12 (12.9)	865 (44.9)
Other labour	145 (24.0)	30 (31.9)	262 (23.1)	10 (10.8)	447 (23.2)
Private sector jobs	32 (5.3)	5 (5.3)	50 (4.4)	15 (16.1)	102 (5.3)
Government	6 (1.0)	3 (3.2)	5 (0.4)	8 (8.6)	22 (1.1)
Not working adults	22 (3.6)	2 (2.1)	42 (3.7)	20 (21.5)	86 (4.5)
Total	605 (100)	94 (100)	1134 (100)	93 (100)	1926 (100)

Source: Field survey, 2017. Numbers in parenthesis shows the percentage to total.

By observing occupational division in the village, except other communities, more than 50 percent of the remaining individuals in each social groups i.e. SC, ST and OBC, are majorly dependent on the agriculture and related activities.

5.4. Access to Land in the village

In order to study the landholding distribution among the size and social groups from 1980-81 to 2016-17, the landholding households are divided into four categories - 1) Marginal (less than 2.5 acres), Small (2.51 to 5 acres), Medium (5.1 to 10 acres) and Large (Above 10 acres). This village has approximately 2100 acres of land. 1810 acres of land was registered between 1980-81 and 1990-91 and between 2000-01 and 2016-17, 1830 acres of land was registered on the names of landholding households of the village. In remaining 270 acres of land, 131 acres are under the control of tanks, 20 acres graveyard, 25 acres temple land, 7 acres dwelling, and 50 acres of land includes unfertile, rock, and government land. Moreover, more than 20 acres had been given for Musi canal project.

Here, it can be noticed from the table 5.3, in the Gudiwada village that by 1980-81, marginal landholding households constituted 38.85 percent and area under their control was 7.5 percent. Small land holding households constituted 25.4 percent and occupied 11.2 percent area. Similarly, medium landholding households accounted for 15.0 percent and possessed 14.3 percent of land area, and large landholding households accounted for 21.2 percent of total land holding households and possessed 67.0 percent of total area of the village. It is evident from the data that there are large number of marginal and small landholding households, but they control very small portion of land in the village. Marginal and small landholding households accounted for 63.8 percent and possessed area of about 18.7 percent, while medium and large landholding households accounted for 36.2 percent of total land holding households and controlled 81.3 percent of total area of the village.

By 1990-91, marginal and small landholding households accounted for 73.6 percent and held 34.4 percent of land, while medium and large landholding households accounted for 26.4 percent of total land holding households and area gripped by them was 56.6 percent of total area of the village.

By 2000-01, marginal and small landholding households constituted 74.9 percent and area occupied by them was 37.5 percent, while medium and large landholding households

comprised 25.1 percent of total land holding households and possessed 62.5 percent of total area of the village.

By 2010-11, marginal and small landholding households which accounted for 78.1 percent and area possessed by them was 45.7 percent, while medium and large landholding households comprised 21.9 percent of total land holding households and area controlled by them was 54.3 percent of total area of the village.

Table 5.3 Size wise classification of land owned households and area owned by them from 1980-81 to 2016-17.

	1980-81		1990-91		2000-01		2010-11		2016-17	
Size of holdings In acres	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned
Marginal 0-2.5	100 (136)*	38.5 (7.5)**	202 (294)	50.9 (16.2)	237 (328)	49.9 (17.9)	257 (367)	50.8 (20.1)	235 (318)	44.2 (17.4)
Small 2.51-5.0	66 (203)	25.4 (11.2)	90 (328)	22.7 (18.1)	119 (359)	25.1 (19.6)	138 (470)	27.3 (25.7)	174 (568)	32.7 (31.0)
Medium 5.1-10	39 (259)	15.0 (14.3)	54 (374)	13.6 (20.7)	74 (515)	15.6 (28.1)	69 (448)	13.6 (24.5)	94 (571)	17.7 (31.2)
Large Above 10	55 (1212)	21.2 (67.0)	51 (814)	12.8 (45.0)	45 (628)	9.5 (34.3)	42 (545)	8.3 (29.8)	29 (373)	5.5 (20.4)
Total	260 (1810)	100 (100)	397 (1810)	100 (100)	475 (1830)	100 (100)	506 (1830)	100 (100)	532 (1830)	100 (100)
Average size	6.96		4.56		3.85		3.62		3.44	
Gini coefficient	0.55		0.48		0.45		0.42		0.38	

Source: land records of the village, field survey data. Numbers in the parenthesis * indicates the land owned in acres, ** shows the percent of land owned. Note: H.H indicates landholding households

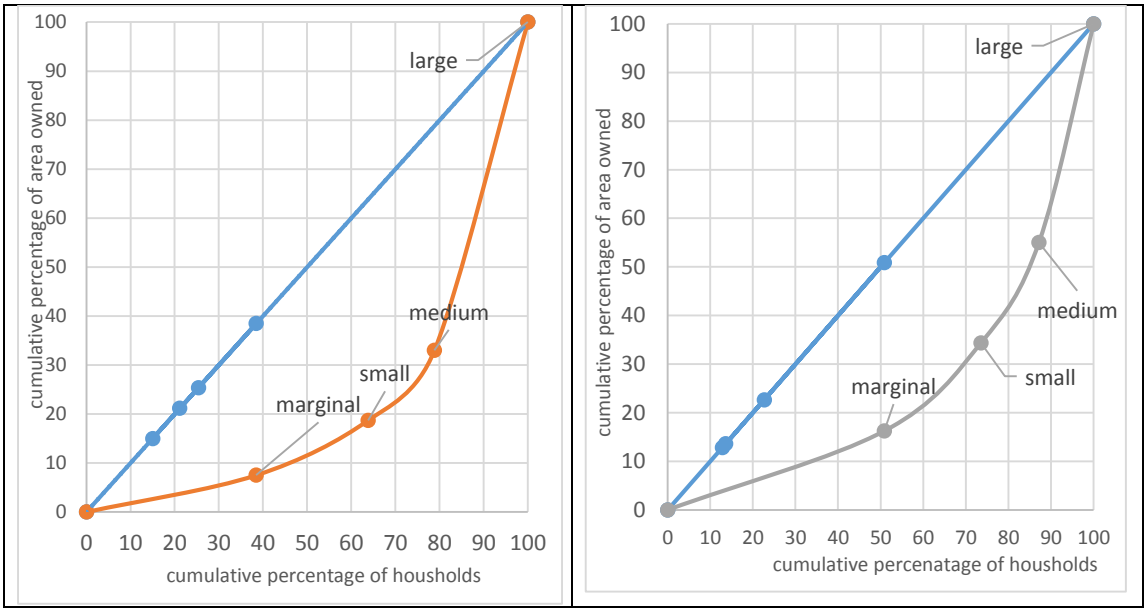
By 2016-17, marginal and small landholding households held 76.9 percent and area gripped by them was 48.4 percent, while medium and large landholding households comprised 23.1 percent of total land holding households and area occupied by them was 51.6 percent of total area of the village. In the village, it clearly shows the unequal distribution of land among the class groups over the period from 1980s till recent year i.e. 2017. Over the years, large landholding households and area owned by them has been decreasing and it is transforming to marginal, small, medium size holdings. By the 2016-17, marginal landholding households and area owned by them decreased as against an increase of previous years. Some marginal holding households became small holding

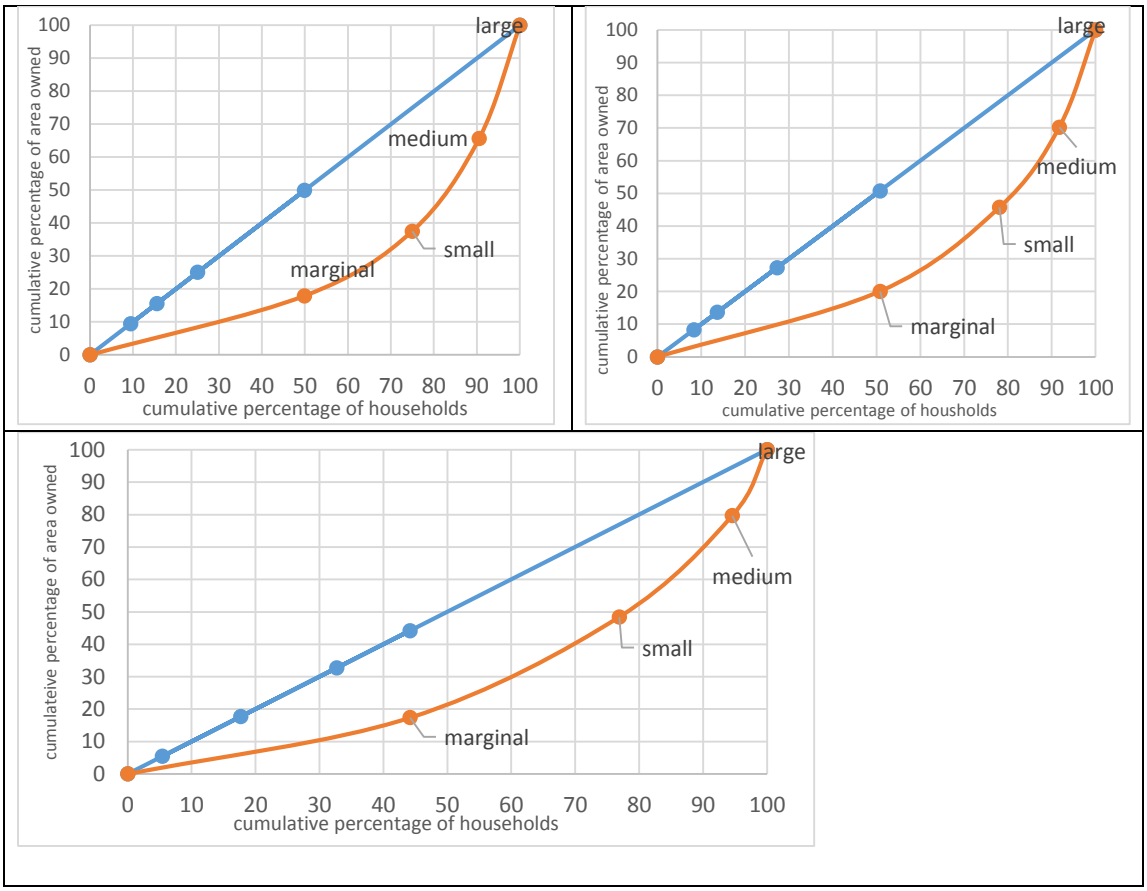
households and the other reason explored was that the marginal holding households would have sold the land in smaller units.

In 1980-81, average size of land holdings was 6.96 acres, in 1990-91 it was 4.56 acres, in 2000-01, it was 3.85 acres, in 2010-11, it was 3.62 acres, and in 2016-17, it was 3.44 acres. Over the period, average size of holdings have been decreasing, which means landholding households increased and also made the small size of holdings ranging up to 5 acres.

The figure 5.2 depicts the inequality among the size groups over the period by using Lorenz curve and Gini Coefficient value. Lorenz curve when it is far away from the equal curve, indicates that there existed high inequality in the society and when it was approach or equal to 45 degrees, equal curve indicated that was low inequality or equality in the society. To know how much inequality existed in any society, here we can calculate Gini Coefficient values, which is between 0 to 1, "0" refers to perfect equality in any society, and "1" refers to perfect inequality in society, but in any society Gini values between 0 to 1, any society will not be perfect equality or will not be perfectly unequal.

Figure 5.2 Lorenz curves to measure the inequality among the size groups from 1980-81 to 2016-17.





In Gudiwada village, distribution of land among the different size group of households was unequal. The Lorenz curve of 1980-81 was far away from equality and Gini coefficient value was 0.55. Moreover, it can be observed that Lorenz curves of 1990-91, 2000-01, 2010-11, 2016-17, were far away from the equal curve and Gini coefficient values of these years were 0.48, 0.45, 0.42 and 0.38 respectively. One can also say that inequality among the size groups had been decreasing over the years, but still there was some inequality among these size groups. It is evident from the above graph.

Reasons behind the land transforming to marginal, small, and medium landholdings

In this village, most of the village land (90 %) was under three landlords, who belonged to upper caste. In 1980-81, the total land holding households in the village was 260 and held 1810 acres of land. In the 2016-17, total land holding households increased to 532 and area controlled also slightly increased to 1830 acres. In 1980-81 marginal landholding households were 100 (38.5 percent) and area controlled by them was 136 (7.5 percent) acres, while in 2016-17 marginal landholding households were 235 (44.2 percent) and the area controlled was 318 (17.2 percent) acres. In 1980-81, small landholding households

were 66 (25.4 percent) and area possessed by them was 203 (11.2 percent). In 2016-17, small landholding households were 174 (32.7 percent) and the area controlled was 568 (31.0 percent) acres. In 1980-81, medium landholding households were 39 (15.0 percent), area controlled was 259 (14.3 percent) acres. In 2016-17, medium landholding households were 94 (17.7 percent) and the area controlled was being calculated as 571 (31.2 percent) acres. In 1980-81, large landholding households were 55 (21.2 percent) and area controlled by them was 1212 (67.0 percent). In 2016-17, large landholdings were 29 (5.5 percent) and the area controlled was 373 (20.4 percent). This clearly shows that land had been transformed from large land holding owners to marginal, small, and medium holdings land owners. Percentage of area transformed to small landholdings was highest compared to marginal and medium holdings over the period. Percent of landholding households increased more in small holdings compared to rest of the size groups.

At the time of independence, government decision towards the abolition of zamindari system or intermediary system caused to decrease the lands of landlords in the village. Surplus land in the village was distributed to the landless poor who were mostly SCs and STs. By observing various struggles against landlords all over the country, landlords in the village sold their land to marginalized groups. Some landless poor were transformed into marginal land holding, marginal landholding households were transformed into the small landholder, and small landholder were transformed into medium land holder. But the marginalized land holder did not become large holding landlords. Urbanization and also breaking up of the joint family system led to the increase in marginal and small holdings. This type of transformation took place in the village under survey.

5.4.1. Distribution of the land among the social groups from 1980-81 to 2016-17.

In the previous section, it is evident that marginalized, small, and medium land holding household have been increasing over the period of time compared to the large holding households. The inequality cannot be observed only through the class-wise landholding pattern. In Indian context, the inequality can be effectively seen by observing landholding situation of various social groups. Indian society can be branched off class-wise and caste-wise. Historically, the land was in the hands of few castes such as Brahmins, Velamas, Reddies, and Others. The people from these castes obtained land from Kings or native

rulers without any effort. During the colonial period, people from these castes worked as zamindars. At the time of independence, these castes held huge acres of land across the country. For equal distribution of land among the social groups, the Government of India have been implementing various land reforms through the ceiling on land holdings, the abolition of intermediates, and consolidation of holdings. Some of the states have been proactively involved in these kind of land reforms and some are not. Even in Telangana state, the land was held in the hands of few castes such as Reddies, Karnams, and Velma caste groups. These communities worked as Patel and Patwaries under the Nizam regime. The study on Gudiwada village reveals that land distribution among the social groups over the period of time will throw some interesting inputs that are crucial to understand the socio economic structure of the village. The village includes a number of castes such as SCs, STs, OBCs, and Others. Total land under the control of social groups was being calculated as 1810 acres up to 1990-91. And now it is 1830 acres.

The table 5.4 discloses the distribution of land among the social groups over the period. By 1980-81, the SC landholding households in the village was 58 (22.31 percent) households and land possessed by them was 364 (20.1 percent) acres, ST landholding households were 12 (4.62) households and area commanded by them was 46 (2.5 percent) acres, OBCs landholding households were 156 (60 percent) households and area possessed by them was 625 (34.5 percent) acres. Others landholding households were 34 (13.08 percent) households and the area possessed by them was 775 (42.8 percent) acres. In the village, the percentage of land possessed by the marginalized groups (SCs, STs, and OBCs) was less than their percentage of landholding households, but in the case of Others, the trend was reverse. Less number of other community landholding households had large number of land of total village. In the village by 1980-81, 86.9 percent of marginalized group (SC, ST, and OBCs) landholding households of total land holding households possessed 57.2 percent of the area in the village, while 13.08 percent Others landholding households possessed 42.8 percent of the land. It clearly shows that the small percent of other community held the land predominantly.

By 1990-91, 91.9 percent of SC, ST, and OBCs controlled 80.6 percent land, while 8.1 percent Others households have possessed 19.4 percent land of total village land. By 2000-

01, 93.1 percent SC, ST, and OBC landholding households owned 83.5 percent land, while 6.9 percent Others landholding households held 16.5 percent of the total village land.

By 2010-11, 92.5 percent marginalized landholding households preserved 83.8 percent land, while 7.5 percent Others landholding households possessed 6.1 percent of the total village land. By 2016-17, 93.9 percent marginalized landholding households had controlled 88.7 percent land, while 6.1 percent Others landholding households possessed 11.3 percent of total village land.

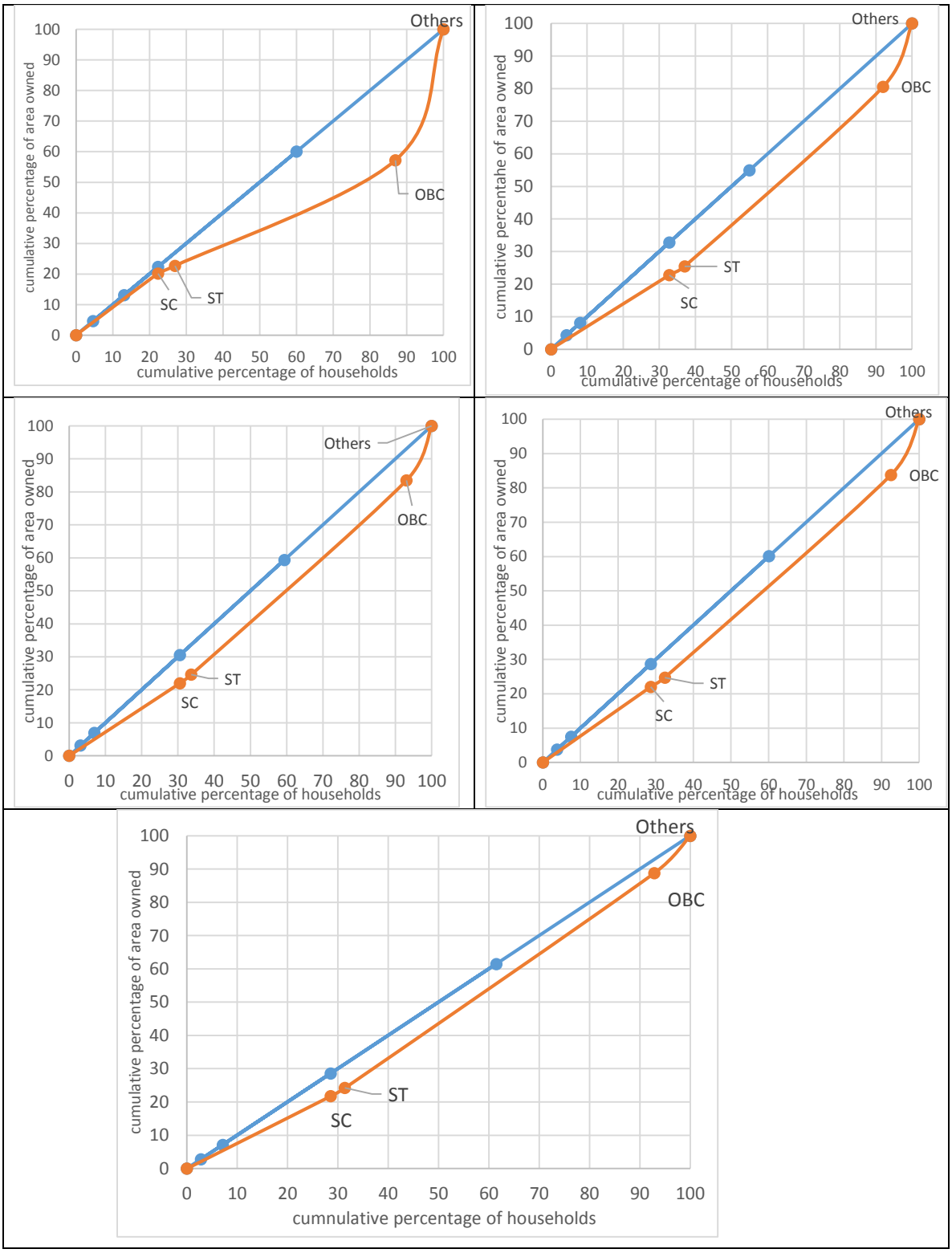
Table 5.4 Land owned households among the social groups from 1980-81 to 2016-17.

