Chapter II

REVIEW OF LITERATURE AND METHODOLOGY
The majority of the world poor is rural people and that the extent of rural poverty has not diminished and indeed may have increased in recent years. Rural poverty is the major constituent of world wide poverty not only because the rural poor dominate numerically among the world poor but also because the incidence of poverty is disproportionally high among the rural population. The immediate explanation offered is that poverty is caused by low incomes, which in turn may be attributed primarily to inadequate access to land. Singh in this context observes, it is also generally agreed that majority of rural poor are agricultural labour households without land or with very little land or small farmers, or other rural labour households.

The core problems of widespread poverty growing inequality, rapid population growth and rising unemployment all find their origin in the stagnation and often retrogressive of economic life in rural areas. In Third World countries which had experienced relatively high rates of economic growth by historical standards in 1960, began to realize that such growth had brought few significant benefits to the poor. The hundreds of millions of people in Africa, Asia, the Middle East and Latin America, levels of living seemed to stagnate and in some countries, even to decline in real terms. The distribution of incomes between rich and poor seemed to get worse. Many people felt that rapid economic growth had failed to eliminate or even reduce the widespread absolute poverty that remains a fact of economic life in all
developing countries. In the place of rise in Gross National Product, concern for the problems of poverty and equality became the major theme of the second development decade.\textsuperscript{2} The landless labourers and small farmers comprise the majority of rural poor in India, Bangladesh, Malaysia, Kenya, Iran and Mexico. Growing pressures of population within rural areas and within the agricultural sector will add to the numbers of landless and smallholders, even if there were to be no aggravation of inequalities.\textsuperscript{3} More acute problems of landless in the 1980 will occur in the poorer countries of Asia and the Far East. A study by FAO shows that there is likely to be an addition of 50 million house-holds of smallholders and landless in 90 developing countries and a majority of the smallholders will be near landless. It is confirmed that in most developing countries economic growth alone cannot be sufficiently rapid to absorb the increased population and to reduce existing numbers of rural poor. The most obvious reason, why some producers lag behind the average is the failure or inability to adopt new technology or adjust the farming systems where most other farmers are doing so, due to ignorance or inadequate resources. In this way, one of the outcomes of economic growth through rising agricultural productivity may be a descent into poverty for those agricultural producers who cannot maintain the average level of productivity increase. This is the source of a major criticism of the \textit{Green Revolution} type of agricultural development. Reinforcing this criticism, those farmers with above average productivity growth are in
a position to lay claim to additional resources, especially land and capital.

The new agricultural technology was seen as setting off a *Green Revolution* or a *Seed Fertilizer Revolution* and the earlier gloomy prediction, has lost its validity in the context of new technology. The new technology which is said to herald the transformation of agriculture from a *traditional to a modern* one brought in its wake many short and long run implications, for the economy in general and for the farm sector in particular. In short run effects of the new technology is an increase in the incomes of the adopters but a still more important aspect is its effect on the pattern of income distribution among farmers of different sizes because the new technology is *scale neutral* but not *resource neutral*. In the words of Myrdal, although in theory the new seeds and fertilizers are neutral to scale, in practice they are not. It is held that the new technology with its resource bias in favour of big farmers has led to the widening of existing inequalities. On the contrary, some studies observe that the small farmers are in the forefront in the adoption of new technology and therefore, there is a reduction in inequalities. Thus there is no consensus among researchers as to the exact impact of new technology on income distribution.

The Policy makers recent thrust on *trickling down* the effects of development and thereby attaching importance to growth with distributive justice, the literature on this subject is growing at a rapid
pace. An attempt is made here to review the select literature on the impact of new technology on income distribution in India and abroad studies.

Griffin *The Political Economy of Agrarian Change*, is a critical assessment of the technical change in agriculture wherein it is suggested that technical change in agriculture resulted in greater income inequality and a polarization of social classes. The data is drawn primarily from Asia, besides, two Latin American countries of Mexico and Columbia, to make the analysis quite general and to draw worldwide implications. The major hypothesis is that economic and political power are concentrated in a small group and as a result, factor markets are highly imperfect. It is demonstrated in this study how biased technical change, market imperfections and government policy combine to ensure that the benefits of the *Green Revolution* accrue largely to more prosperous regions and more prosperous landowners. Changes in status and class alignments have been accompanied by changes in the distribution of income.4

Griffin in the book, *Land concentration and Rural Poverty*, is that the distribution of income in the agricultural sector and the standard of living of the majority of the rural population are greatly affected by the degree of land concentration. In each essay one encounters a constant refrain about the critical role of agrarian reform in alleviating poverty. Griffin points out that one of the great achievements in Taiwan, is its ability to combine high rates of savings
and growth with relatively equitable distribution of income. Some nations (Pakistan) have achieved rapid growth, but this has occurred at the expense of equity. Others (Sri Lanka) have been more equitable, but the rate of growth has been unsatisfactory. There are many reasons, why income is more evenly distributed in Taiwan than elsewhere. First, within the agricultural sector, the distribution of income from farming is relatively equal. Absentee landlordism was abolished during the post-war agrarian reform, rents were fixed and are now quite low and the average size of holding and unit of ownership is small and the dispersion around the average slight. All the factors have contributed to a more egalitarian community.\(^5\)