	1980-81		1990-91		2000-01		2010-11		2016-17	
Social groups	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned
SC	58 (364)*	22.31 (20.1)**	130 (412)	32.7 (22.8)	145 (402)	30.5 (22)	145 (403)	28.7 (22.0)	152 (398)	28.6 (21.7)
ST	12 (46)	4.62 (2.5)	17 (49)	4.3 (2.7)	15 (48)	3.2 (2.6)	19 (50)	3.8 (2.7)	15 (45)	2.8 (2.5)
OBC	156 (625)	60 (34.5)	218 (997)	54.9 (55.1)	282 (1078)	59.4 (58.9)	304 (1080)	60.1 (59.0)	327 (1181)	61.5 (64.5)
OC	34 (775)	13.08 (42.8)	32 (352)	8.1 (19.4)	33 (302)	6.9 (16.5)	38 (297)	7.5 (16.2)	38 (206)	7.1 (11.3)
Total	260 (1810)	100 (100)	397 (1810)	100 (100)	475 (1830)	100 (100)	506 (1830)	506 (1830)	532 (1830)	100 (100)
Gini coefficient	0.25		0.18		0.15		0.13		0.10	

Source: land records of the village, field survey data. Numbers in the parenthesis * indicates the land owned in acres, ** shows the percent of land owned. Note: H.H indicates landholding households

Over the period, the village land inequality among social groups has been decreasing, but still, the inequality exists in the village. Over the period, SCs and OBCs landholding households and area owned by them had been increasing and in the case of STs, it had been fluctuating and in the case of Other caste landholding households, area owned by them had been declining.

Figure 5.3. Lorenz curves to measure inequality among social groups from 1980-81 to 2016-17 in the village.



The above figure 5.3 shows inequality in the distribution of land among the social groups by Lorenz curve and Gini coefficient values. In 1980-81, Lorenz curve was far away from the equal distribution curve and Gini coefficient value was 0.25. It means there was a skewed distribution of land among the social groups. Moreover, during the years such as 1990-91, 2000-01, 2010-11, and 2016-17 years, Lorenz curves were also far away from equal distribution curve. Gini coefficient values were 0.18 in 1990-91, 0.15 in 2000-01, 0.13 in 2010-11, and 0.11 in 2016-17. This means the distribution of the land among the social groups over the period was unequal. It can also be noted that inequality had been decreasing over the period.

Reasons behind land transformation towards OBCs

Historically, up to 1960 more than 85 percent of the village land was under the control of three types of persons, who belong to the upper or other castes, and remaining 15 percent of land under the control of marginalizing castes such as SC, ST, and OBCs. After the implementation of the land ceiling, the landlords belonging to upper castes started to sell their land to marginalized castes. Even after land ceiling, the government purchased and distributed land to landless SCs and STs in the village. The landlords who were predominately present in the village with more than ceiling land started registering the land in the name of family members and their bondage labors. These landlords became rich without any labor from their side. On the other side, they sold the land to castes mentioned below, especially the OBCs at the time of land ceiling and earned substantial money. With that money, landlords started investment in the urban sector and investment on the children education and on their political development. Even after the land reforms, in 1980-81, only 34 (13.08 percent) landholding households possessed 775 (42.8 percent) acres of total land of the village. These numbers reflect how they were strong in the village. After 1980-81, the situation changed, and landlords somewhat lost their power on land because of two reasons; first, due to the Naxals movement and second, increase in employment and investment opportunities for their children in urban sectors. Then, landlords started to sell their land to those who were ready to offer more price among the SCs, STs, and the OBCs. These are the reasons for the upper caste landholding households for losing their control over the land.

The condition of the OBCs in the village

Demographically, the OBCs exist predominately in the village including various castes. People from these castes are mostly dependent on their caste related occupations such as washermen, potters, blacksmith, goldsmith, carpenters, toddy toppers, shephed, milk sellers, weavers, barber, etc. Among these, some castes used to work as tenant farmers or as sharecroppers or bonded labors at landlord's fields during agriculture and harvesting period along with their caste occupations. Because of working on one or two occupations, these caste groups economically became well after the other upper castes. Most of the land was bought by OBCs from the Others, whenever they were in need to sell their land. Another reason is that OBCs cultivated lands of landlords and had direct relation with upper caste landlords, and maintained good terms with them. In some cases landlords interested to sell their land only to OBCs. These are the reasons that enabled them to access the land. In 1980-81, about 156 (60 percent) OBCs landholding households possessed 625 (34.5 percent) acres land. In 2016-17, 327 (62.2 percent) OBCs landholding households controlled 1181 (62.2 percent) acres of total village land. In 1980-81, percent of the area owned by OBCs were less than the percent of landholding households of the OBCs, but in 2016-17, the percentage of the area owned by the OBCs was more than the percent of landholding households of OBCs. Any social group can emerge as the front-runner of the village or town or cities when they have persistent income and land. It has proved in the case of Others and now in the case of OBCs.

Conditions of the SCs in the village:

Demographically in the village, the SCs are the second largest community. The main occupation of the SCs was wage labor in agriculture and non-agriculture and bondage labor for food grains under landlords. Some of the SCs used to cultivate their own lands and some took leased lands. Conditions of the Scheduled Castes was very grievous at the time of droughts, and they had to leave the village for one or two years. Now also, in the village, out-migration is high among the SCs during the summer. The SCs were not able to buy land from the landlords as the SCs remained to be wage laborers rather than income groups. In some cases selling of land was denied by Other caste landlords to SCs households, even they have sufficient money to buy the land. During the land reforms, government bought some land from landlords and distributed to the SCs and STs. Among the SCs, one certain

family held 120 acres of land during 1960-70, and 4 workers used to work under him. He was not only a landlord, but also a big farmer. He used to protect the SC, ST, and OBCs from unequal treatment of any worker in the hands of upper caste landlords. He had a social consciousness and donated 20 acres of his land for construction of a road from his village to beside village. He had 6 sons and distributed remaining 100 acres to his sons. But among his sons and grandsons, some are working as wage labor and some are doing cultivation in whatever land left over after selling the land to repay their debts. By 2016-17 in the village, 152 (28.9 percent) landholding households controlled 398 (21.7) acres land of total village land, while in 1980-81, 58 (22.31 percent) SC landholding households possessed 364 (20.1 percent) acres of total village land. Over last 40 years, only 34 acres of land increased in the case of the SC communities. Percentage of the area owned by the SCs is less than that of the percentage of landholding households.

Conditions of the STs in the village

In the village, the ST Houses are located on the outskirts of the village and conditions of the STs are agonizing. The main caste-based occupation of these STs is preparing bamboo baskets and rearing pigs. The ST households depend more on hunting rather than on cultivating vegetables and grains for their livelihood. Among the STs, most of the households are agriculture laborers and some are dependent on their caste-based occupation. In the case of the STs, migration is very high during the slack season in the village. Now-a-days, this caste also lost their main occupation of preparing bamboo-made articles due to the availability of plastic baskets in the market. The globalization impact is enormous on these communities. Most of the STs in the village got land through the land reforms, when land was distributed by the government. By 2016-17 in the village, 15 (2.9 percent) ST landholding households possessed 45 (2.5 percent) acres of total village land, while in 1980-81, 12 (4.62 percent) STs landholding households retained 46 (2.5 percent) acres of total village land. The field data reflects that there is no change in the area owned by STs over the period of time in the village. Percentage of the area owned by the STs is less than the percentage of landholding households.

The table 5.5 displays the average size of landholding among each social groups in the village. If the average size of land holdings is more than 3 acres, it is notified as economic holdings and suitable for cultivation of any crop to grab profit. In 1980-81, the average size

of landholdings among the social groups was 6.96 acres; in 1990-91, it was 4.56 acres; in 2000-01, it was 3.85 acres; in 2010-11, it was 3.62 acres; and in 2016-17, it was 3.48 acres.

Table 5.5 Average size of holdings among the social groups.

Social group	1980-81	1990-91	2000-01	2010-11	2016-17
SC	6.28	3.17	2.77	2.78	2.62
ST	3.83	2.88	3.20	2.63	3.00
OBC	4.01	4.57	3.82	3.55	3.61
OTHERS	22.79	11.00	9.15	7.82	6.44
TOTAL	6.96	4.56	3.85	3.62	3.48

Source: values are calculated from 1980-81 to 2010-11 village land records and field survey 2016-17.

In the village, the average size of land holdings has been falling off over the period. In 1980-81, the average size of land holdings in the SC was 6.28 acres; in 1990-91, it was 3.17 acres; in 2000-01, it was 2.77 acres; in 2010-11, it was 2.78 acres; and in 2016-17, it was 2.62 acres. The average size of land holdings of the SCs, STs, and OBCs (except in 2016-17) was less than the other communities and total village average size of land holdings over the period. The average size of holdings of the SCs was less than economic holdings from 2000-01 to 2016-17.

5.5. Classification of land within each social group by size

5.5.1. Size wise distribution of land within SCs

In Gudiwada village, the SC households are 251 and that constitute 30.1 percent of total village households. Out of these, 152 households possessed 398 acres village land. The Schedule Caste population is 1121(32.8 percent) of the total village population. The table 5.6 shows the distribution of SC land by size from 1980-81 to 2016-17 and how the trend is varying across the period. In 1980-81, 58 SC landholding households possessed 364 acres land, out of which 24 (41.4 percent) marginal landholding households controlled 37 (10.2 percent) acres land, 13 (22.4 percent) small landholding households held 46 (12.6 percent) acres, and 9 (15.5 percent) medium landholding households possessed 62 (17.0 percent) acres land, whereas 12 (20.7 percent) large landholding households occupied 219 (60.2 percent) acres of total SCs land in the village. 63.8 percent marginal and small landholding households possessed 22.8 percent land, while 37.2 percent medium and large landholding households controlled 77.2 percent of total SC land in the village.

Table 5.6 Classification of land owned within Scheduled Caste by the class wise from 1980-81 to 2016-17.

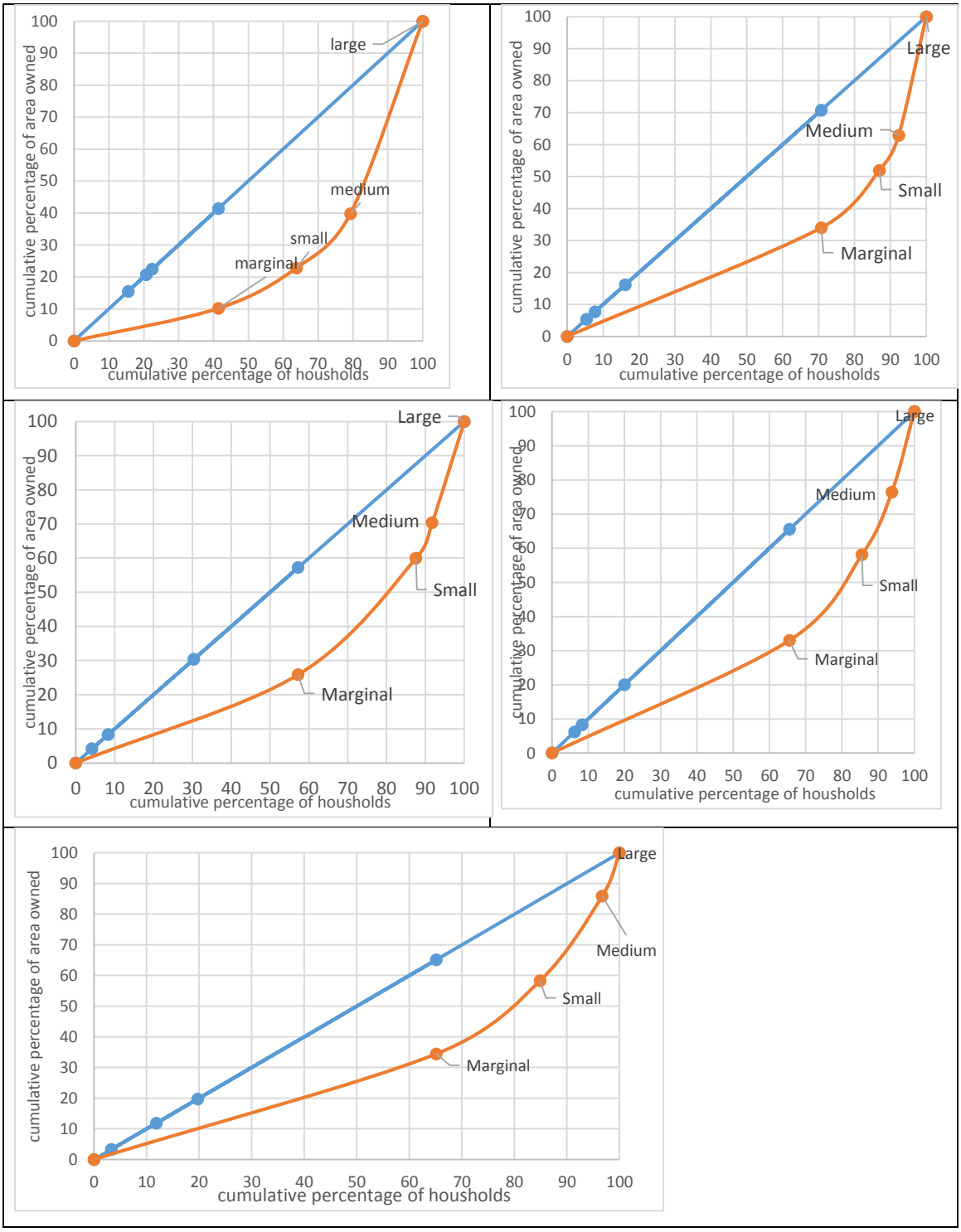
	1980-81		1990-91		2000-01		2010-11		2016-17	
Size of holdings	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned
Marginal	24 (37)*	41.4 (10.2)**	92 (140)	70.8 (34.0)	83 (104)	57.2 (25.9)	95 (133)	65.5 (33.0)	99 (137)	65.1 (34.4)
Small	13 (46)	22.4 (12.6)	21 (74)	16.2 (18.0)	44 (137)	30.3 (34.1)	29 (101)	20.0 (25.1)	30 (95)	19.7 (23.9)
Medium	9 (62)	15.5 (17.0)	7 (45)	5.4 (10.9)	6 (42)	4.1 (10.4)	12 (74)	8.3 (18.4)	18 (110)	11.8 (27.6)
Large	12 (219)	20.7 (60.2)	10 (153)	7.7 (37.1)	12 (119)	8.3 (29.6)	9 (95)	6.2 (23.6)	5 (56)	3.3 (14.1)
Total	58 (364)	100 (100)	130 (412)	100 (100)	145 (402)	100 (100)	145 (403)	100 (100)	152 (398)	100 (100)
Gin.co	0.50		0.43		0.40		0.38		0.36	

Source: land records of the village, field survey data. Numbers in the parenthesis * indicates the land owned in acres, ** shows the percent of land owned. Note: H.H indicates landholding households.

By 2016-17, 84.9 percent marginal and small landholding households controlled 58.3 percent land, while 15.1 percent medium and large landholding households possessed 41.7 percent of total SC land in the village. Among the SCs, marginal, small, and medium landholding households and area under their occupancy had been increasing over the period. Large landholding households and area under their control had been decreasing

From the figure 5.4 below, the inequality among the size groups within SCs from 1980-81 can be analyzed. Inequality curve was far away from the equality curve over the period from 1980-81 to 2016-17, but inequality had been decreasing by moving the inequality curves over the period towards the equal curve. In the village, the landlord who belonged to the SC community, held approximately 120 acres during the 1980-81. Later, it was fragmented into a number of small pieces among the SCs. To understand how the inequality is decreasing over the period, it can be observed by the Gini coefficient values. Gini value in 1980-81 was 0.50; in1990-91, it was 0.43; in 2000-01, it was 0.38; and in 2016-17, it was 0.36.

Figure 5.4 Lorenz curves for measures size-wise distribution of land within Scheduled Castes from 1980-81 to 2016-17.



5.5.2. Size-wise distribution of land within STs

According to the field survey, the ST households are 43 and that constitute 5.0 percent of total village households, out of which, only 15 households are landholding households. The ST population is 166 (4.9 percent) of the total village population. This community is in the pathetic situation in the village. People of these community practice migration for their livelihood. Only 35 percent households are in good conditions and live in the metal-based houses and remaining more than 65 percent households' live in the thatched houses. There is no toilet facility for most of the ST houses. Earlier, the streets of the STs were filled with drainage water. Under the SCs and STs Sub-plan in recent times, there is now relief from drainage water flow in the streets as the Panchayat constructed the concrete roads and drainages.

The table 5.7 below, shows the distribution of the land among size groups within STs in 1980-81, when 12 ST landholding households possessed 46 acres of the total village land. Out of the 46 acres land, 5 (41.7 percent) marginal landholding households possessed 11 (23.9 percent) acres land, 4 (33.3 percent) small landholding households held 13 (28.3 percent) acres land, 2 (16.7 percent) medium landholding households held 12 (26.1) acres land and 1(8.3percent) landholding households retained 10 (21.7 percent) acres land.

Table 5.7 Classification of land owned within Scheduled Tribes by the class wise from 1980-81 to 2016-17.

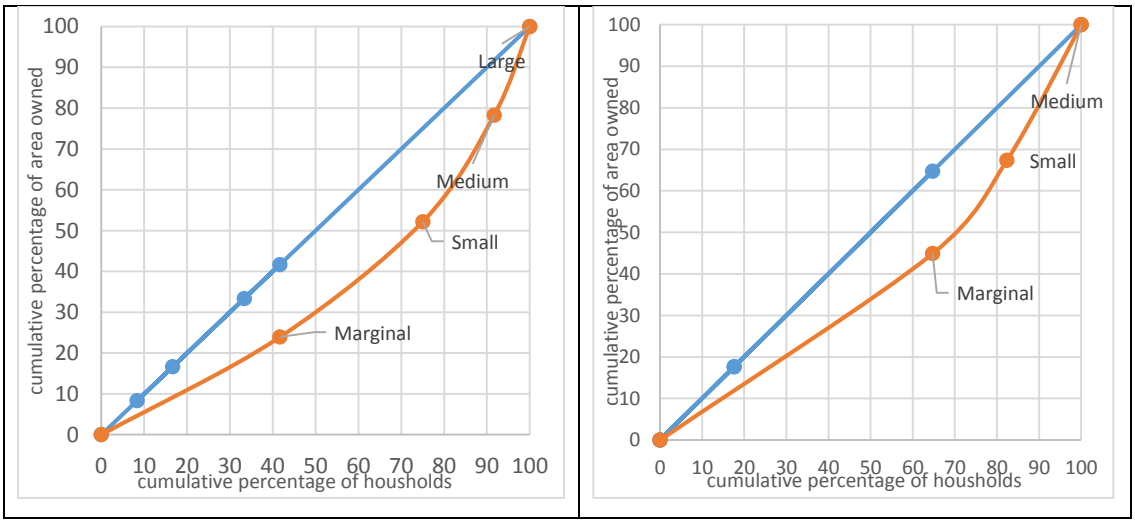
	1980-81		1990-91		2000-01		2010-11		2016-17	
Size of holdings	Land h. h and area in acres	% of land h. h and % area owned	Land h. hand area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned
Marginal	5 (11)*	41.7 (23.9)**	11 (22)	64.7 (44.9)	9 (18)	60.0 (37.5)	11 (13)	57.9 (26)	5 (12)	33.3 (26.7)
Small	4 (13)	33.3 (28.3)	3 (11)	17.6 (22.4)	4 (15)	26.7 (31.3)	6 (25)	31.6 (50.0)	8 (20)	53.3 (44.4)
Medium	2 (12)	16.7 (26.1)	3 (16)	17.6 (32.7)	2 (15)	13.3 (31.3)	2 (12)	10.5 (24.0)	2 (13)	13.3 (28.9)
Large	1 (10)	8.3 (21.7)	0.0 (0.0)	0 (0)	0 (0)	0 (0)	0 (0)	0.0 (0.0)	0 (0)	0.0 (0.0)
Total	12 (46)	100 (100)	17 (49)	100 (100)	15 (48)	100 (100)	19 (50)	100 (100)	15 (45)	100 (100)
Gini.coeffcient	0.28		0.22		0.27		0.26		0.16	

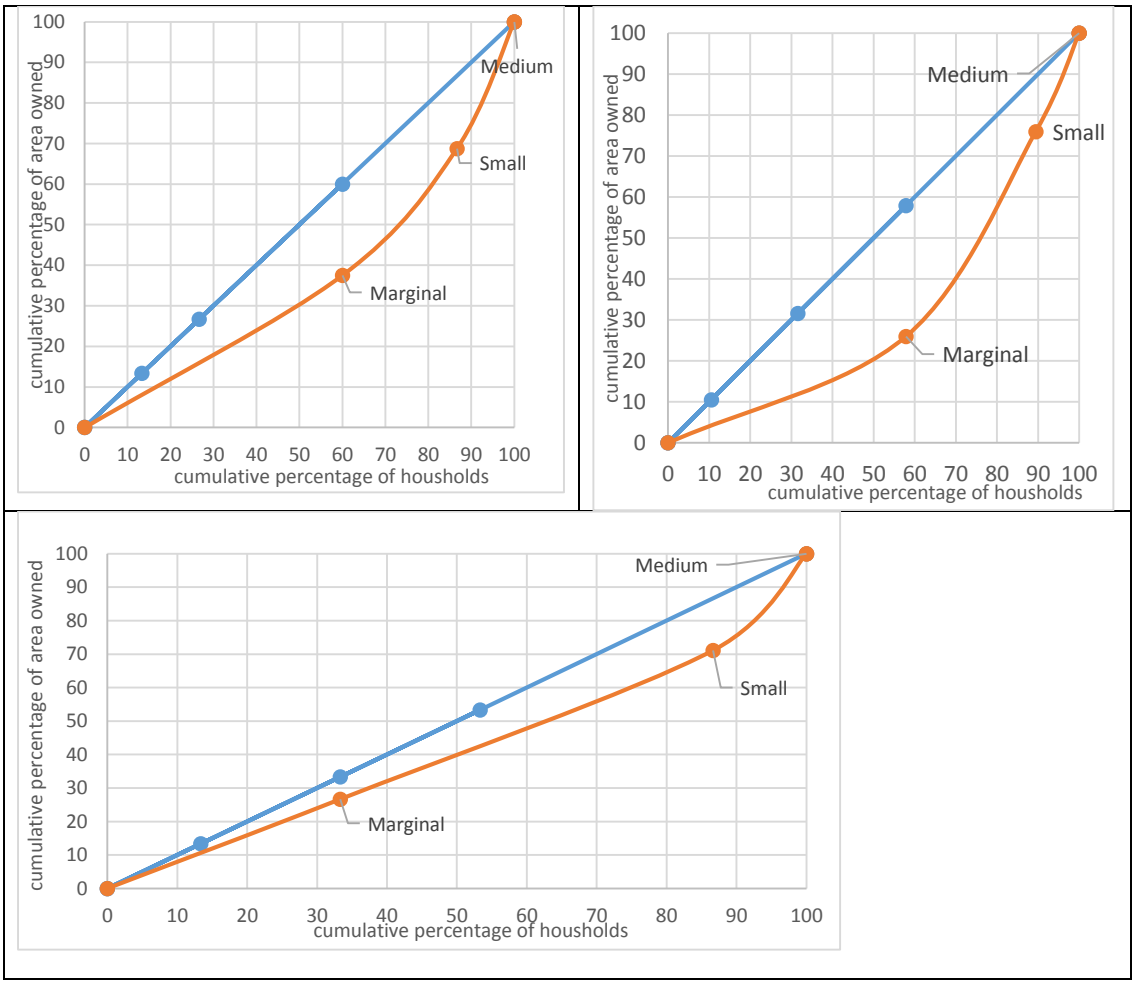
Source: land records of the village, field survey data. Numbers in the parenthesis * indicates the land owned in acres, ** shows the percent of land owned. Note: H.H indicates landholding households

The area under the control of the STs increased and decreased between 45 and 50 over the period. There is transformation of land from other communities to STs. There have been no large landholding households among the STs from the 1980-81onwards. Due to their insufficient income levels, their pathetic living conditions are considered as the reason for not increasing land holding of the STs Over the period of time. In 2016-17, 5 (33.3 percent) marginal landholding households controlled 12 (26.7 percent) acres of land, 8 (53.3) small landholding households controlled 20 (44.4 percent) acres of land, and 2 (13.3 percent) medium landholding households controlled 13 (28.9 percent) acres of the total ST land in the village.

The figure 5.5 shows inequality among the size groups within the STs. Inequality can be comprehended through the Lorenz curve and Gini values. Lorenz curves were stretched away from the equal curve over the period, and signify that inequality existed in distribution of land among the size groups within the STs. Inequality can be seen through Gini coefficient values. In 1980-81, it was 0.28; in 1990-91, it was 0.22; in 2000-01, it was 0.27; in 2010-11, it was 0.26; and in 2016-17, it was 0.16. In the case of the STs, Gini coefficient values fluctuated over the period.

Figure 5.5 Lorenz curves for measures size wise distribution of land within Scheduled Tribes from 1980-81 to 2016-17.





5.5.3. Size-wise distribution of land within the OBCs

In the village, Other Backward Class (OBCs) households are 513 that constitute 60.0 percent of total village households. Only 327 households hold land out of the 513 households of the OBCs. This population is 57.9 percent of the total village population. The OBCs emerged as the front-runner of the village as the Others (upper castes) communities migrated to cities. The influence of other communities gradually decreased on the social and economic aspects of the village, and the influence of the OBCs increased. This OBC community is the combination of more than 100 sub castes compared to remaining caste groups. Among the OBCs, each sub caste has its own occupation and these caste groups are intermediaries for remaining social groups for any development process in the village. Within the OBCs, some caste had persistence income over the years, and some of the castes within the OBCs emerged as dominate castes as equal as the upper

castes. After migration of wealthy upper caste people to cities, the OBCs came to the front by buying lands from the upper castes. Any social group can emerge as the front-runner of the village or town or cities when they have persistent income and land. It has been proved in the case of other dominated caste groups and now in the case of the OBCs. The transfer of land from the upper castes to the OBCs enabled them to cultivate their land and convert some OBC households from landed laborers to land-owning communities and they also stopped migration to the cities.

The table 5.8 below, reflects the distribution of land among the size groups among the OBCs. In 1980-81, 64 (41.0 percent) marginal landholding households held 72 (11.5 percent) acres land and 38 (24.4 percent) small households retained 107 (17.1) acres land, whereas 25 (16.0 percent) medium households held 163 (26.1percent) acres land and 29 (18.6 percent) large landholding households controlled 283 (45.3 percent) acres land of total OBC land in the village. Over the period, from 1980-81 to 2016-17, land had been shifting from the large land holdings to marginal, small, and medium holdings.

Table 5.8 Classification of land owned within the OBCs class-wise from 1980-81 to 2016-17.

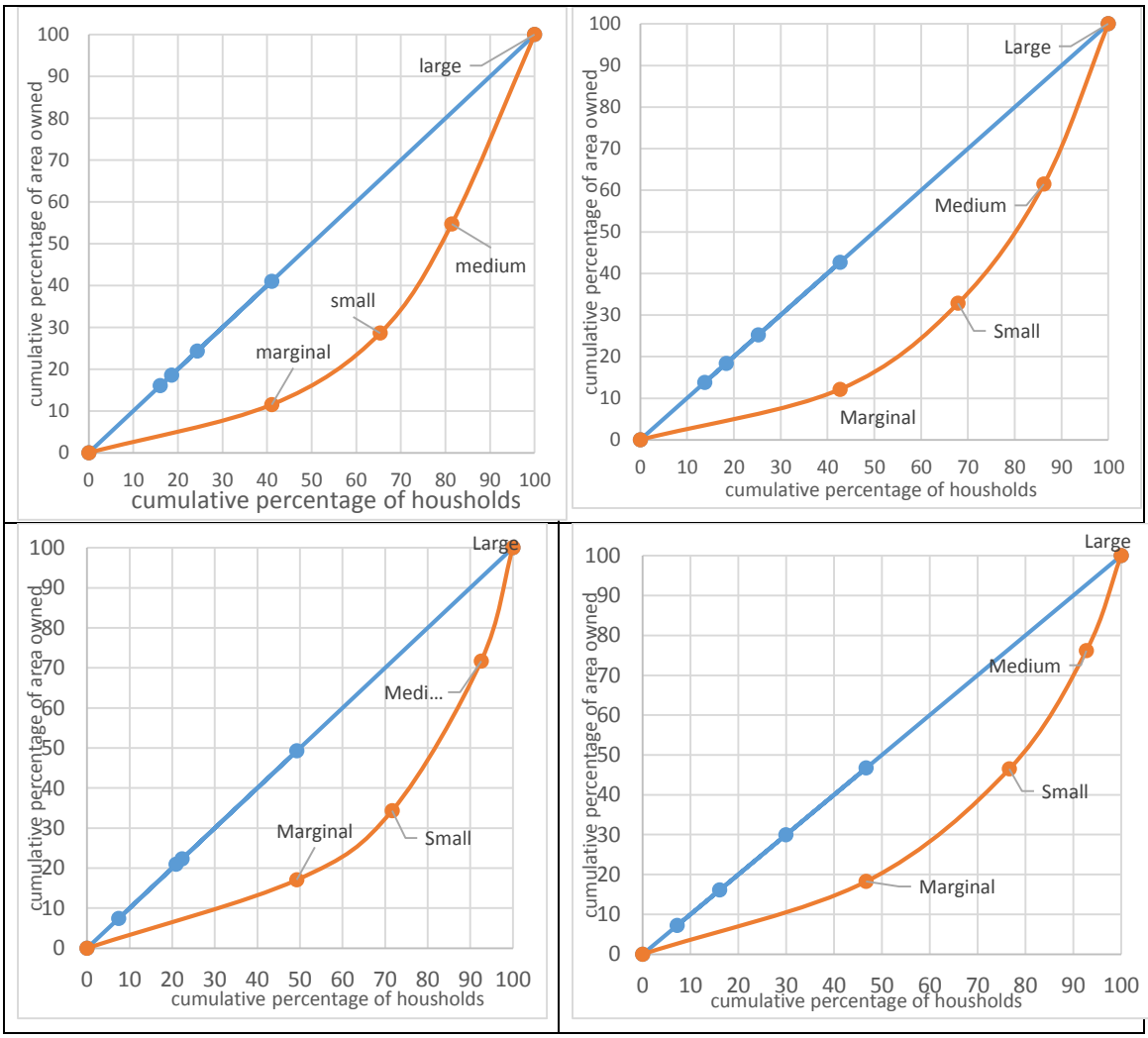
	1980-81		1990-91		2000-01		2010-11		2016-17	
Size of holdings	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned
Marginal	64 (72)*	41.0 (11.5)**	93 (121)	42.7 (12.1)	139 (184)	49.3 (17.1)	142 (197)	46.7 (18.2)	121 (149)	37 (12.6)
Small	38 (107)	24.4 (17.1)	55 (206)	25.2 (20.7)	63 (186)	22.3 (17.3)	91 (305)	29.9 (28.2)	121 (406)	37 (34.4)
Medium	25 (163)	16.0 (26.1)	40 (286)	18.3 (28.7)	59 (403)	20.9 (37.4)	49 (321)	16.1 (29.7)	68 (412)	20.8 (34.9)
Large	29 (283)	18.6 (45.3)	30 (384)	13.8 (38.5)	21 (305)	7.4 (28.3)	22 (257)	7.2 (23.8)	17 (214)	5.2 (18.1)
Total	156 (625)	100 (100)	218 (997)	100 (100)	282 (1078)	100 (100)	304 (1080)	100 (100)	327 (1181)	100 (100)
Gini coefficient		0.43	0.44		0.43		0.40		0.37	

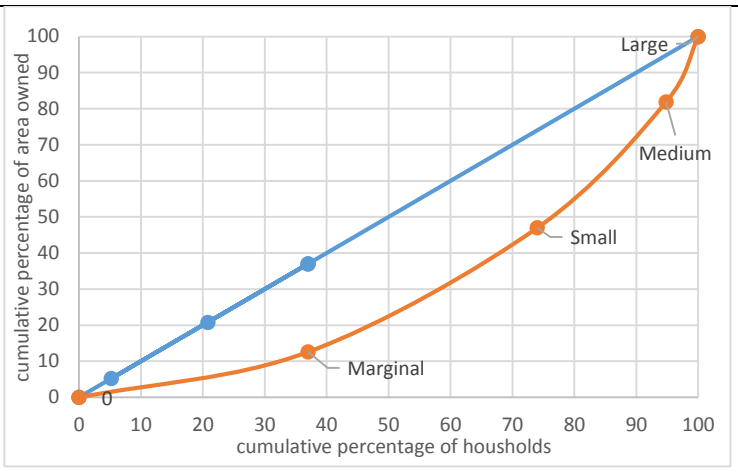
Source: land records of the village, field survey data. Numbers in the parenthesis * indicates the land owned in acres, ** shows the percent of land owned. Note: H.H indicates landholding households.

The figure 5.6 presents the inequality in the distribution of land among the size groups within the OBCs over the periods from 1980-81 to 2016-17, through the Lorenz curves and Gini coefficient values. Lorenz curves are more stretched from the equal curve, it denotes that, distribution of the land was unequal among the size groups within the OBCs. Gini

coefficient signifies inequality in the value method, Gini value in the 1980-81 was 0.43; in the 1990-91, it was 0.44; in 2000-01, it was 0.43; in 2010-11, it became 0.40, and in the 2016-17, the inequality slightly reduced to 0.37. Lorenz curves and Gini values divulge that inequality among the size groups within OBCs had been dwindling over the period except in 1990-91.

Figure 5.6 Lorenz curves for measures size-wise distribution of land within Other Backward Classes from 1980-81 to 2016-17.





5.5.4. Size-wise distribution of land within Others

In the village, other community households are 42 which constitute 4.9 percent of the total village households. Other community population is 153 which constitute 4.5 percent of the total village population. 38 households possess land out of the 42 households. Landless households are very lesser in the other castes. In the beginning, other communities were landed community in the village. The village was socially, politically and economically dominated by other communities or upper castes up to 1990-91. This community obtained land from the native kings without any labor and cost. Over the time, other communities obtained employment opportunities in government and private sectors at urban places. Moreover, investment opportunities in real estate and the establishment of industries in the cities or towns was seen as the lucrative opportunities for other communities, and hence they sold their lands in the village. These were the factors that caused a decline in the powers of other communities in the village.

The table 5.9 shows distribution of land among the size groups within Others from 1980-81 to 2016-17. By 1980-81, 21 (61.8 percent) marginal, small, and medium landholding households controlled 75 (9.7 percent) acres land, while 13 (38.2 percent) large landholding households controlled 700 (90.3 percent) acres land of the Others in the village. By 2016-17, 31 (81.6 percent) marginal, small, and medium landholding households possessed 103 (50.0 percent) acres land, while 7 (18.4 percent) large landholding households owned 103 (50.0 percent) acres of the other community land in the

village. Size-wise distribution of land among the size groups within Others was highly unequal over the period.

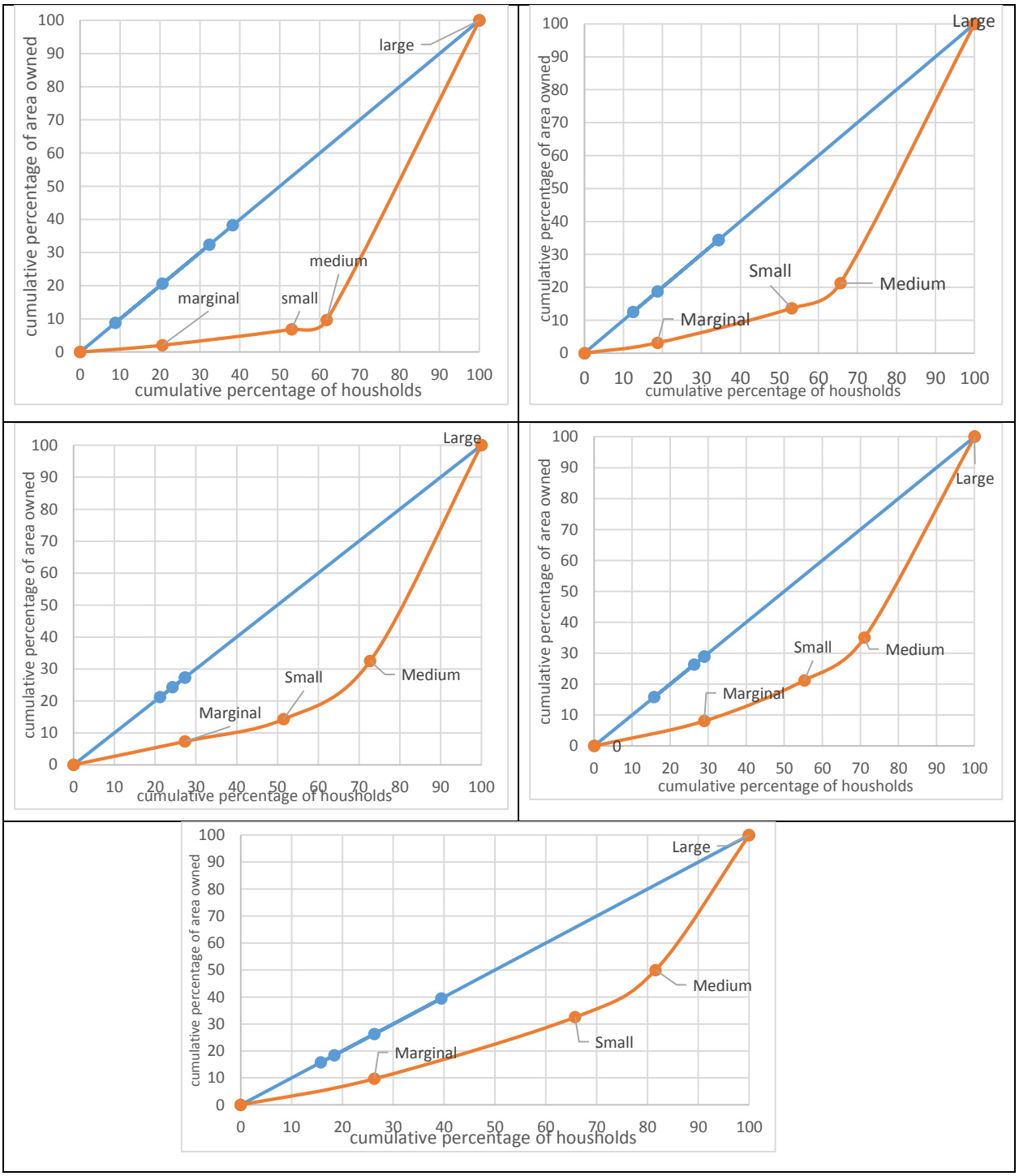
Table 5.9 Classification of land owned within Others class-wise from 1980-81 to 2016-17.

	1980-81		1990-91		2000-01		2010-11		2016-17	
Size of holdings	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned	Land h. h and area in acres	% of land h. h and % area owned
Marginal	7 (16)*	20.6 (2.1)**	6 (11)	18.8 (3.1)	9 (22)	27.3 (7.3)	11 (24)	28.9 (8.1)	10 (20)	26.3 (9.7)
Small	11 (37)	32.4 (4.8)	11 (37)	34.4 (10.5)	8 (21)	24.2 (7.0)	10 (39)	26.3 (13.1)	15 (47)	39.5 (22.8)
Medium	3 (22)	8.8 (2.8)	4 (27)	12.5 (7.7)	7 (55)	21.2 (18.2)	6 (41)	15.8 (13.8)	6 (36)	15.8 (17.5)
Large	13 (700)	38.2 (90.3)	11 (277)	34.4 (78.7)	9 (204)	27.3 (67.5)	11 (193)	28.9 (65.0)	7 (103)	18.4 (50.0)
Total	34 (775)	100 (100)	32 (352)	100 (100)	100 (100)	100 (100)	38 (297)	100 (100)	38 (206)	100 (100)
Gini coefficient		0.53	0.48		0.47		0.42		0.40	

Source: land records of the village, field survey data. Numbers in the parenthesis * indicates the land owned in acres, ** shows the percent of land owned. Note: H.H indicates landholding households.

Lorenz curves in the figure 5.7 below shows the inequality among the size groups. Over the period from 1980-81 to 2016-17, Lorenz curves stretched from 45 degrees equality curve. Gini coefficient values give the absolute inequality in the numbers. These value in 1980-81was 0.53; in 1990-91, it was 0.48; in 2000-01, it was 0.47; in the 2010-11, it was as 0.42; and in 2016-17, it was 0.40. By observing the Gini coefficient values and Lorenz curves, it can be considered that inequality among the size groups had been decreasing within the other community, but was is not much. Overall in the village, distribution of land among the size groups is observed in each social groups. It shows that by 2016-17, there was highest inequality among the other communities followed by OBCs, and the lowest inequality was among the STs followed by SCs, whereas by 1980-81, the highest inequality was among the Others followed by SCs, and the lowest inequality was among the STs followed by OBCs.

Figure 5.7 Lorenz curves for measures size-wise distribution of land within Others from 1980-81 to 2016-17.



5.6. Disparity in Land Holdings among Various Social Groups

The estimation of disparities among the SCs in group "A" and the Non-SCs in group "B" was carried out by applying a simple method named Disparity Ratio. This ratio measures the relative performance of Group A (either SCs or STs) relative to Group B (in this case, the Non-SC/STs). Any value < 1 indicates lower achievement for Group A or Group B and vice versa. Any achievement < 1 exhibits the lower achievement for group A and values > 1 displays the higher achievement.

Disparity ratio between (A, B) = Achievement of group A/Achievement of group B

The table 5.10 below, shows the disparity ratio in land holdings among the social groups, from 1980-81 to 2016-17. The SCs are in group A, and the rest of the social groups are in group B. It divulges that achievement of group A increased from 0.25 in 1980-81 to 0.29 in 1990-91, but it decelerated to 0.28 in 2000-2001, and it was constant then onwards. In the case of the STs, achievement was constant with 0.03 over the periods. The STs were in group A and the rest of the social groups were in group B. In the case of the OBCs, achievement was 0.53 in 1980-81, and then it had been increasing every decade; 1.23 in 1990-91, 1.43 in 2000-01, 1.44 in 2010-11, and 1.82 in the 2016-17.

Table 5.10 Disparity ratio in Land Holdings.

	Ratio of SCs in group A, STs, OBC and Others in group B	Ratio of STs in group A, SC, OBC, Others in group B	Ratio of OBC in group A, SC, and Others in group B	Ratio of Others in group A, OBC, and SC in group B
1980-81	0.25	0.03	0.53	0.75
1990-91	0.29	0.03	1.23	0.24
2000-01	0.28	0.03	1.43	0.20
2010-11	0.28	0.03	1.44	0.19
2016-17	0.28	0.03	1.82	0.13

Source: calculated from the land records of the village and Field Survey, 2017.

The OBCs were in group A and the rest of the social groups were in group B. In the case of Others, it was the highest achievement of 0.75 in 1980-81 compared to the rest of the

social groups. From 1990-91, achievement of Others had been decelerating to 0.24 in 1990-91, 0.20 in 2000-01, 0.19 in 2010-11, and 0.13 in 2016-17. When the Others were in group A, the rest of the social groups were in group B. Here, achievement of the SCs, STs, and Others over the period was less than one, and achievement of OBCs was more than one. It divulges that the OBCs achievement in possessing the land was very high compared to the rest of the social groups.

The table 5.11 below, reflects the percentage change of land in each social groups over the period. In the case of the SCs, the percentage change of land in 1990-91 was positive with 13.2 and the percentage change of households was also positive with 124.1 percent. Then percentage change of SC land was -2.4 in 2000-01, 0.2 in 2010-11, and -1.2 in 2016-17. In relation to the STs, percentage change of land was 6.5 in 1990-91, -2.0 in 2000-01, 4.2 in the 2010-11, and -10.0 in 2016-17. In the case of the OBCs, percentage change of land was 59.5 percent in 1990-91, 8.1 percent in 2000-01, 0.2 in 2010-1, and 9.4 in 2016-17. Regarding the Others, percentage change of land was -54.6 in 1990-91, -14.2 in 2000-01, -1.7 in 2010-11, and -30 in 2016-17.

Percentage Change = (Pt –P (t-1))/P (t-1) *100. Herein, "t" refers to current time period and "P (t-1)" refers to the previous years' time period.

Percentage change of land was always positive in the cases of OBCs compared to the rest of the social groups where percentage change of land fluctuation between positive and negative values over the periods.

Table 5.11 Percentage change in land holdings.

YEAR	SC	ST	OBC	OTHERS
1990-91	13.2 (124.1)	6.5 (41.7)	59.5 (39.7)	-54.6 (-5.9)
2000-01	-2.4 (11.5)	-2.0 (-11.8)	8.1 (29.4)	-14.2 (3.1)
2010-11	0.2 (0.0)	4.2 (26.7)	0.2 (7.8)	-1.7 (15.2)
2016-17	-1.2 (4.8)	-10.0 (-21.1)	9.4 (7.6)	-30.6 (-15.8)

Source: Field Survey, 2017. Note: Figures in the parentheses shows the percentage change in the households.

5.7. Women condition

Women play important role in their home along with men in the rural areas. Nowadays in the rural areas, the role of women is changing and they are now playing predominate role in agriucltural farming along with family responsibilities. When the men, who are the head of the family, migrate to urban areas, the burden to look after the agricultural work has fallen on women. When it comes to the distribution of resources among the gender, there is gender discrimination in land ownership and agriculture wage distribution towards the women. Eliminating women from ownership of agricultural land can be rigorously harmful to their well-being (Panda and Agarwal 2005).

5.7.1. Gender discrimination in land ownership

The table.5.12 shows the ownership of the land among the social groups gender-wise. In the village, out of the 1830 acres of the village land, only 28 acres of land is in the name of female, in which SC women held 8 acres, ST women held 3 acres, OBC women held 12 acres, and other communities women held 5 acres in 2016-17. It clearly shows the gender discrimination in landholdings across the social groups. Every household land should be distributed equally between the head of the female and male if they have more than 3 acres land. Following words tells that "Land rights are not a 'given' and will not 'offer' to most of south Asian women without argue. Getting those rights will need concurrent struggles against many different aspects of gender inequalities rooted social norms and practices, access to public decision making bodies at every level, gendered ideas and representations, and so on (Agarwal 1994, p-44)". Given the gender disparity in landholding, rising women's participation in the labour market is seen as a way of providing the motivation required to improve women's welfare and contribute towards their empowerment (Garikipati. 2008).

Table 5.12 Ownership of Land among the social groups gender-wise in the village.

Social groups	WOMEN	MEN	TOTAL
SC	8	390	398
ST	3	42	45
OBC	12	1169	1181
Others	5	201	206
Total	28	1802	1830

Source: Field Survey, 2017.

5.8. Ownership of Assets in Village

Present study mainly discusses the pattern of asset ownership in the village according to the field study. The table 5.13 reflects that the SCs and STs are most disadvantaged groups in the asset holdings. Percentage of an asset held by these groups is less than the percentage of households compared to OBCs and Others. Overall, an average asset value among all social groups is Rs. 1,374,492, but in the case of the OBCs and other communities, an average asset value is more than the village average asset value. Asset holdings also determine the economic efficiency of each social group. Others community social group in the village are most advantageous group in the total asset holdings in the village compared to the rest of the social groups because percentage assets holding is more than the percentage households.

Table 5.13 Percentage distribution of assets among the social groups in the village.

Social groups	House holds	% of households	Cumulative percent of household	Total asset value Rs.	% of asset owned by households	Cumulative percent of assets	Average asset value RS.
SC	257	30.1	30.1	268403000	22.8	22.8	1044370
ST	43	5.0	35.1	31101500	2.6	25.5	723291
OBC	513	60.0	95.1	737966000	62.8	88.3	1438530
Others	42	4.9	100.0	137720000	11.7	100.00	3279048
TOTAL	855	100.00		1175190500	100.00		1374492

Source: field survey data, 2016-17.

The table 5.14 shows the percentage share of each asset among various asset holdings. Here, total assets include the asset value of the land, house, animal, and machinery. It depicts the share of each social group in each asset. In this, the OBC households hold highest percentage share in each asset holdings followed by the SC households, while the STs hold lowest percentage share in each asset holding followed by other communities households.

Table 5.14 Percentage share of each asset among the households.

Social Groups	Percent share of land value	Percent share of house value	Percent share of animal and machinery value
SC	152* (22.79)	257* (24.91)	24* (10.35)
ST	15 (2.58)	43 (3.52)	4 (0.88)
OBC	327 (62.84)	513 (60.24)	110 (79.40)
Others	38 (11.79)	42 (11.32)	9 (9.36)
Total	532 (100)	855 (100)	147 (100)

Source: field survey data, 2016-17* indicate the number of households, numbers in the parenthesis shows that percentage share of various asset values.

5.9. Decomposition of Asset Inequality

One of the major constraints of the Gini Coefficient is that it is not additively decomposable into various sub-groups, and its decomposition encompasses a residual term (Anand 1983). Therefore, it is not possible to decompose the whole inequality into inequality within different groups of observations and between these groups. Such a study is possible for inequality indices that can be decomposed into various subgroups (Saha, 2009). The generally used inequality index for decomposition analysis is the Theil inequality index (T) that can be calculated by using the following formula:

$$\textbf{Theil inequality index } (T) = \Sigma_j (Y_j/Y)\, T_j + \Sigma_j [(Y_j/Y) \ln \{(Y_j/Y)/(n_j/n)\}] = TW + TB$$

Theil inequality index is decomposable into two parts which are i) within the group (Tw), and ii) between group (Tb) components. The within-group component can describe the value of inequality index when all between-group differences are repressed by equalizing the group mean to the total mean by equi-proportionate alter the values of the observations within a group. In this way, between-group inequality is excluded but the inequality within each group persists unchanged. More precisely, the within-group inequality is measured as (Partha Saha 2009):

***The within-group inequality is measured as:**

$$T_W = \Sigma_j (Y_j/Y)\, T_j$$

Where

Y_j = is the total assets owned by the households belonging to the j^{th} group,

Y = total asset value of all the households

'T_j=the Theil inequality index for the j^{th} group.

Therefore, "Y_j/Y" is the asset share for the j^{th} group.

$$T_j = \Sigma\, k\, (y_{jk} / Y_j) \ln \{(y_{jk}/ Y_j) / (n_{jk}/ n_j)\}$$

Where

n_{jk}= number of household in the j^{th} group

n_j= the total number of households in the j^{th} group

y_{jk}= the value of asset owned by the j^{th} household

Y_j = total assets value of all the households in the jth group

The between-group element can express the value of inequality index when all within-group differences are repressed by allocating each observation within a group and the average value of the group. Therefore, within group differences are removed, and the consequential distribution displays inequality arising from between-group differences. The between-group inequality is measured as:

*** The between-group inequality is measured as**

$$T_b = \Sigma_j\, [(Y_j /Y) \ln \{(Y_j /Y)/ (n_j/n)\}]$$

n_j = the number of households in the j^{th} group

n = total number of households

Y = total asset value of all the households

The table 5.15 below, observes that decomposing the asset inequality has been taken the total value of land of the village, house value of the all the households, and animal and machinery value of all the households. Decomposition of asset inequality in the study village shows that high inequality in the ownership of asset was the result of inequality within a social group, but not as a result of inequality between social groups. In the village

within-social group, inequality contribution was 91 percent and between-social group inequality was 9 percent to the total asset inequality. This is consistent with Kanbur (2006) who identifies that the between-group inequality was normally less than 15 percent of total inequality. Moreover, it is inconsistent with Saha (2009) doctorial work stating that between-social group, inequalities among the social groups were more than 53 percent. Furthermore, an important contributor to overall asset inequality is inequality within the OBCs followed by the SCs. Less contributor to total inequality is inequality within the STs and followed by other communities. Distribution of the land is highly unequal within Others compared to rest of the social groups, but in the case of asset distribution within in the Others, less unequal compared to rest of the social groups like OBCs and SCs.

Table 5.15 Percentage contribution to overall Theil inequality by social group-wise in Gudiwada village.

Social group	Percentage contribution
Within Scheduled Castes	0.131 (23.2 %)
Within Scheduled Tribes	0.020 (3.5 %)
Within Other Backward Classes	0.326 (57.5 %)
Within Others	0.039 (6.8 %)
Between social groups	0.051 (9.0 %)
Total Thiel index value	0.566 (100)

Source: field survey 2016-17.

5.10. Agriculture condition in the village

Agriculture is the major sector to provide employment and livelihood for more than 70 percent of rural people. According to 2011-12 economic survey, total workforce in India was 467 million, out of which 228 million (48.8 percent) workers were in agriculture. Generation of income in agriculture sector was diverted for the establishment of new small-scale industries and urban real estate sector. Agriculture sector is interlinked with industry and service sectors. The agriculture sector supplies the raw materials to the rest of the sectors (industry and services). The creation of final goods in the industry and services sectors will be used in the agriculture sector. This is a cyclic process. Any growth in the agriculture sector not only impacts the income levels of those who work in agriculture, but

also incomes of the rest of the sectors. In recent time, growth of agriculture is faded out across the country due to various reasons discussed in the previous chapters.

To analyse the agrarian conditions and farmer's situation in the villages, Gudiwada village in Nalgonda district of Telangana has been taken as case study. This village had dynamic nature in the agriculture, more than half of the village cultivated area under the dry land farming and remaining cultivated area under the irrigation. Major dryland crops in the village are cotton, pulses, and paddy in the irrigated land. The Cobb-Douglas production function is used to study the relationship between the level of output and the quantities of inputs employed in the production.

Methodology

The present study uses the Cobb-Douglas production function for estimating the relationship between dependent and explanatory variables. In the field of agriculture economics, the Cobb–Douglas production function is a standard functional method used to denote the technical relationship between the amounts of two or more inputs such as labor, capital, and amount of output that can be produced by those inputs. The Cobb-Douglas form developed and tested against statistical evidence by Charles Cobb and Paul Douglas during 1927–1947 (Hlongwa 2015).

The basic formula of Cobb-Douglas production function is;

$$Q = AK^{a}L^{b}$$

Where, A = positive constant.

a and b = positive fractions.

b = 1 – a

This function can also be expressed as follows:

$$Q = ak^{a}L^{1-a}$$

Production function for cotton

$$Y = a\, x_1^{b1}.x_2^{b2}.x_3^{b3}.x_4^{b4}$$

Y=cotton revenue

a= constant

x1= land rent

x2= Other input costs (including, seeds, pesticides machinery cost)

x3= Labour cost

x4= Fertilizer cost

Then we transformed the above equation in the following way

$$logY = loga + b_1 logx_1 + b_2 logx_2 + b_3 logx_3 + b_4 logx_4$$

Sum of elasticity coefficients (b1+b2+b3+b4+b5) will be yielded the information about the returns to the scale.

The sum (b1+b2+b3+b4+b5) gives information about the returns to scale, that is, if sum (b1+b2+b3+b4+b5) =1, then there will be constant returns to scale It occurs when the proportion of output increases by a same as the proportion of input increases.

If sum (b1+b2+b3+b4+b5) >1 then, there is increasing the return to scale, specifically, when the output increases by a larger proportion than the increase in inputs during the production process.

If sum (b1+b2+b3+b4+b5) <1 then, there is decreasing return to scale, that occurs when the proportion of output is less than the increased input during the production process.

Production function for Paddy:

$$Y = a\, x_1^{b1}.x_2^{b2}.x_3^{b3}.x_4^{b4}.x_5^{b5}$$

Y= paddy revenue

a= constant

x1= land rent

x2= Other input costs (including, seeds, pesticides machinery cost)

x3= Irrigation cost

x4= Labour cost

x5= Fertilizer cost

Then we transformed the above equation in the following way

$$logY = loga + b_1 logx_1 + b_2 logx_2 + b_3 logx_3 + b_4 logx_4 + b_5 logx_5$$

Empirical Results

Using the Cobb-Douglas production function, the present study estimates the regression function which has been mentioned in the methodology. The results of the regression (production function) for two major crops, namely paddy and cotton have been analyzed in the following sections.

Table 5.16 Results of Cobb-Douglas production function of Cotton Crop.

	a	x1	x2	x3	x4	Sum of elasticity coefficients	R2	Adjusted R2
Coefficient value	0.922***	0.14***	0.073**	0.046	0.72***			
Standard Errors	0.129	0.047	0.030	0.040	0.044	0.979	0.846	0.844
t-value	7.13	3.03	2.44	1.13	16.32			

Source: calculated form field survey2017, Note: Constant (a), Land rent (x1), other input cost (x2), labour cost (x3), fertilizer cost (x4). Sum of elasticity coefficients = x1+x2+x3+x4+. *, ** and *** Significant at 10%, 5% and 1% level respectively.

The above table 5.16 displays the details of production elasticities of the cotton crop. The adjusted coefficient of multiple determinations is estimated at 0.844 for the cotton. The value divulges that 84 percent of cotton revenue output is explained by the explanatory variables used in the production function. The sum of production elasticities is less than unity indicating decreasing returns to scale for the cotton crop. The values of individual elasticity co-efficient reveal that land rent (x1) and fertilizer cost (x4) are significant and both of these coefficients are significant at 1 percent level. Similarly, the value of the coefficient of other input cost (x2) is significant at 5 % level. In the village under study, the land rent, fertilizer, and other input costs are playing a vital role in the cotton revenue

generation. In terms of the other coefficient such as labor costs is positive but statistically insignificant.

The table 5.17 below, gives details of production elasticities of paddy. The adjusted coefficient of multiple determinations is estimated at 0.720 for rice. The value reveals that 72 Percent of paddy revenue output is explained by the explanatory variables used in the production function. The sum of production elasticities is less than unity indicating decreasing returns to scale.

The values of individual elasticity co-efficient reveal that land rent (x1) and other input costs (x2) are significant and both of these coefficients are significant at 1 percent level. In Gudiwada village, the land rent and other input costs are playing a vital role in the paddy revenue generation. In terms of the other coefficients, irrigation and labor costs are positive but statistically insignificant.

Table 5.17 Results of Cobb-Douglas production function of paddy crop.

	A	x1	x2	x3	x4	x5	Sum of elasticity coefficients	R2	Adjusted R2
Coefficient value	1.475***	0.183***	0.541***	0.058	0.008	-0.007			
Standard Errors	0.179	0.050	0.029	0.061	0.064	0.034	0.78	0.725	0.720
t-value	8.23	3.6	18.35	0.95	0.12	-0.21			

Source: calculated form field survey2017, Note: Constant (a), Land rent (x1), other input cost (x2), irrigation cost (x3), labour cost (x4) and fertilizer cost (x5).Sum of elasticity coefficients = x1+x2+x3+x4+x5. *, ** and *** Significant at 10%, 5% and 1% level respectively.

On the other hand, fertilizer cost has a negative impact on the paddy revenue generation, but it is statistically insignificant. This means, as the fertilizer costs increase after a certain level of threshold, it has a negative impact on the rice revenue. After the empirical results of the paddy crop production function, we have presented the results of crop production function in the following section.

By observing the table 5.16 Cobb-Douglas production function for cotton crop as macro level it shows that the values of individual elasticity co-efficient reveal that land rent (x1) and fertilizer cost (x4) are significant and both of these coefficients are significant at 1 percent level. Similarly, the value of the coefficient of other input cost (x2) is significant at 5 % level. The village under study at macro level, the land rent, fertilizer, and other input

costs are playing a vital role in the cotton revenue generation. In terms of the other coefficient such as labor costs is positive but statistically insignificant. If observe the table 5.18 below, The adjusted coefficient of multiple determinations is estimated at 0.80 for marginal, 0.71 for small, 0.87 for medium, and 0.99 for large farmers for the cotton. The value divulges that (at 0.80 for marginal, 0.71 for small, 0.87 for medium, and 0.99 for large farmers) percent of cotton revenue output is explained by the explanatory variables used in the each size group production function

Table 5.18 Results of Cobb-Douglas production function for each size group cotton farmers

Marginal	a	x1	x2	x3	x4	Sum of elasticity coefficients	R2	Adjusted R2
Coefficient value (standard errors)	1.18 (0.17)	0.16 (0.05)	0.032 (0.042)	0.002 (0.048)	0.73 (0.06)	0.924	0.81	0.80
t-value	6.69	2.80**	0.77	0.06	12.07 ***			
Small								
Coefficient value (standard errors)	0.924 (0.36)	0.17 (0.11)	0.09 (0.05)	0.019 (0.12)	0.69 (0.09)	0.969	0.72	0.71
t-value	2.55	1.56	1.93	0.16	7.60 ***			
Medium								
Coefficient value (standard errors)	0.876 (0.45)	-0.125 (0.26)	0.07 (0.17)	0.25 (0.13)	0.79 (0.16)	0.985	0.90	0.87
t-value	1.95	-0.48	0.44	1.88	4.75 ***			
Large								
Coefficient value (standard errors)	1.54 (0.22)	-0.008 (0.02)	0.10 (0.06)	0.05 (0.12)	0.71 (0.11)	0.852	0.99	0.99
t-value	6.82	-0.40	1.59	0.43	6.45 ***			

Source: field survey in 2017 in Gudiwada village, numbers in parenthesis shows standard errors, ***, **, * shows significant at 1 %, 5 %, 10 % level. . Constant a, Land Rent (x1), other inputs cost (x2), Labour cost (x3), Fertilizer cost (x4).

Cobb-Douglas production for each size group farmers, in each size group the sum of production elasticities is less than unity indicating decreasing returns to scale for the cotton crop. In the case marginal farmers two coefficients are significant which are land rent is at 5 percent and fertilizer cost at 1 percent level. Values of individual elasticity co-efficient for each size group reveal that fertilizer cost (x4) is significant at 1 percent level, remaining factors are not showing significant. In the all the size groups, all factors are showing positive coefficient, except land rent in the medium, large size groups. Overall, various

factors impact on cotton revenues showing different results compared to same factors impact on cotton revenue for the each size group farmers. Due to the small observations results are not showing well.

By observing the table 5.17 Cobb-Douglas production function for paddy crop as macro level it shows that the values of individual elasticity co-efficient reveal that land rent (x1) and other input cost (x2) are significant and both of these coefficients are significant at 1 percent level. In terms of the other coefficients, irrigation and labor costs are positive but statistically insignificant. On the other hand, fertilizer cost has a negative impact on the rice revenue generation, but it is statistically insignificant. If observe the table 5.19 below, The adjusted coefficient of multiple determinations is estimated at 0.75 for marginal, 0.63 for small, 0.94 for medium very low for the paddy , and for large farmers showing no results because of small sample size.

Table 5.19 Results of Cobb-Douglas production function for each size group paddy farmers.

Marginal	a	x1	x2	x3	x4	X5	Sum of elasticity coefficients	R2	Adjusted R2
Coefficient value (standard errors)	1.36 (0.18)	0.03 (0.04)	0.65 (0.03)	0.06 (0.06)	0.05 (0.06)	-0.006 (0.03)	0.79	0.76	0.75
t-value	7.18	0.82	18.72***	1.01	0.79	-0.19			
Small									
Coefficient value (standard errors)	1.85 (0.53)	0.53 (0.14)	0.35 (0.05)	-0.12 (0.18)	-0.12 (0.18)	0.031 (0.09)	0.67	0.63	0.60
t-value	3.50	3.60***	5.97***	-0.72	-0.69	3.50***			
Medium									
Coefficient value (standard errors)	2.12 (0.48)	0.28 (0.12)	0.68 (0.07)	-0.28 (0.17)	0.0008 (0.14)	-0.15 (0.07)	0.53	0.94	0.91
t-value	4.35	2.39**	8.93***	-1.63	0.06	-2.05			
Large									
Coefficient value (standard errors)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0	0.0
t-value	0.0	0.0	0.0	0.0	0.0	0.0			

Source: field survey in 2017 in Gudiwada village, numbers in parenthesis shows standard errors, ***, **, * shows significant at 1 %, 5 %, 10 % level. Land Rent (x1), Other Input cost (x2), Irrigation cost (x3), Labour cost (x4), Fertilizer cost (NKP) (x5).

The value divulges that (at 0.80 for marginal, 0.71 for small, and 0.87 for medium,) percent of paddy revenue output is explained by the explanatory variables used in the each size group production function. Cobb-Douglas production for each size group farmers, in each size group the sum of production elasticities is less than unity indicating decreasing returns to scale for the cotton crop. Values of individual elasticity co-efficient for each size group reveal that, in the case of marginal farmers other input cost (x2) is significant at 1 percent level, remaining factors coefficient are positive but statistically not significant. In the case of small farmers land rent (x1), other input cost (x2) and fertilizer cost (x5) are significant at 1 percent level, remaining factors coefficient are negative such as irrigation, labour cost , but it is statistically also not significant. In the all the size groups, all factors are showing positive coefficient, except land rent in the medium, large size groups. In the case of medium farmers land rent (x1) significant at 5 percent level and other input cost (x2) is significant at 1 percent level, remaining factors coefficient are positive but statistically not significant. Labor cost (x4) coefficient is positive but statistically insignificant, remaining factors such as Irrigation cost (x3), Fertilizer cost (x5) coefficient are negative and also statistically not significant. In the case of large paddy farmer results are not showing due to the small sample size. But overall results shows that, different factors are affecting in paddy revenue generation for each size group farmer. Small size of observations causing the different results and not showing significance level.

5.11. Size-wise Classification of cotton farmers in the village

It can be noticed from the table 5.20 below about cotton farming in the village, where total cultivated area is 1390 acres out of 1830 acres of total village land. The cultivated area under the cotton crop is 721 (51.57 percent) acres of total village cultivated area. This part will analyze the classification of cultivated area of cotton crop among the different size group farmers. The total cotton cultivators in the village are 253, out of which 146 (57.7 percent) marginal farmers cultivate 233 (32.3) acres of land, 82 (32.4 percent) small farmers cultivate 297 (41.2 percent) acres, 19 (7.5 percent) medium farmers cultivate 128 (17.8) acres, and 6 (2.4 percent) large farmers cultivate 63 (8.7 percent) acres of total cotton cultivated area.

The average yield or productivity of cotton in the village is mentioned size-wise. The average yield of the marginal farmers is 7.20 quintals per acre and that of small farmers is

7.22 quintals per acre, whereas medium farmers obtain 8.59 quintals per acre and large farmers obtain 8.87 quintals per acre. The average yield for all farmers is 7.60 quintals per acres. In the village, cotton mostly depends on rainfall and less than 3 percent area is under the irrigation. It shows that there is no inverse relationship between farm size and productivity among the cotton cultivated farmers. It is inconsistent with crop productivity per unit of land deteriorated with an increase in the farm size (Sen 1962, Mazumdar 1965, Hanumatha Rao 1966, Saini 1979). And it is consistent with the outcome that there is no scope for propounding a general law for an inverse relationship or even for a positive relationship (Rudra 1983, Rao. A. P 1967). Cost of the cultivation is one of the important factors causing more burden on cotton farmers. The recent cost of cultivation is also one of the factors that leads agrarian distress along with lack of timely rainfall. The table 5.20 shows the average cost of cultivation for cotton crop among the size groups in the village under study. It is highest in the marginal farmers with Rs.24072 followed by the medium farmer and lowest in the large farmers Rs.20524 followed by the small farmer. Up to 1995, The marginal and small farmers along with the medium and large farmers used their own indigenous seeds, plough inputs, the dung of bullocks, and bullock carts in their farms instead of plough tractors, over the use of fertilizers, pesticides and genetically modified and Bacillus Thuringiensis (BT) seeds.

Table 5.20 Total Production, total income and average productivity of cotton among the different size of the farmers.

Size of farmers In acres	No. of farmers	No. of acres	Production of cotton (qu.)	Average yield of cotton per acre (qu.)	Total agriculture income (TI)	Total cost of cultivation (TC)	Av. Cost of cultivation per acre Rs. (ACC)	Av. income per acre Rs.(AI)	Net income (TI-TC)	No. of farmers sold at product MSP
Marginal 0.1-2.50	146 (57.7)	233 (32.3)	1677	7.20	8001500	5608700	24072	34341	10270	20
Small 2.51-5.0	82 (32.4)	297 (41.2)	2145	7.22	9652500	6355500	21399	32500	11101	19
Medium 5.0-10	19 (7.5)	128 (17.8)	1100	8.59	4927500	2754000	21516	38496	16980	17
Large Above 10	6 (2.4)	63 (8.7)	559	8.87	2795000	1335000	21190	44365	23175	6
Total	253 (100)	721 (100)	5481	7.60	25376500	16053200	22265	35196	12931	62

Source field survey 2016-17, the total cost of cultivation calculated at the A2= cost A1+ Rent paid for lease in the land.

The increase of usage of new inputs in the farm fields has, in fact, destroyed the old farm inputs that led to increased average cost of cultivation of marginal and small farmers than remaining farmers. Medium and large farmers are comparatively in a better position to purchase new technology and various other inputs like fertilizers and machinery. Net income per acre can be calculated by deducting the average cost of cultivation from average income (ACC-AI). There is a huge difference in net income per acres among the size groups, and this reflects that small and marginal farmers reap fewer profits from the agriculture cultivation than medium and large farmers. Here, one thing is discerned that, cost of cultivation is calculated at A2 means not included own labor of farmers. If the own labor cost is included in the cost of cultivation, marginal and small farmers will not have any profit because own labor or family labor use is higher in the marginal and small farmers. In recent times in Telangana, self-immolation of cotton farmers increased due to the spurious seeds and the overburden cost of cultivation than income per acre of output. Cotton has become main commercial crop in the villages. Hence it has led to spurious seeds supply. "One farmer in the field village exposed that some illiterate farmer purchased the cotton seeds from trader along with one rich farmer. Illiterate farmers have sowed seeds in their fields along with rich farmers, but in the illiterate farmer's field, seeds are not germinated. The farmer then realized that they were cheated by a trader who sold seeds to them. Some of these farmers have approached the trader and asked him about spurious seeds, the trader had replied them that the land of small farmers is not fertile and the rich farmers land is being fertile but soon the small farmers realized that they are being deceived". Here, it appears a failure of government and officials to stop bogus seeds and pesticides.

5.12. Size-wise classification of Paddy farmers in the village.

In the village, 264 farmers cultivate paddy and area under paddy cultivation is 598 acres of total village land. If we observe the size-wise paddy cultivating farmers from the table 5.21 below, there are 186 (70.5 percent) marginal farmers, and they are farming 252 acres, 60 (22.7 percent) small farmers are farming 215 acres, 15 (5.7 percent) medium farmers are cultivating 30 acres, and 3 (1.1 percent) large farmers are cultivating 30 acres of total paddy cultivation area in the village. Paddy as a crop mainly depends on water. Tank water, bore wells, and Musi canals are the major irrigation sources for cultivation in the village, but

major area is dependent on tank and bore well. In the case of yield or productivity in the village, marginal and small farmers are producing 25.42 and 26.0 quintals productivity per acre, while medium and large farmers are generating 24.59 and 24.83 quintals yield per acre. In the village, paddy cultivating marginal and small farmers are more productive than medium and large farmers. During the 1960s and 70s in India, large argument about relationship between farm size and productivity had taken place among the economists. Crop productivity per unit of land deteriorated with an increase in the farm size (Sen 1962, Mazumdar 1965, Hanumatha Rao 1966, Saini 1979). The following argument is inconsistent in the matter of cotton cultivation and consistent regarding paddy cultivation. Here, it can be summarized that irrigation facilities make the marginal and small farmers more productive than medium and large farmers. With regard to the average cost of cultivation of paddy per acre, the highest cost of cultivation can be seen in marginal and medium farmers with Rs. 18236 and 18061 per acre respectively, whereas the lowest cost of cultivation can be seen in small farmers with Rs. 17293 followed by the large farmers with Rs. 17667.

Table 5.21 Total Production, total income and average productivity of paddy among the different size of the farmers.

Size of farmers (in acres)	No. of farmers	No. of acres	Production of Paddy (qu.)	Average yield of paddy per acre (qu.)	Total agriculture income (TI)	Total cost of cultivation (TC)	Av. Cost of cultivation per acre Rs. ACC	Av. income per acre Rs. ATI	Ave.Net income ATI-ATC	Sold of product at MSP No. of farmers
Marginal 0.1-2.5	186 (70.5)	255	6482	25.42	9074800	4650250	18236	35587	17351	170
Small 2.6-5.0	60 (22.7)	215	5591	26.00	7827400	3718000	17293	36406	19113	50
Medium 5.1-10	15 (5.7)	98	2410	24.59	3374000	1770000	18061	34428	16367	15
Large Above 10	3 (1.1)	30	745	24.83	1043000	530000	17667	34766	17100	3
Total	264 (100)	598	15228	25.46	21319200	10668250	17840	35651	17811	238

Source field survey 2016-17, the total cost of cultivation calculated at the A2= cost A1+ Rent paid for lease in the land.

Moreover, overall average paddy cost of cultivation is Rs. 17840. Average Net Income (ANI) per acre among each size groups means deducting the average cost of cultivation (ACC) from the average total income (ATI) of the paddy. Marginal and small farmers are receiving more profits by cultivating paddy than medium and large farmers, and it is

reverse in the case of cotton cultivating farmers. Regarding paddy crop, 90 percent of farmers are selling their crop at minimum support price in IKP (Indira Kranthi Patham) center which is established by the government.

5.13. Size-wise classification of pulses farmers in the village

In the village, cotton and paddy produced area and farmers are converted to the cultivation of pulses by order of the Telangana state government during the period of the 2016-17 in beginning of crop year. The table 5.22 shows that 20 farmers are cultivating the pulses in 71 acres. Out of them, 5 (25 percent) marginal farmers are cultivating 10 acres, 13 (65 percent) small farmers are cultivating 48 acres, and 2 (10 percent) medium farmers are cultivating 13 acres of total pulses cultivated area in the village. The average yield per acre among the size group farmers is that; among marginal farmers it was 1.7, small farmers, it was 1.9; and medium farmers, it was 2.3 quintals per acre and no large farmer grows pulses. The overall yield of the pulses among the size groups is 1.9 quintals per acre. In the case of pulses, marginal and small farmers are less productive than a medium farmer. Here, no inverse relationship between the size and yield.

Table 5.22 Total Production, total income and average productivity of pulses among the different size of the farmers.

Size of farmers	No. of farmers	No. of acres	Production of pulses (qu.)	Average yield of pulses per acre (qu.)	Total agriculture income (TI)	Total cost of cultivation (TC)	Av. Cost of cultivation per acre Rs. (ACC)	Av. income per acre Rs.(ATI)	Ave.Net income (ATI-ACC)	Sold of product at MSP No. of farmers
Marginal 0.1-2.5	5 (25)	10	17	1.7	103200	62000	3647	7310	3663	0
Small 2.6-5.0	13 (65)	48	90	1.9	292400	185000	2056	8062	6007	1
Medium 5.1-10	2 (10)	13	30	2.3	129000	73000	2433	9923	7490	2
Large Above 10	0 (0)	0	0	0.0	0	0	0	0	0	0
Total	20 (100)	71	137	1.9	524600	320000	2336	8297	5961	3

Source field survey 2016-17, the total cost of cultivation calculated at the A2= cost A1+ Rent paid for lease in the land. Numbers in parenthesis shows the percentage.

Average net income (ATI - ACC) among the pulses cultivating size group farmers is 5961. Marginal, small, and medium farmers' average net income per acre is Rs. 3663, 6007, and 7490 rupees respectively. All the pulses cultivating farmers income per acres is less than the cotton and paddy cultivating farmers' average net income per acre.

Overall observation of the agriculture production, productivity, cost of cultivation, and net income among the size groups for different crops in the Gudiwada village came to conclusion on the overall condition of agriculture. In the village, in the case of both cotton and pulses crops, marginal and small farmers are less productive than medium and large farmers. Net income per acre regarding the marginal and small farmers is less than medium and large farmers. In the case of paddy crop, marginal and small farmers are more productive than medium and large farmers. Marginal and small are getting more profits in the case of paddy than cotton and pulses. Here, it can be generalized that in the case of irrigated crops, marginal and small farmers are more productive and agriculture is profitable to them. Moreover, in the case of dry land or rain-fed crops, marginal and small farmers are less productive and suffer the loss of agriculture. Dryland cultivation gives more profits to the medium and large farmers. If cost of cultivation is estimated at C2 in the case of dryland farming, always small and marginal farmers will be in debt trap, where most of the family labor use in the cultivation of crops.

Following are the reasons behind the cultivation of cotton and pulses where the marginal and small farmers are less productive compared to the medium and large farmers

- In the village marginal and small farmers are uneducated and they do not know, exactly how much pesticides and fertilizers has to be applied for an acre of land. Sometimes over use of the pesticides terminating the crops and sometimes under use of it stopping growth of the crop.
- In the village cotton and pulses cultivated small and marginal farmers belong to SCs, STs and OBCs. This farmers land holdings are unfertile. So when farmers cultivate their land, then intensifying the cost of cultivation and diminishing the productivity per acre compare to medium and large farmers.
- The Indian agriculture is mostly depend on the rain fall, during the crop period delay in rainfall it decrease the productivity of crop. Recently fluctuations and

inadequate rainfall in Telangana state, farmers sowed the seeds two or three times in their cotton fields, it has increased the cost of cultivation.

- In the village cotton and pulses cultivated marginal and small farmers do not possess necessary inputs for the cultivation at the time of need to use in the crop area, for all inputs they will have to rely on medium and large farmers. For example, at the time of weeding these farmers have to employ the cow plough otherwise increase the grass around the plant effects on productivity, that may delay in using the inputs its increase the cost of cultivation and reduce the productivity of crop.
- Most of the marginal, small farmers are lacking the credit sources. So they are proceeding towards the fertilizer dealers for the purchasing seeds, fertilizers and pesticides then becoming victims of high rate of price payers on the seeds and fertilizers than who buying by net payment.

Following are the reasons behind in the case of cultivation of paddy, where marginal and small farmers are more productive compare to medium and large farmers:

- In the village most of the paddy cultivated marginal and small farmers hold the seeds of previously crop, then they sow in their paddy field. In the case of paddy cultivation marginal and small farmers have the less input cost because there is no need of buy of seeds, they use their own cow plough intensively rather than the tractors.
- Small and marginal farmers transplant the paddy by using their own family members along with one or two other labor, but it is not happen in the case of medium and large farmers.
- There is no much need of credit for marginal and small paddy cultivated farmers because low cost of cultivation at the time of sowing, if it need they can arrange self or borrowing from the banks.
- In the case of paddy, irrigation is main source for increase the productivity of paddy, thus marginal and small farmers can use it effectively than medium and large farmers.

5.14. Cultivation of cotton among the social groups

Here, cultivation of cotton crop can be seen among the social groups. In the previous tables, the agriculture production, cost of cultivation, etc. have been classified according to size.

There are only few studies done to observe the social group-wise classification of production. Here, caste also matters to see the differences in the production and cost of cultivation. Over the period in India, only some groups benefit by cultivating various crops because they have controlled the village fertile land, education, and easy availability of credit from the various sources.

The table 5.23 shows social group-wise division of cotton cultivating farmers in the village where 253 cotton farmers cultivate 721 acres, out of this 64 (25.3 percent) Scheduled Caste farmers cultivate 147 (20.4 percent) acres, 4 (1.6) Scheduled Tribe farmers 5 (0.7) acres, 169 (66.8 percent) Other Backward Class farmers cultivate 498 (69.1 percent) acres, and 16 (6.3 percent) other farmers cultivate 71 (9.8 percent) acres. In the case of average productivity per acre is highest in other communities with 9.21 quintals per acre and lowest among the STs with 7.20 quintals per acre. Average usage of the fertilizer per acre in the cotton cultivation is 204 kg, but the highest usage is carried out by the Others with 230 kg per acre and the lowest usage by the STs with 180 kg per acre. Here, it shows the positive relationship between the fertilizers and productivity of cotton among the social group farmers. The average cost of cultivation per acre among the social group farmers is the highest among the Others and the lowest among the OBCs, with regard to Average Net Income (ANI= ATI- ACC) income per acre is highest among the Others and lowest among the STs. Average net incomes of the SC and ST farmers is less than the total average net income of cotton per acre. If we see the selling of farm product at MSP by each social group's farmers, more number of other (15 out of 16) farmers sell their product at MSP, and less number of farmers sell their products at MSP in the case of the SC, ST, OBC farmers. Only 62 cotton farmers sell their product at MSP out of 253 cotton cultivated farmers. It clearly shows that in the village, most of the marginalized caste group farmers sell their agriculture products to trader cum buyer or mediators at less than MSP compared to Others. SC, ST, and OBC farmers who are highly dependent on traders or mediators due to lack of vehicle facilities, time-consuming at marketplaces for sale. The market places are very far, and also money given by market authorities takes more than 15 days to 30 days. In the meanwhile, the farmers need to pay wages to the laborers within 3 or 4 days and also fulfill their household needs. So most marginalized social group farmers sell their products to trader cum buyer and mediators.

Earlier in the villages, commercial crops (cotton, chilly, tobacco) were only produced by other caste farmers, and the marginalized caste farmers produced mainly pulses (Red gram, green gram, black gram, bengal gram, etc.) and corn, jowar (sorghum), millets, etc. in the dry land areas. Over the period of time, the marginalized communities also turned to the cultivation of commercial crops, where the use of the company seeds increased rather than indigenous seeds, instead of cow dung urea was used, and the use of DAP increased for land fertility and also instead of traditional plough, usage of the tractor increased.

Table 5.23 Total Production, total income and average productivity of cotton among the different Social group of the farmers.

Size of farmers	No. of farmers	No. of acres	Production of Paddy (qu.)	Ave. yield per acre (qu.)	Aver. use of fertility per acre (kg)	Total agriculture income (TI)	Total cost of cultivation (TC)	Av. Cost of cultivation per acre Rs. ACC	Av. Total income per acre Rs. ATI	Ave.Net income (ATI-ACC)	Sale of product at MSP No. of farmers
SC	64 (25.3)	147 (20.4)	1075	7.31	184	5037500	3377700	22978	34269	11291	18
ST	4 (1.6)	5 (0.7)	36	7.20	180	162000	113000	22600	32400	9800	0
OBC	169 (66.8)	498 (69.1)	3716	7.46	207	17189500	10829500	21746	34517	12771	29
Others	16 (6.3)	71 (9.8)	654	9.21	230	2987500	1733000	24408	42077	17669	15
Total	253 (100)	721 (100)	5481	7.60	204	25376500	16053200	22265	35196	12931	62

Source: field survey 2016-17.

Marginalized group farmers are facing low production and productivity due to lack of new technologies such as tractor, pesticides, and spraying pumps. Now-a-days, tractor is important input for the farmers as it plays various role in villages. Tractor can plough land and also carry agriculture products from agricultural field to farmers' home and various market places. In addition, it plays important role to carry water from various places to agriculture fields to water various crops during drought. In the villages, tractors are available only for some big farmers and upper caste farmers. Due to this, they plough their land timely and shift the agricultural products to their homes and markets without any external cost to them. Farmers who have own tractors, use their tractors for rent for remaining farming communities after fulfilling their own needs. In the villages, bullock carts are being destroyed, which are mostly available to all group of farmers. Recently, Telangana government has announced Telangana farm mechanization scheme under which

the state government will deliver tractor subsidy/ loan to the farmers for buying the tractors. Government provides 100 percent subsidy for Scheduled Caste and Scheduled Tribe farmers for the purchase of tractors along with trolley. The remaining farming community (OBC and Others) will provide 50 percent subsidy for purchasing tractors. Mostly the upper caste and large and medium farmers are getting the benefits from these schemes, and only some of the marginal farmers are getting these subsidized tractors as they are politically attached to the ruling government. In the village, only 15 members of farmers are aware about the crop insurance, which will protect the farmers' from unexpected droughts during the crop period.

5.14.1. Cultivation of paddy among the social groups

In this village, irrigation facility for paddy is availed through tanks, canals, and bore wells. Paddy is the second largest crop according to the area of cultivation. The table 5.24 informs on the caste-wise classification of paddy crop. Paddy as a crop depends on irrigation and reaps more profits for the farmers than dry land cultivating crops. 264 paddy farmers cultivate 598 acres of total village land, out of which 44 (16.7 percent) SC farmers cultivate 56 (9.4 percent) acres, 8 (3.0 percent) ST farmers cultivate 8 (1.3 percent) acres, 187 (70.8 percent) OBC farmers cultivate 413 (69.1) acres, and 25 (9.5 percent) other communities cultivate 121 (20.2 percent) acres. Yield per acre is more among the other caste farmers with 27.07 quintals and lowest yield is among the Scheduled Castes farmers. In the case of usage of fertilizers, per acre more fertilizer is used among the other caste farmer with 185.5 kg and less among the SCs 158.0 kg. More use of fertilizers giving more yield per acre is noticed among each caste farmers except the STs. Average paddy net income is Rs. 17811 per acre, but it has changed in the case of caste groups. Others farmers are reaping more net income per acres with Rs. 20157 and followed by the OBCs.

In the village, agriculture farming also favored to some social groups due to education, use of modern machinery, timely use of pesticides and fertilizers, and land quality. In India, various experts say proudly that green revolution has altered the situations of the farmers and agriculture production. Change in the agriculture production through the green revolution benefits the people of some other castes in various states due to easy adaptation of technology, political power of their communities, and their education. Green revolution

has become a disadvantage for the marginalized caste groups due to many reasons. Some of them lack of education, low income levels, and lack of information. The green revolution also became disadvantageous to certain marginalized caste groups. Green revolution effect was more on the paddy fields, most of the Others caste farmers held the land in large land holdings at that time and reaped more profits by cultivating paddy. After getting profits due to green revolution for more than 25 years on paddy fields, they turned to cities as business persons and industrialist by selling some of their lands in the villages.

Table 5.24 Total Production, total income and average productivity of paddy among the different social group of the farmers.

Size of farmers	No. of farmers	No. of acres	Production of Paddy (qu.)	Ave. yield per acre (qu.)	Aver. use of fertility per acre (kg)	Total agriculture income (TI)	Total cost of cultivation (TC)	Av. Cost of cultivation per acre Rs. ACC	Av. income per acre Rs. ATI	Ave.Net income (ATI-ATC)	Sale of product at MSP No. of farmer
SC	44 (16.7)	56 (9.4)	1357	24.23	158.0	1956600	1108750	19799	34939	15140	34
ST	8 (3.0)	8 (1.3)	182	22.75	162.5	254800	136000	17000	31850	14850	4
OBC	187 (70.8)	413 (69.1)	10414	25.22	165.9	14522800	7277500	17621	35164	17543	176
Others	25 (9.5)	121 (20.2)	3275	27.07	185.5	4585000	2146000	17736	37893	20157	24
Total	264 (100)	598 (100)	15228	25.46	169.1	21319200	10668250	17840	35651	17811	238

Source: field survey 2016-17.

5.14.2. Cultivation of pulses among the social groups

To reap more profits by cultivating the commercial crops, farmers neglect the pulses across the country due to low production and less income, and there is lack of high yielding variety seeds in the pulses. In the village under study, some of the farmers cultivate pulses (Green gram and Red gram) for their home use and sell in the market. In the village, 20 farmers cultivate 71 acres pulses of total village land. Here, the STs, due to out-migration and lack of land, and Others castes, due to less yield and low net income from pulses and wastage of time by cultivating the pulses, do not cultivate pulses. In the village, total average yield per acre cultivation of pulses is 1.93 quintals. Moreover, highest yield per acres is among the OBC farmers with less use of fertilizers and lowest yield per acre among the SCs with more use of fertilizer in the cultivation of pulses. But the average cost of cultivation is less for the SCs and net income is more per acre compared to the OBCs.

Table 5.25 Total Production, total income and average productivity of pulses among the different Social group of the farmers.

Size of farmers	No. of farmers	No. of acres	Production of Paddy (qu.)	Ave. yield per acre (qu.)	Aver. use of fertility per acre (kg)	Total agriculture income (TI)	Total cost of cultivation (TC)	Av. Cost of cultivation per acre Rs. ACC	Av. income per acre Rs. ATI	Ave.Net income (ATI-ATC)
SC	9 (45)	29 (40.8)	49	1.69	62.1	210700	90000	3103	7266	4162
OBC	11 (55)	42 (59.2)	88	2.10	61.9	378400	230000	5476	9010	3533
Total	20 (100)	71 (100)	137	1.93	62.0	589100	320000	4507	8297	3790

Source: field survey 2016-17.

5.15. Credit availability and Indebtedness among the all size group farmers.

One of the major problems concerning rural landholding households is indebtedness. This problem not only affects the individual of one generation, but it is also transferred from one generation to the next generation. One of the popular quotation about Indian farmer is, "most of the farmers are born in debt and also die in debt". The various factors affecting the farmers to be in indebtedness are lack of rainfall, less income, cost of cultivation, and family problems, but one will be interlinked with another. If a new farmer starts cultivation of 5 acres cotton, then he needs money to buy the inputs like plough and seeds, fertilizers, and pesticides for cultivation. For credit, he approaches institutional or non-institutional credit agency. After getting credit and buying all inputs, they need timely rainfall at the time of seeding and also need more production to overcome their indebtedness. They also need to get minimum profits at least equal to market wage rate, and land quality also matters for more production. If he gets agriculture income equal to debt, then he has to borrow to pay for extra interest rate and for his livelihood. Then he will start next cultivation by borrowing, and he will be in the somewhat safe zone if he gets more agriculture income equal to this year debt and interest rate. If not, he will be again in debt trap. From the table 5.26 below, it can be noticed that, in the village, there are 404 farmers for credit needs, out of which 91 farmers are dependent on the institutional credit, 155 farmers are dependent on non-institutional credit, 118 farmers depend on both institutional and non-institutional credit, and only 40 farmers are not dependent on any credit source.

Total indebted farmers in the village are 364, out of which 190 farmers are marginal, 122 farmers are small, 35 farmers are medium, and 17 farmers are large farmers. There is the dependency of farmers on various credit sources according to size. Total marginal farmers are 210 out of which 37 depend on institutional, 102 depend on non-institutional, 51 depend on both sources, and 20 do not depend on any source, and this situation is the same in the case of small, medium, and large farmers. Dependency on non-institutional credit is highest in the marginal farmers followed by small of their total farmers. In the village, average annual debt for each farmer is Rs. 70464. According to size, average annual debt is increasing with the increase in the size of holdings.

Table 5.26 Sources of credit to the farmers for cultivation.

Size of farmers	Only Institutional credit	Only Non-institutional credit	Both institutional /non – institutional credit	Total Indebted farmers	No debt farmers	Total farmers (5+6)	Total debt Rs.	Average Annual debt of farmers (8/5)
Colum 1	2	3	4	5	6	7	8	9
Marginal	37	102	51	190	20	210	9624000	50652
Small	31	38	53	122	10	132	9650000	79098
Medium	11	13	11	35	5	40	4145000	118428
Large	12	2	3	17	5	22	2230000	131176
Total	91 (25)	155 (42.58)	118 (32.42)	364 (100)	40	404	25649000	70464

Source: field survey data 2016-17. Numbers in parenthesis indicates percentage.

5.16. Credit availability and indebtedness among the social group farmers

Availability of credit is the important factor for the farmers to pay wage and input cost at the time of sowing, transplanting, weeding, and spraying pesticides. In the case of farmers to get the credit, they approach various agencies such as institutional credit agencies, non-institutional credit agencies, and sometimes both agencies. It depends on farmer's access to credit. The table 5.27 below shows the dependence of each social group farmers for credit on various agencies. Among the SCs, 91 farmers exist, out of which 78 farmers are indebted and 13 farmers are not indebted. Out of the 78 SC indebted farmers, 25 (32.1 percent) depend on institutional credit, 35 (44.9 percent) farmers depend on non-institutional credit, and 18 (23.1 percent) farmers depend on both institutional and non-

institutional credits for their agriculture needs. And also among the STs, OBCs, and Others farmers, there is dependency on various agencies. Farmers depending on institutional credit is high in the case of other communities followed by SCs of their total indebted farmers.

Farmers depending on non-institutional credit are highest in the case of the STs followed by the SCs and OBCs of their total indebted farmers. Farmers depending on both the credit agencies at a time are highest in the case of OBCs followed by the SCs of their total indebted farmers. But overall dependency of the farmers in the village is highest on the non-institutional credit followed by the both (institutional and non-institutional credit at a time). Average annual debt among the social group indebted farmers in the village is Rs. 70492. Among the SCs, the indebted farmers' average annual debt is Rs. 58782; among the STs, Rs. 17300; among the OBCs, Rs. 71308; and among the Others, it is Rs. 124348. Average annual debt is the highest in the case of other communities' indebted farmers and the lowest in the case of the STs. But overall, the highest indebted farmers in the village are among the OBCs, which is 253 out of 364 indebted farmers followed by the SC indebted farmers.

Table 5.27 Credit and indebtedness among the farmers in each social group.

Size of farmers	Only Institutional credit	Only Non-institutional credit	Both institutional /non - institutional credit	Total Indebted farmers	No debt farmers	Total farmers (5+6)	Total debt Rs.	Average Annual debt of farmer (8/5)
Colum 1	2	3	4	5	6	7	8	9
SC	25 (32.1)	35 (44.9)	18 (23.1)	78 (100)	13	91	4585000	58782
ST	3 (30.0)	5 (50.0)	2 (20.0)	10 (100)	2	12	173000	17300
OBC	45 (17.8)	112 (44.3)	96 (37.9)	253 (100)	20	273	18041000	71308
Others	18 (78.3)	3 (13.0)	2 (8.7)	23 (100)	5	28	2860000	124348
Total	91 (25.0)	155 (42.6)	118 (32.4)	364 (100)	40	404	25659000	70492

Source: field survey 2016-17.

5.17. Wage Discrimination

In non-agriculture work in this village, married women participate in various works along with their husbands. One of the important works is Mason (building construction work). For this work, women work very hard equal to men in mixing concrete and also by lifting

the bricks. But women are paid only Rs.250 compared to men who are paid Rs.350 per day. In agriculture, women work as same as men in the threshing. Women are paid only Rs.250 and men are paid Rs. 350 per day. However, women get equal wage along with men while seeding, weeding, and picking of cotton.

5.28 Wage rates for different Agriculture work categories in Gudiwada village.

Type of work	Wage for women Rs. (in rupees)	Wage for men Rs. (in rupees)
Seeding	250	250
Picking	250	250
Transplanting	300	350
Ploughing	0	400
Reaping	300	350
Threshing	250	350
Land Related work	300	400
Spraying of Pesticides	300	350
Weeding	250	250
MGNREGA	150 -180	150 -180

Source: Field Survey, 2017.

In the case of MGNREGA, female labors are getting more or less equal wage along with male labors. Usually, women are paid equal wage along with men, wherever they do same work, but in India historically, the wages favor towards men in all type of works. Within the households, gender equality in terms of decision making is observed among the SC, ST, and some OBC households compared to other communities.

5.17.1. Oaxaca Decomposition

This method says that agriculture wage (W) depended upon education (ED), assuming that relationship between these characteristics is linear.

Subscripts “m” means male, “f” means female

The wage equation for male and female are then

$$W_m = a_m + b_m ED_m$$

$$W_f = a_f + b_f ED_f$$

Where:

ED_m Measures years of education

b_m The amount by which an extra year of education raises the male wages

(Subscript f: versions for female).

Regression analysis is used to obtain estimates of the coefficients a, b for men and female separately. For example, choosing “b" involves choosing the line that best fits sample data on wage rates, education. Estimated regression goes through the sample means. So if W and ED are the sample averages (Oaxaca, R. L., & Ransom, M. R. 1999)

Sample averages

Male		**Female**	
Wage	327.07	Wage	266.50
Education (in years)	3.75	(Education in years)	2.82

Regression coefficients

$$W_m = 317.68 + 2.50\ ED_m$$

$$W_f = 257.23 + \ 3.28ED_f$$

Wage gap is W_m - W_f

Decomposition:

W_m - W_f = $b_m\ (ED_m - \ ED_f)$ + $(a_m$ - $a_f\ )$ + $(b_m - \ b_f)\ ED_f$

(327.07- 266.50) = 2.50 (3.75 - 2.82) + (317.68 – 257.23) + (2.50 - 3.28)2.82

60.57 = 2.325 + 60.45 – 2.199

60.57 = 2.325 + 58.2504

60.57 = 60.57

Total gap = explained + unexplained/ Residual

60.57 = 2.325 (3.83 %) + 58.2504 (96.1703 %)

This means that (2.325/60.57) 3.83 percent of the gender gap is explained by differences in education rate between men and women. Thus (58.2504/60.57) 96.17 percent of the gender gap is unexplained. It could claim that part of the gap is due to discrimination.

5.18. Consumption expenditure pattern among all social groups

More expenditure of the households on various food and non-food items in day to day life reveals the status of the social groups in the society. Generally, people after being satisfied with the consumption of basic needs turn into luxuries over the period, and it is decided by the level of income they make. Less expenditure on food items and more expenditure on non-food items indicate that people are in good status in the society because after fulfilling the expenditure on food, they automatically spend more on non-food items. From the table 5.29 below, it can be noticed that among the SCs, expenditure on food item is the highest with 57.39 percent and expenditure on non-food item is lowest with 42.61 percent compared to the rest of the social group's expenditure on food and non-food expenditure of their total average expenditure. In the other communities, expenditure on food is the lowest with 45.2 percent and expenditure on non-food items is more with 54.58 compared to the rest of the social groups' expenditure on food and non-food items of their total average expenditures. Average annual income for all social group households in the village is Rs. 104186. Average annual income is the lowest among the ST households with Rs. 87869 compared to the rest of the social group households, while the highest average income is in the other communities' households with Rs. 200238.

Table 5.29 Average consumption expenditure, income and debt pattern among the households of each social group (in rupees per year).

Social groups	Expenditure on food	Expenditure on non-food	Total average expenditure	Average debt	Average annual income
SC	33864 (57.39)	25139 (42.61)	59003 (100)	57191	96584
ST	28674 (54.95)	23512 (45.05)	52186 (100)	40547	87869
OBC	32606 (54.23)	27517 (45.77)	60123 (100)	59251	101499
Others	39738 (45.42)	47761 (54.58)	87499 (100)	60476	200238
Total average	33137 (54.56)	27595 (45.44)	60732 (100)	57704	104186

Source: field survey 2016-17.

5.19. Poverty and inequality among the social groups

Ability and strength of people at workplace will be efficient when they take sufficient food for themselves. Availability of food for people depends on the income and wage. People earn sufficient income and wage when employment is available. In 2010-11, poverty line decided by the Rangarajan committee based on the Monthly Per Capita Consumption Expenditure (MPCE) by including the expenditure on food items along with health, education expenditure, etc. MPCE differs among the states in the country. At all India level, MPCE per person is Rs. 972 at rural area and Rs. 1407 at urban area. Furthermore in combined Andhra Pradesh, MPCE per person is Rs. 1031.74 at the rural area and Rs.1370.84 in an urban area (GOI, 2013). The table 5.30 below shows the percentage of persons below poverty line among the social groups, 44.8 percent people among the SCs are living below poverty line, and also 38.8 percent people among the STs, 22.8 percent people among the OBCs, and 10.5 percent people of their total population. In the case of the SCs, more percentage of people live below poverty line followed by the STs. Overall, in the village under study, 1031 (30.2 percent) out of 3418 people live below the poverty line

Table 5.30 Percentage of persons below poverty line.

Social groups	Total population	Number of persons Below poverty line	% of persons below poverty line
SC	1121	502	44.8
ST	166	63	38.0
OBC	1978	450	22.8
OC	153	16	10.5
Total	3418	1031	30.2

Source: Field Survey, 2017.

There is a cyclical process that decides the people's prosperity. The table 5.31 below reflects the vulnerability and deprivation among the social groups in Gudiwada village according to calories. Among the Scheduled Caste and Scheduled Tribe categories, each person takes fewer calories of food per day than minimum requirement calories as per ICMR norms. Especially Scheduled Caste persons in the village take fewer calories than rest of the social groups. In the case of intake of fat and protein per person per day, it is more in the other communities, which is more than the ICMR requirements.

Table 5.31 Intake of calories per day per person among the social groups.

Food intake by various social groups (per day per person)	Calories (kilo)	Proteins (gm)	Fat (gm)
SC	2115.5	45.6	24.5
ST	2147	46.7	23.5
OBC	2220	48.5	26.9
OTHERS	2226.3	50.6	29.56

Source: Field Survey, 2017, Note: As per the ICMR norms, calories requirement in rural area is 2154.91 calories, protein requirement is 48.17 grams, and fat requirement is 27.61 grams.

5.20. Summary:

In this chapter mainly discussed about the micro level issues of field study of the village. Distribution of the land among the size groups is much skewed over the years in the village. In the village in the 1980s small proportion of people held the large proportion of the village land, but when it comes to the 2016-17 it has decreased. Distribution of the land among the social groups also very skewed, over the period land have been transforming from other castes to OBCs and SCs. Size wise distribution of land in each social groups shows that, inequality within the other castes shows more over the years compared to rest of the social groups. Distribution of land between gender groups shows gender biasedness towards the men, only 28 acres land registered on the women out of the 1830 acres.

Decomposition of asset inequality tells that, to the total asset inequality contribution of within the social groups inequality is more and contribution of between social groups' inequalities is less.

In the village in the case of cotton and pulses crop cultivation marginal and small farmers are less productive compared to the medium and large farmers. In the case of paddy crop cultivation marginal and small farmers are more productive compared to medium and large farmers. In the case of dry land cultivation crops like cotton, pulses marginal and small farmers are not getting more profits compared to rest of the size group farmers.

In the case of cultivation of crops among the social groups other caste farmers are more productive and profitable compared to rest of the social groups' farmers. Most of the others caste farmers are depended on the institutional credit of their total farmers. Increasing the

debt of the farmers by increasing the size. Except MGNREGA, in all agriculture work places Wage paid for women is unequal compared to men in the village. Oaxaca decomposition reveals that 3.83 percent shows wage paid only according to education, 96.17 percentage tells that due to the discrimination. In the village most of the SCs persons are in the below poverty line and followed by the STs compared to OBCs and Others.

Chapter VI

Summary and Conclusion

6.1. Introduction

Since independence, Indian agriculture has gone through various dynamic changes (such as land reforms and green revolution) intended to access the land, increase the agriculture income, and reduce the existing inequality in the society. In the country, a large section of the rural people depends on agriculture (more than 58 percent) for livelihood. The share of agriculture to GDP has been decreasing over the years. During the colonial period, Britishers had exported raw materials from India and imported manufactured goods which were prepared in their country. If Britishers had established industries in India instead of import goods, more people would not have depended on agriculture at the time of independence. Along with these, Indian society fragmented with caste discrimination among the social groups and also an unequal distribution of wealth and land among the people. After independence, the Indian government had taken land reforms to reduce poverty and inequality in the society and improve agricultural production through equal distribution of land among the people across the country.

In this manner Governments had failed accomplish their objectives, because Political leaders and the bureaucrats belong to the landlords' class and higher castes at the time of execution of land reforms various states in India, this is not much interested. Most of the landlords they registered their land in the names of their family numbers to escape from the land ceiling. Some states like Kerala and West Bengal properly implemented the land reforms in India. Although implementation of land reforms in India, still existed disparities in the land holdings. In India, the share of land owned by different social groups was 9.23 percent for SC, 13.06 percent for ST, 45.68 percent for OBC and 32.03 percent for others. The per-household land area owned by them was 0.272 ha, 0.650 ha, 0.630 ha and 0.816 ha respectively (NSSO, 70^{th} round).

6.2. Objectives of the study:

1. To study the changing land holding situation in India.
2. To examine the inequality in land distribution among the various social groups and size groups.
3. To study the changing context of access to land and its economic and social impact on households at micro level – A case of Gudiwada village.
4. To study the role of Telangana state in land redistribution among the scheduled caste households by considering the existing studies and field data.

6.3. Data and Methodology analysis

The study mainly depends on both secondary and primary data. To analyze the macro level issues like land holdings, credit, production, area, yield, indebtedness, etc. at all India level, state level, and district level, data has been taken from various NSSO reports, RBI database, agriculture census, socioeconomic reports of center and state government, and census. To observe the objectives of the study, data has been collected through field study of Gudiwada village in Kethapally Mandal of Nalgonda district. Data has been collected from the land records of the village Mandal revenue office for the time period 1980-81 to 2010-11. To analyze the village data, land-owned households have been divided size-wise and caste-wise. Data have been collected from village households through the scheduled method. Interviewing the elder people and old age people in the village helped to understand the historical background of the village. To analyze the data, various methods have been used in which simple arithmetic has used to make the data more understandable. Gini Coefficient has used to measure the inequality of any distribution and Lorenz Curve reveals the graphical representation of inequality. Herfindahl index has used to measure the changes in the cropping pattern. Compound Annual Growth Rate has used to measure the growth rate of production, area, and yield. Decomposition method has used to measure the asset inequality among the social groups. Disparity ratio has used to measure the achievement of land by any social groups over the period. Percentage change has used to measure the changes in the various social group's landholding households and area owned

by them over the period. Cobb-Douglas production function was used to measure the impact of various independent variables on the dependent variable ex. various factors impact on the cotton and paddy revenue generation. Oaxaca decomposition method was used to estimate the level of discrimination in the agricultural wage.

6.4. Major findings of the study

In the third chapter examined that at all India level Inequality still exists in the distribution of land among the class groups and social groups, even though there is the implementation of land reforms across the country. At all India level, 7.5 percent of semi-medium, medium, and large landholding households owned approximately 47.35 percent of the land. Social group-wise distribution of land at all India level reveals that except SCs percent of the area owned is more than the percent of landholding households among the remaining communities like STs, OBCs, and Others, but across the country within the caste groups, percent of landless households are more among the SCs.

In the fourth chapter, after knowing the fact that inequality exists more among the size groups in the united Andhra Pradesh. Then, concentrated on the landholding pattern among the Telangana districts in which recent times having the more farmer's suicides. Inequalities among the social groups showed very high in the Nalgonda district after observing the land holding pattern in each district in Telangana. And also Nalgonda district having the second highest Scheduled Caste population in Telangana.

After Telangana became a state, Telangana government implemented the LPLD Scheme for landless Schedule Caste women. Under this scheme, 3 acres land has distributed to scheduled caste landless women. Under the scheme still now, 12846.05 acres of land distributed to 4981 beneficiaries. The distributed lands in Gangapur (Gundala mandal) and Pallepahad (Gurampode mandal) villages were a part of the private land and government land. The private land distributed to the beneficiaries was cultivable, but it was dissimilar to the government land distributed as those were not in use for agriculture for past years. To transform the non-cultivable land into cultivable land, they invested an amount ranging from Rs. 25000 to 35000 (Thilothu Rao 2017). In the Kistapur village (Munugode mandal) government distributed private land for all beneficiaries, which is cultivatable. According

to field survey of beneficiary's households, some of the beneficiaries are happy, where they got good quality land, beneficiaries are not happy where they are not getting good quality land.

The compound annual growth rate of agriculture crops in production in the united Andhra Pradesh having the positive growth rate before the green revolution period. During the green revolution period all crops having the declined positive growth rate in the production and area. After the 1975-76 cotton having the more positive growth in the production and area, because of the HYV seeds.

In the case of the Nalgonda district paddy registered positive growth in production and area during the green revolution because of the Nagarjuna Sagar left canal. At the same period, total cereals registered positive growth rate in the production and area. After the 1975 cotton registered high positive growth rate in production and area like United Andhra Pradesh

In the fifth chapter which consists of a field study of the village changes in landholding patterns were observed from 1980-81 to 2016-17. Over the years, in the village, the land had been transforming from the large landholding households to marginal, small, and medium landholding households due to the breaking of the joint family system and also increase of the employment opportunities in the urban sectors. But in the village still, inequality existed among the size groups. The inequality can be observed with the Gini coefficient values i.e. 0.55 in 1980-81, 0.48 in 1990-91, 0.45 in 2000-01, 0.42 in 2010-11, and 0.38 in 2016-17.

Distribution of land among the social groups over the period reveals that land had been shifting from Other caste group to SCs and OBCs. Even though land shifted towards the SCs and OBCs, still inequality existed in the distribution of land among the social group households. Historically OBC caste groups used to work under the other caste landlords fields as sharecropper, tenant farmers and bondage labor, whenever landlords ready to sell their land these caste groups had the opportunity to buy the land from the landlords. In addition to this, in some cases landlords used to inform and also interested to sell their land only to OBCs. Other caste landlords not interested to sell their lands to SCs and STs, because of this less portion of land have been transformed to the SCs. By observing the

Gini coefficient, it can know the inequalities in the distribution of land, in the 1980-81 Gini coefficient value was 0.25. It means the skewed distribution of land among the social groups. Moreover, Gini coefficient values were 0.18 in 1990-91, 0.15 in 2000-01, 0.13 in 2010-11, and 0.11 in 2016-17. That means the distribution of land among the social groups over the period was unequal, but it had been declining over the period.

According to distribution of land among the size groups in each social groups, it reveals that by 2016-17, the highest inequality is among the Others followed by the OBCs and the lowest inequality was among the STs followed by the SCs, whereas by 1980-81, the highest inequality was among the Others followed by the SCs and the lowest inequality was among the STs followed by the OBCs.

The average size of landholding among the size groups had been decreasing from 6.96 acres in 1980-81 to 3.48 acres in 2016-17, land has fragmented among the families due to the higher growth rate of the population.

The average size of holdings of each social group had been declining over the period. By 2016-17, the average size of holdings of SCs and STs were 2.62 and 3.0 acres which were less than the village average holding; while the OBCs and other communities' average holdings were 3.61 and 6.44 acres which were more than the village average holdings.

Distribution of the land among the gender reveals, In the village, out of the 1830 acres of the village land, only 28 acres of land is in the name of female, in which SC women held 8 acres, ST women held 3 acres, OBC women held 12 acres, and other communities women held 5 acres in 2016-17. Here it reveals, gender discrimination in the ownership of land.

Decomposition of asset inequality in the village under study shows that high inequality in the ownership of asset was result of inequality within the social groups, but not as a result of inequality between social groups. In the village within the group, inequality contribution was 91 percent and between-group inequalities were 9 percent to the total asset inequality.

Cobb-Douglas production function for paddy reveals that, the impact of the various independent variables on the dependent variable. The adjusted coefficient of multiple determinations is estimated at 0.844 for the cotton. The value divulges that 84 percent of cotton revenue output is explained by the explanatory variables used in the production

function i.e. land rent, fertilizers, labor costs, and other input costs. The sum of production elasticities is less than the unity that indicates decreasing returns to scale for the cotton crop. In the village under study, the land rent, fertilizer, and other input costs play a vital role in the cotton revenue generation. In terms of the other coefficient such as labor cost is positive but statistically insignificant.

Cobb-Douglas production function for cotton reveals that, the impact of the various independent variables on the dependent variable. The adjusted coefficient of multiple determinations was estimated at 0.720 for paddy. The value reveals that 72 percent of paddy revenue output is explained by the explanatory variables used in the production function i.e. land rent, fertilizers, labor cost, irrigation and other input costs. The sum of production elasticities was less than unity that indicates decreasing returns to scale. In Gudiwada village, the land rent and other input costs played a vital role in generating the revenue for the paddy crop. In terms of other coefficients such as irrigation and labor, costs were positive but statistically insignificant. On other hand, fertilizer cost had a negative impact on the paddy crop revenue generation and it is also statistically insignificant

If observed average productivity of cotton by size-wise in the village, the average yield of the marginal farmers are 7.20 quintals per acre and small farmers is7.22 quintals per acres, while medium farmers are 8.59 and large farmers is 8.87 quintals per acre and average yield for all farmers is 7.60 quintals per acres. This reveals that the medium and large farmers are more productive than marginal and small farmers for the dry land farming like the cotton crop. No inverse relationship between size and yield.

In the case of productivity of paddy in the village, marginal and small farmers are producing 25.42 and 26.0 quintals per acre, while medium and large farmers are generating 24.59 and 24.83 quintals yield per acre. Here, it indicates that marginal and small farmers are more productive than medium and large farmers in the field of wetland farming like paddy. There existed an inverse relationship between size and yield.

Overall, the yield of the pulses among the size groups was 1.9 per acre. In the case of pulses, marginal and small farmers were less productive than a medium farmer, here no inverse relationship between the size and yield.

In the village, agriculture farming also favored some social groups. By observing the social group-wise cultivation of cotton and paddy crop, all inputs (fertilizers, pesticides, credit, machinery, etc.) are available to other castes farmers, but not for marginalized caste farmers. Because of these reasons for the cultivation of cotton, paddy, others caste farmers are more productive than the remaining caste group farmers. So there had been an increase in the cost of cultivation and lowered the income of the marginalized caste groups in the cultivation of cotton.

In the village, the average annual debt of farmers was increasing with increase in the size of holding. 25 percent of farmers depended on the institutional credit, and 42.58 percent of farmers depended on non-institutional credit, whereas 32.42 percent farmers depended on both institutional and non-institutional credit. Dependency on non-institutional credit is highest in the marginal farmers followed by small farmers of their total farmers. Still, farmers are depending on the non-institutional credit even though governments are trying to provide institutional credit.

Dependence of the social group farmers on institutional credit was highest in the other castes of their total indebted farmers. Farmers depended on non-institutional credit was highest in the case of STs followed by the SCs and OBCs, and farmers depended on both credit agencies at a time was highest in the case of OBCs followed by the SCs of their total indebted farmers. This implies that marginalized groups still depended on the non-institutional credit compared to other communities. This implies that institutions were favoring the upper caste. The non-institutional credit also forced the marginalized farmers to commit suicides.

We have calculated the Oaxaca decomposition method, by assuming the agriculture wage depending on the education. Overall results explain that 3.83 percent of the gender gap is explained by differences in education rate between men and women. Thus 96.178 percent of the gender gap is unexplained. It could claim that part of the gap is due to discrimination. Women in the village have been discriminated in the wage rate and also in the ownership of land. Rural women are getting wage equal to men in the case of MGNREGA only.

In the village under study, it has been found that in Others castes average annual income is more than double of average annual income of the SCs, STs, and OBCs. Average

consumption expenditure is very high among the Others and OBCs, followed by SCs and STs. In the case of average annual debt, there is a small difference among the social groups.

In the village reveals that the persons below poverty line among the social groups, the SCs is highest percentage of persons below the poverty line and Others is the lowest percentage of persons below poverty.

6.5. Policy suggestion:

1. Redistribution of land to landless poor, distributed land should be fertile otherwise it will increases the cost of cultivation and push the farmers into indebtedness.

2. Provide skill training from the rural institutions.

3. Rural institutions has to play important role and dismantle the information regarding to crop insurance

4. There is a need to provide proper institutional credit to the marginalized farmers to utilize the efficient agriculture technology that can increase the productivity.

5. There is a need to encourage the farmers for the farming of vegetables, floriculture, dairy etc. instead of commercial crops. There is a huge demand from consumers for dairy products and vegetables.

6. There is need to create awareness among the farmers on the changing cultivation of the same crop over the years.

7. There is a need to construct one warehouse at every Mandal for storing agriculture products until the farmers get a good price for the output in the market.

8. There is a need to provide subsidized inputs such as tractors and pesticide spraying pumps for marginalized farmers.

Appendix:

Appendix.3.A Minimum support price for principle crops in India (Rupees per quintal).

Year	Paddy Common	Maize	Cotton	Jowar	Groundnut(in shell)	Sugarcane	Sunflower Seed
1999-00	490	415	1775	490	1155	56	1155
2000-01	510	445	1825	445	1220	60	1170
2001-02	530	485	1875	480	1340	62	1185
2002-03	530	490	1875	490	1355	70	1195
2003-04	550	505	1925	505	1400	73	1250
2004-05	560	525	1960	515	1500	75	1340
2005-06	570	540	1980	525	1520	80	1500
2006-07	580	540	1990	540	1520	80	1500
2007-08	745	620	2030	600	1550	81	1510
2008-09	900	840	3000	840	2100	81	2215
2009-10	1050	840	3000	840	2100	130	2215
2010-11	1000	880	3000	880	2300	139	2350
2011-12	1080	980	3300	980	2700	145	2800
2012-13	1250	1175	3900	1500	3700	170	3700
2013-14	1310	1310	4000	1500	4000	210	3700
2014-15	1360	1310	4050	1530	4000	220	3750
2015-16	1410	1325	4100	1570	4030	230	3800

Source: RBI database.

Appendix.4.A percentage distribution of operational holdings and operated area among the size groups in each district in Telangana

	2000-01 operational holdings (operated area)						2005-06 01 operational holdings (operated area)						2010-1101 operational holdings (operated area)					
Size groups Districts	Marginal	small	semi-medium	medium	large	all	marginal	small	semi-medium	medium	large	All	marginal	small	semi-medium	medium	large	All
Adilabad	47.4 (13.4)	25.0 (22.4)	19.8 (32.5)	7.2 (25.1)	0.7 (6.5)	100 (100)	47.51 (14.2)	26.05 (24.2)	19.47 (32.7)	6.39 (23.1)	0.59 (5.8)	100 (100)	49.8 (16.9)	27.7 (28.3)	17.5 (31.9)	4.6 (18.1)	0.4 (4.8)	100 (100)
Nizamabad	66.4 (29.2)	22.5 (30.9)	8.8 (22.8)	2.2 (11.8)	0.2 (5.3)	100 (100)	66.6 (31.8)	23.3 (33.6)	8.2 (22.3)	1.8 (10.1)	0.1 (2.2)	100 (100)	67.5 (33.9)	23.8 (36.1)	7.3 (20.6)	1.3 (7.9)	0.1 (1.5)	100 (100)
Karimnagar	65.7 (27.0)	21.2 (28.3)	9.8 (25.0)	2.9 (15.5)	0.3 (4.1)	100 (100)	66.19 (27.8)	21.25 (28.6)	9.56 (24.6)	2.72 (14.6)	0.28 (4.3)	100 (100)	67.5 (30.9)	21.9 (31.8)	8.4 (22.9)	2.1 (11.8)	0.2 (2.6)	100 (100)
Medak	62.8 (23.)	22.7 (26.7)	10.2 (23.0)	3.7 (17.7)	0.6 (9..6)	100 (100)	63.9 (24.9)	22.4 (27.9)	9.8 (23.3)	3.4 (17.1)	0.5 (6.8)	100 (100)	67.9 (29.9)	21.7 (31.3)	7.8 (21.2)	2.3 (13.1)	0.3 (4.4)	100 (100
Ranga Reddy	51.0 (16.6)	26.7 (24.7)	15.6 (27.3)	5.8 (21.8)	0.9 (9.6)	100 (100)	51.8 (17.4)	26.6 (25.3)	15.3 (27.3)	5.5 (21.1)	0.7 (8.9)	100 (100)	58.3 (23.5)	25.7 (29.4)	12.1 (26.1)	3.5 (15.8)	0.4 (5.1)	100 (100)
Mahabubnagar	48.0 (14.5)	26.4 (22.5)	17.6 (28.1)	6.9 (23.9)	1.1 (10.9	100 (100)	50.27 (16)	26.31 (24.2)	16.49 (28.5)	6.03 (22.5)	0.91 (8.8)	100 (100)	57.9 (22.0)	25.4 (29.5)	12.6 (27.2)	3.7 (16.8)	0.4 (4.5)	100 (100)
Nalgonda	53.4 (16.8)	24.8 (23.8)	14.8 (27.1)	6.1 (23.8)	0.8 (8.5)	100 (100)	55 (18.1)	24.5 (24.7)	14.2 (27.2)	5.6 (22.6)	0.7 (7.3)	100 (100)	58.3 (23.1)	25.3 (29.9)	12.1 (26.9)	3.5 (16.5)	0.3 (3.6)	100 (100)
Warangal	63.40 (21.7)	20.66 (23.2)	10.92 (23.5)	4.25 (19.5)	0.77 (12.1	100 (100)	63.10 (22.1)	20.95 (23.7)	10.69 (23.3)	4.52 (20.7)	0.74 (10.2	100 (100)	67.10 (28.6)	21.40 (29.7)	8.66 (22.8)	2.57 (14.2)	0.28 (4.7)	100 (100)
Khammam	55.2 (18.2)	23.0 (22.7)	15.2 (28.4)	5.9 (23.2)	0.7 (7.5)	100 (100)	57.2 (19.9)	22.7 (23.7)	14.2 (28.0)	5.5 (22.6)	0.5 (5.8)	100 (100)	62.2 (25.6)	22.6 (27.6)	11.6 (26.7)	3.3 (15.8)	0.3 (4.3)	1000 (100)

Source: various agriculture census data of Directorate of economics and statistics, Telangana government.

Appendix.4.B percentage distribution of operational holdings and operated area among the social groups in each district in Telangana

	2000-01 operational holdings* (operated area)**				2005-06 operational holdings* (operated area)**				2010-11 operational holdings* (operated area)**			
	SC	ST	Others	All	SC	ST	Others	All	SC	ST	Others	All
Adilabad	15.9* (12.6)**	20.6 (24.7)	63.5 (62.7)	100 (100)	16.2 (12.9)	21.0 (24.9)	62.9 (62.1)	100 (100)	15.4 (12.4)	21.4 (25.7)	63.1 (61.8)	100 (100)
Nizamabad	15.13 (10.8)	7.53 (7.0)	77.34 (82.0)	100 (100)	14.4 (10.3)	8.6 (8.2)	77.0 (81.5)	100 (100)	13.2 (9.8)	8.2 (7.7)	78.5 (82.4)	100 (100)
Karimnagar	16.1 (9.9)	2.9 (2.6)	81.0 (87.5)	100 (100)	16.4 (10.1)	3.4 (2.9)	80.3 (87.0)	100 (100)	14.6 (9.7)	2.9 (2.6)	82.5 (87.7)	100 (100)
Medak	17.3 (11.3)	4.9 (5.0)	77.8 (83.7)	100 (100)	16.9 (11.7)	5.0 (4.9)	78.1 (83.4)	100 (100)	15.7 (11.3)	5.1 (5.5)	79.1 (83.2)	100 (100)
Ranga Reddy	17.3 (11.8)	7.9 (7.0)	74.8 (81.0)	100 (100)	17.4 (12.1)	8.1 (7.2)	74.5 (80.8)	100 (100)	15.5 (11.6)	8.6 (7.7)	75.9 (80.7)	100 (100)
Mahabubnagar	14.6 (9.7)	8.5 (7.3)	76.8 (83.0)	100 (100)	15.0 (10.2)	8.6 (7.5)	76.4 (82.3)	100 (100)	13.2 (9.8)	9.3 (8.1)	77.6 (82.1)	100 (100)
Nalgonda	12.9 (7.7)	10.3 (8.4)	76.8 (84.0)	100 (100)	13.0 (7.4)	10.8 (8.8)	76.3 (83.8)	100 (100)	11.5 (7.0)	11.2 (9.3)	77.3 (83.7)	100 (100)
Warangal	12.5 (8.3)	14.8 (13.7)	72.7 (78.0)	100 (100)	12.3 (7.2)	15.4 (14.1)	72.3 (78.7)	100 (100)	12.4 (8.7)	16.0 (15.4)	71.6 (75.9)	100 (100)
Khammam	10.4 (6.1)	32.0 (32.1)	57.6 (61.8)	100 (100)	10.6 (5.9)	31.7 (33.0)	57.7 (61.1)	100 (100)	9.5 (5.6)	33.4 (33.7)	54.1 (60.7)	100 (100)

Source: various agriculture census data of Directorate of economics and statistics, Telangana government.

References:

Agarwal, B. (1994). A field of one's own: Gender and land rights in South Asia (Vol. 58). Cambridge University Press. Contestation.

Ahmad, M. F., & Haseen, S. (2012). The Performance of India's Food Grains Production. A Pre and Post Reform Assessment. *International Journal of Scientific and Research Publications*, *2*(3), 1-6.

Amartya Kumar Sen. (1962). An Aspect of Indian Agriculture, the economic weekly annual number February.

Anand, S. (1983). Inequality and Poverty in Malaysia: Measurement and Decomposition, Oxford University Press, New York.

Appu, P. S. (1975). Tenancy reform in India. Economic and Political Weekly, 1339-1375.

Balagopal, K. (2007). Land Unrest in Andhra Pradesh-I: Ceiling Surpluses and Public Lands. Economic and Political Weekly, Vol. 42, No. 38, pp. 3829-3833.

Bandyopadhyay, D. (2003). Land Reforms and Agriculture: The West Bengal Experience. Economic and Political Weekly, Vol. 38, No. 9, pp. 879-884.

Banerjee, A., & Iyer, L. (2005). History, institutions, and economic performance: The legacy of colonial land tenure systems in India. American economic review, 95(4), 1190-1213.

Besley, T., and Burgess, R. (2000). Land Reform, Poverty Reduction, and Growth: Evidence from India. Quarterly Journal of Economics, 115(2), 389-430.

Beteille, Andre. (1974). Inequality and Social Change. Oxford University Press, Delhi, Studies in Agrarian Social Structure, Oxford University Press, Delhi.

Bharat Dogra. (1996). Land Reforms to Fight Hunger. Economic and Political Weekly, Vol. 31, No. 40, p. 2725.

Chatterjee, S., & Rudra, A. (1989). Relations of Production in Pre-Colonial India. Economic and Political Weekly, 1171-1175.

Dantwala, M. L. (1952). Agricultural Credit in India-The Missing Link. Pacific Affairs, Vol. 25, No. 4 (Dec., 1952), pp. 349-359.

Dantwala, M. L. (1976). Agricultural policy in India since independence. *Indian Journal of Agricultural Economics*, *31*(4), 31-53.

Das, S. 2000. A critical evaluation of land reforms in India (1950 -1995). In B.K. Sinha and Pushpendra, eds. Land reforms in India: an unfinished agenda. New Delhi, Sage Publications.

Deshpande, R. S. (2003). Current land policy issues in India. Land Reform, Land Settlement and Cooperative, 155-174.

Deshpande R.S (2007). Emerging Issues in Land Policy. Asian Development Bank, India Resident Mission (INRM).

Deshpande R.S. et.al. (2010). Agrarian crisis and farmer's suicides in India. Land reforms in India volume 12, chapter -1, page 1-42.

Desai, Bhupat .M and N V Namboodiri. (1997). Determinants of Total Factor Productivity in Indian Agriculture. Economic and Political Weekly, Vol. XXXII, No 52, December 27, Mumbai.

Dharmalingam, A. (1991). Agrarian Structure and Population in India: A Selective Survey. Economic and Political Weekly, Vol. 26, No. 26 (June 29, 1991), pp. A46-A62.

Dilip S. Swamy. (1980). Land and Credit Reforms in India, Part Two. Social Scientist, Vol. 8, No. 12 (Jul., 1980), pp. 46-64.

Draft Five Year Plan 1978-83, Planning Commission, Government of India, 1978, Section 1.70, p 12.

Economic and Political Weekly (1984). Andhra Pradesh: Operational Holdings, 1980-81. Economic and Political Weekly, Vol. 19, No. 26, p. A66.

Edison Dayal. (1984). Agricultural Productivity in India: A Spatial Analysis. Annals of the Association of American Geographers, Vol. 74, No. 1, pp.98-123.

Garikipati, S. (2008). Agricultural wage work, seasonal migration and the widening gender gap: Evidence from a semi-arid region of Andhra Pradesh. The European Journal of Development Research, 20(4), 629-648.

Ghatak, M., & Roy, S. (2007). Land reform and agricultural productivity in India: a review of the evidence. Oxford Review of Economic Policy, 23(2), 251-269.

George, P. S. (1986). Emerging Trends in Size Distribution of Operational Holdings in Kerala, Economic and Political Weekly, Vol. 21, No. 5 (Feb. 1, 1986), and pp. 198-200.

Government of India. (2006-07). Bharat Nirman through Rural Development, Ministry of Rural Development.

Government of India. (1966). Planning commission report.

Government of India. (2007). Report of the export group on agriculture indebtedness. Ministry of Finance.

Government of India. (2013). Draft National Land Reforms Policy, Department of Land Resources, Ministry of Rural Development.

Hanumantha Rao, C.H. (1972). Ceiling on Agricultural Land-Holding: It's Economic Rationale. Economic and Political Weekly, Vol. 7, No. 26, pp. A59+A61-A62.

Hanumantha Rao, C. H. (1998). Agricultural Growth, Sustainability and Poverty Alleviation: Recent Trends and Major Issues of Reform. Economic and Political Weekly, Vol. 33, pp. 1943-1945+1947-1948.

Haque, T and Parthasarathy, G. (1992). Land Reform and Rural Development: Highlights of a National Seminar. Economic and Political Weekly, Vol. 27, No. 8, pp. 395-397.

Hazra, C. R. (2001). Crop diversification in India. Crop diversification in the Asia-Pacific region. Food and Agriculture Organization (FAO) of the United Nations, 32-50

Jean Paul Chausse. (1982). A note on agricultural credit in India. Savings and Development,Vol. 6, pp. 283-303. URL: http://www.jstor.org/stable/25829815.

Jose George and P. Krishnaprasad. (2006). Agrarian Distress and Farmers' Suicides in the Tribal District of Wayanad. Social Scientist, Vol. 34, No. 7/8, pp. 70-85.

Kaushik Basu. (2007). Land Reform, entry in The Oxford Companion to Economics in India, Oxford University Press.

Kavitha Kuruganti. (2009). Bt Cotton and the Myth of Enhanced Yields. Economic and Political Weekly, Vol. 44, No. 22, pp. 29-33.

Krishnaji, N. (1979). "Agrarian Relations and the Left Movement in Kerala A Note on Recent Trends", Economic and Political Weekly, Vol. 14, No. 9 (Mar. 3, 1979), pp. 515-521.

Koneru Ranga Rao committee report. (2006). Land issues in Andhra Pradesh. Submitted to the Government of Andhra Pradesh 2006.

Kumar Kangayappan. (1973). Some Policy Issues on Mitigating Poverty in India. Land Economics, Vol. 49, No. 1 (Feb., 1973), pp. 76-81.

K.A. Manikumar. (2014). Impact of British Colonialism on Different Social Classes of Nineteenth-Century Madras Presidency. Social Scientist, Vol. 42, No. 5/6, pp. 19-42.

Mazumdar, D. (1965). Size of farm and productivity: a problem of Indian peasant agriculture. Economica, 32(126), 161-173.

Mohanakumar, S. (2010). Agrarian Crisis and National Commission for Enterprises in the Unorganized Sector. Social Scientist, Vol. 38, No. 5/6, pp. 62-75.

Mohanty, B. B. (2001). Land Distribution among Scheduled Castes and Tribes, Economic and Political Weekly, Vol. 36, No. 40, pp. 3857-3868.

NCEUS. (2008). A special programme for marginal and small farmers. National Commission for Enterprises in the Unorganized Sector. New Delhi, pp. 1-77.

Nancharaiah, G. (1987). Land legislation and changing agrarian structure, Indira Gandhi Memorial library, University of Hyderabad.

Nin-Pratt, A., Yu, B., & Fan, S. (2010). Comparisons of agricultural productivity growth in China and India. Journal of Productivity Analysis, 33(3), 209-223.

Narayanamoorthy, A. (2006). State of India's Farmers. Economic and Political Weekly, Vol 41, No 6, February 11, pp 471-73.

Narayanamoorthy, A. (2007). Deceleration in agricultural growth: technology fatigue or policy fatigue?. Economic and Political Weekly, 2375-2379.

Narasimha Reddy, D. et.al. (2010). Economic reforms, small farmer economy and agrarian crisis: Agrarian crisis and farmer's suicides in India, land reforms in India volume 12, chapter -2, page 43-69.

Oaxaca, R. L., & Ransom, M. R. (1999). Identification in detailed wage decompositions. Review of Economics and Statistics, 81(1), 154-157.

Pal, Suresh, etc. al. (1997). Forthcoming Agricultural Research and Extension in India: Institutional Structure and Investments, National Centre for Agricultural Economics and Policy Research, July, New Delhi.

Pallavi Chavan. (2013). Credit and Capital Formation in Agriculture: A Growing Disconnect. Social Scientist, Vol. 41, No. 9/10, pp. 59-67.

Panda, P., & Agarwal, B. (2005). Marital violence, human development and women's property status in India. World Development, 33(5), 823-850.

Pandey.S.N. (2008). Economic History of Modern India New Delhi, India Read worthy Publications Pvt. Ltd.

Panos Tsakloglou (1989). Measurement and decomposition of inequality by population subgroups: a survey and an example. Spoudai-Journal of Economics and Business, 39(1-4), 23-47.

Partha Saha (2009). "Land relations and asset holdings: a study based on village-level evidence from Uttar Pradesh", Thesis submitted to Jawaharlal Nehru University.

Parthasarathy, G.and Suryanarayana Raju, K. (1971). Andhra Pradesh (Andhra Area) Tenancy (Amendment) Act, 1970: A Critical Review. Economic and Political Weekly, Vol. 6, No. 13, pp. A45-A47.

Parthasarathy. (1996). Changes in the agrarian structure and directions for land reforms in the1990s. Land reforms in India, volume-3, Page number 70-84.

Patnaik, P. (1997). Macro-Economic Policy and Income Distribution: A Note. Economic and Political Weekly, 1077-1081.

Pradhan, H. Prasad. (1987). Agrarian Violence in Bihar. Economic and Political Weekly, Vol. 22, pp. 847-852.

Radhakrishnan. P. (1990). Land Reforms: Rhetoric and Reality. Economic and Political Weekly, Vol. 25, No. 47, pp. 2617-2621

Rajivlochan Meeta. (2008). Rejuvenating Agriculture with the Help of the Small Farmer, Economic and Political Weekly, Vol. 43, No. 11, pp. 17-21.

Rakesh Mohan. (2006). Agricultural Credit in India: Status, Issues and Future Agenda. Economic and Political Weekly, Vol. 41, No. 11, Money, Banking and Finance, pp. 1013+1015-1017+1019-1023.

Ramakumar, R. and Pallavi Chavan. (2008). Revival of Agricultural Credit in the 2000s: An Explanation. Economic and Political Weekly, Vol. 42, No. 52, pp.57-63.

Ranjana Padhi. (2009). On Women Surviving Farmer Suicides in Punjab. Economic and Political Weekly, Vol. 44, No. 19, pp. 53-59.

Ramesh, Chand, P A Lakshmi Prasanna and Arun Sinha (2011). Farm size and productivity: Understanding of strengths of smallholders and improving their livelihoods. Economic and Political Weekly, Vol. XLVI, No. 26 and 27. pp. 5 – 11.

Ratan Ghosh. (1979). Land Reforms and the Draft Five Year Plan 1978-83. Economic and Political Weekly, Vol. 14, No. 45, pp. 1850-1853.

Ratna Murdia. (1975). Land Allotment and Land Alienation: Policies and Programmes for Scheduled Castes and Tribes. Economic and Political Weekly, Vol. 10, No. 32, pp. 1204-1205+1207-1209+1211-1214.

Ratna Reddy, V. and Galab, S. (2006). Looking beyond the Debt Trap. Economic and Political Weekly, Vol. 41, No. 19, pp. 1838-1841.

Rao, A. P. (1967). Size of holding and productivity. Economic and Political Weekly, 1989-1991.

Reddy, M. A. (1990). Travails of an irrigation canal company in South India, 1857-1882. Economic and Political Weekly, 619-628.

Rekha Bandyopadhyay. (1993). Land System in India: A Historical Review. Economic and Political Weekly, Vol. 28, No. 52, pp. A149-A155.

Ronald J. Herring. (1980). Abolition of Landlordism in Kerala: A Redistribution of Privilege. Economic and Political Weekly, Vol. 15, pp. A59-A61+A63-A69.

Rudra, A. (1983). Non-maximising behaviour of farmers: Crop selection. Economic and Political Weekly, 1717-1722.

Saini, G.R. (1979). Farm Size, Resource-Use Efficiency and Income Distribution. New Delhi: Allied Publishers

Sanyal, S.K. (1969). Size of Holding and Some Factors Related to Production, Economic and Political Weekly, Vol. 4, No. 33, pp. 1345-1347.

Sarkar, B. (1989). Land Reforms in India, Theory and Practice: A Study of Legal Aspects of Land Reforms Measures in West Bengal. APH Publishing.

Sarwar, F. H. (2012). A Comparative Study of Zamindari, Raiyatwari and Mahalwari Land Revenue Settlements: The Colonial Mechanisms of Surplus Extraction in 19th Century British India. *IOSR Journal of Humanities and Social Science*, *2*(4), 22.

Sathyamurthy, T .V. (1986). India since Independence: A Research Note on the Development of the Power of the Indian State. South Asia Research, 6 (1): 39-51.

Satish, P. (2007). Agricultural Credit in the Post-Reform Era: A Target of Systematic Policy Coarctation. Economic and Political Weekly, Vol. 42, No. 26 (Jun. 30 - Jul. 6, 2007), pp. 2567-2575.

Shah, G. (2004). Social movements in India: A review of literature. SAGE Publications India pp.52.

Shah, M., Rao, R., & Shankar, P. V. (2007). Rural credit in 20th century India: overview of history and perspectives. Economic and Political Weekly, 1351-1364.

Shawn Cole. (2009). Fixing Market Failures or Fixing Elections? Agricultural Credit in India. American Economic Journal: Applied Economics, Vol. 1, pp.219-250.

Sheila Bhalla. (1977). Changes in Acreage and Tenure Structure of Land Holdings in Haryana, 1962-72,Economic and Political Weekly, Vol. 12, No. 13 , pp. A2-A5+A7-A9+A11-A15

Shourie David, G. and Y. V. S. T. Sai. (2002). Bt Cotton: Farmers' Reactions, Economic and Political Weekly, Vol. 37, No. 46 (Nov. 16-22, 2002), pp. 4601-4602.

Sharma, H. R. (1994). Distribution of Landholdings in Rural India, 1953-54 to 1981-82. Economic and Political Weekly, 29(39), 24 September, A-l 17-28.

Sharma, H. R. (2007). Land Distribution and Tenancy among Different Social Groups. Economic and Political Weekly, Vol. 42, No. 41, pp. 4183-4185.

Shetty, P. K. (2004). Socio-Ecological Implications of Pesticide Use in India. Economic and Political Weekly, Vol. 39, No. 49, pp. 5261-5267.

Sridhar, V. (2006). Why Do Farmers Commit Suicide? The Case of Andhra Pradesh. Economic and Political Weekly, Vol. 41, No. 16, pp. 1559-1565.

Sudipta Bhattacharyya, etc.all. (2013). Political Economy of Agrarian Crisis and Slow Industrialization in India. Social Scientist, Vol. 41, No. 11/12, pp. 43-63.

Syed Ali. (1996). Distribution of Ceiling Surplus Land and Its Impact on Employment and Income. In an edited book by Yugandhar, N (1996), "Land Reforms in India", Vol. 3, pp. 121-129.

Swades Pall and Shyamal Kar. (2012).Implications of the methods of agricultural diversification in reference with malda district: drawback and rationale .International Journal of Food. Agriculture and Veterinary Sciences, Vol. 2 (2) May-July, pp.97-105.

Thilothu Rao. G. (2017). Implementation of scheduled caste sub plan in Telangana state: a village study from the Nalgonda district special reference to LPLDS. University of Hyderabad.

Tirthankar Roy. (2007). A delayed revolution: environment and agrarian change in India. Oxford Review of Economic Policy, Vol. 23, No. 2, pp. 239-250.

Talia Bar and Kaushik Basu. (2009). Children, Education, Labor, and Land: In the Long Run and Short Run, Journal of the European Economic Association, Vol. 7, No. 2/3, Proceedings of the Twenty-Third Annual Congress of the European Economic Association, pp. 487-497.

Uppal, J. S. (1969). Attitudes of Farm Families toward Land Reforms in Some Punjab Villages. the Journal of Developing Areas, Vol. 4, No. 1, pp. 59-68 Published by: College of Business, Tennessee State University.

Utsa Patnaik. (2002). Agrarian Crisis and Global Deflationism. Social Scientist, Vol. 30, No. 1/2, pp. 3-30.

Vaidyanathan, A. (2006). Farmers' suicides and the agrarian crisis. Economic and Political Weekly, Vol. 41, No. 38, pp. 4009-4013.

Velayutham Saravanan. . (2006). Colonial Agrarian policies in the tribal areas of madras presidency: 1872–1947. South Asia Research, Vol. 26(1): 63–85.

Some pictures of the village (village panchayat office)

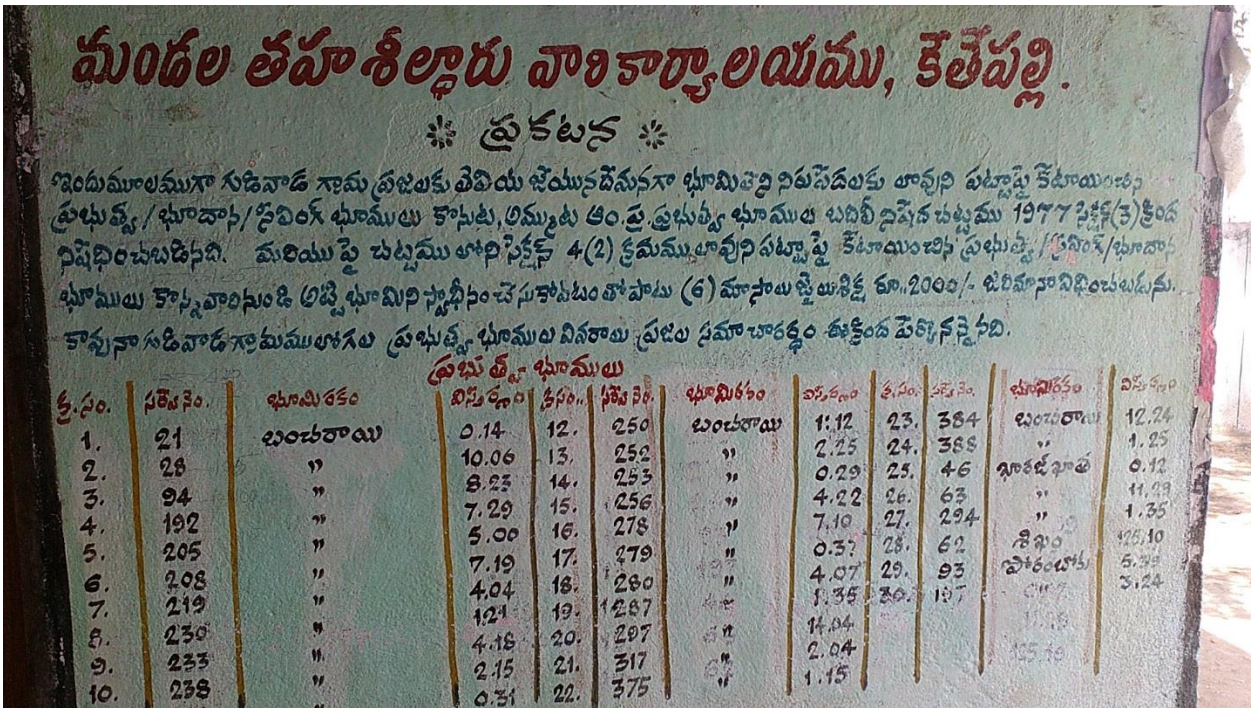
Village School

Village Temple

Village Paddy fields

Village Tank

This picture shows about village Government Land



మండల తహశీల్దారు వారి కార్యాలయము, కేతేపల్లి.

ప్రకటన

ఇందుమూలముగా గుడినాడ గ్రామ ప్రజలకు తెలియ జేయునదేమనగా భూమిలేని నిరుపేదలకు ఇవ్వని పట్టాపై కేటాయించిన ప్రభుత్వ / భూదాన్ / సీలింగ్ భూములు కొనుట, అమ్మట అం.ప్ర ప్రభుత్వ భూముల బదిలీ నిషేధ చట్టము 1977 సెక్షన్ (3) క్రింద నిషేధించబడినది. మరియు పై చట్టము లోని సెక్షన్ 4(2) క్రమము ఇవ్వని పట్టాపై కేటాయించిన ప్రభుత్వ / సీలింగ్ / భూదాన్ భూములు కొన్నవారినుండి అట్టి భూమిని స్వాధీనం చేసుకోవటం తో పాటు (6) మాసాలు జైలుశిక్ష రూ.2000/- జరిమానా విధించబడును. కావున గుడివాడ గ్రామము లోగల ప్రభుత్వ భూముల వివరాలు ప్రజల సమాచారార్థం ఈక్రింద పెర్కొనడైనది.

ప్రభుత్వ భూములు

క్ర.సం.	సర్వే నెం.	భూమి రకం	విస్తీర్ణం	క్ర.సం.	సర్వే నెం.	భూమి రకం	విస్తీర్ణం	క్ర.సం.	సర్వే నెం.	భూమి రకం	విస్తీర్ణం
1.	21	బంచరాయి	0.14	12.	250	బంచరాయి	1.12	23.	384	బంచరాయి	12.24
2.	28	"	10.06	13.	252	"	2.25	24.	388	"	1.25
3.	94	"	8.23	14.	253	"	0.29	25.	46	భూకబ్జాలో	0.12
4.	192	"	7.29	15.	256	"	4.22	26.	63	"	11.29
5.	205	"	5.00	16.	278	"	7.10	27.	294	"	1.35
6.	208	"	7.19	17.	279	"	0.37	28.	62	శిథిలాలు	125.10
7.	219	"	4.04	18.	280	"	4.07	29.	93	పోరంబోకు	5.39
8.	230	"	121	19.	287	"	1.35	30.	197		3.24
9.	233	"	4.18	20.	297	"	14.04				
10.	238	"	2.15	21.	317	"	2.04				
			0.31	22.	375	"	1.15				