In this context, it is argued that the existence of yield-increasing innovations which are neutral to scale and consistent with the existing systems of small-scale agriculture increases the advantages of the labour-intensive, capital-saving alternative. In general, there seems to be a growing recognition of the relevance of this type of approach to developing countries not only in Asia but in parts of Africa and Latin America as well. Others however have drawn very different conclusions from the initial successes of the seed-fertiliser revolution. In their view, the introduction of improved varieties should be accompanied by the rapid expansion of mechanization and the replacements of animal draft power by tractors and tractor-drawn equipment. Although it is obviously not admitted, prescribing all-out tractor mechanization under these condition is equivalent to
advocating development according to the *Mexican Model*, that is a farm economy characterized by a dual-size structure with increases in output and commercial sales concentrated in a small subsector of large-scale, capital-intensive farm operations.6

Food and Agriculture Organization, study is concerned with absolute poverty in rural areas and one of the origins of this poverty must lie in inadequate access to land and other factors leading to insufficient production. The study concludes that a sustained effort is needed on many fronts. No new startling technological break through can be relied upon to transform production, there are no painless short cuts to more equitable distribution of income and food supplies. The study reviews the extent of poverty in 90 developing countries in terms of under nutrition, illiteracy and life expectancy. The examines the relative incidence of poverty in rural as opposed to urban areas. Rural poverty emerges as the major constituent of poverty world wide, not only because the rural poor outnumber the urban poor by a substantial margin but also because the incidence of poverty is disproportionately severe among rural population. The causes of rural poverty and in particular the ways in which it can emerge as a result of economic or population growth. Rural poverty is seen here as a highly complex problem. Limited access to land due to a very unequal distribution of land or population pressure is undoubtedly a major contributory cause of insufficient production but the inherent quality of the land and quantity of labour and capital are also determinate of
the level of farm output. The small household still suffers from food shortage is the small farmer is unlikely to possess sufficient capital or financial resources and is hence unlikely to have access to improve farming methods which require fertilizers, chemical sprays, machinery, etc. Thus it is possible to find families plunged into poverty by an inadequacy of any of the major factors of production land, labour or capital. For most developing countries the survey reveals that small holdings account for the majority of total holdings in the world.

The International Rice Research Institute and Agricultural Development Council, *Consequences of small farm mechanization*, which principally provides evidence that corroborates the conclusions that emerge from a critical examination of previous mechanization studies. Some distributional implications of mechanization are also touched upon in one general paper on mechanization increases food output, it would benefit all classes of consumers through lower food grain prices, while in the absence of output increases and with labour displacement, there could be adverse distributional consequences. However, in this context it is important to note that even where there are output gains these would not necessarily pass on to the poor. Prices, in a context where there is a strong upward pull in government fixed procurement prices a pull exercised by the larger farmers, whose position has been consolidated economically and politically with the new technology.7
been based mainly on the currently iniquitous distribution of land. There is no denying the fact that the operated land is unequally distributed. However in relation to the question of sharing benefits from green revolution, it is not the distribution of operated land but the distribution of irrigated land that is relevant. Since the percentage of irrigated land operated by the medium sized farms is the largest, the share of benefits flowing to these farms is likely to be the greatest. Sen comments that widespread adoption by small and medium sized farms is predominating, which not so much to the scale-neutrality of the high yielding varieties, but partly to the inherited pattern of distribution of irrigated land and partly to the Government initiated mass action programme under which all irrigated land and all irrigated farms sought to be covered. Regarding intraregional disparities he agrees with Peter Von Blackenburg that there is no evidence of any significant increase in polarization and agrarian unrest that could be attributed to the green revolution.10

Krishna Bharadwaj Survey data finds there is virtually no evidence of this negative relationship when individual crops are considered, this does not necessarily contradict the above hypothesis as the prevailing cropping pattern usually takes account of fertility differences in soil. The criticism of this study is its neglect of the possibilities of non-farm employment of members of large families. A more important explanation offered perhaps is the relatively much higher labour input in smaller holdings. It is also found that not only
do smaller farms apply more labour per unit of land, they also cultivate it more intensively in terms of other inputs.\textsuperscript{11}

The new technology associated with the high yielding seed varieties was introduced, its implications for farms of different size categories became a major issue of debate. The proponents of new technology contended that it was scale neutral, that is, new inputs like fertilizers, insecticides and seeds were divisible and could be used in the same proportion by both the large and small farmers alike. However, opponents of new technology pointed to the indivisibility of machinery which could be more optimally exploited by the large farms, to which the proponents, while admitting the role of tractors and tube wells under new technology replied that their using time was divisible, and that it was possible for even a small farmer to hire tractors time in accordance with his farm size. On the other hand, the opponents like Griffin argued about the imperfections in factor markets and the small farmers limited access to it. Since most of the inputs had to be purchased from the market with cash or through cooperatives, or banks and because of unequal access to credit and cooperative resources by the farmers of different size categories, the opponents argued that the new technology had widened the disparity between the poor and rich farmers in the country-side.\textsuperscript{12}

Hanumantha Rao in his study reveals that technological change as such has contributed to the widening of disparities in income between different regions, between small and large farmers and
between land owners on the one hand and landless labourers and tenant on the other. New technology, according to Rao, has induced a high growth rate of output among the already developed regions and large farms, owing to their better resource position. Rao points out that the wide disparities of income could be explained in terms of disparities in land-holdings.\textsuperscript{13}

Raju says two results, first, the estimates of income inequality indices indicate an overall decline in the farm income inequality in the district. Second, the more equal adoption of new farm technology has significantly reduced income inequality. He points out that the results of the study differ with the views of some economists who argue that the stage has not been reached in Indian agriculture in which equality in the rates of adoption of new technology among operators of small and large farms and the resulting income inequality start declining. Although the results of the study are based on only two separate crop years of a single district, and the district is an IADP in which the Government took more interest such as special arrangements made for the supply of new production inputs and credit and for training and educating the farmers in the use of new technology all this did help in reducing the early inequality in the rates of adoption of new technology among operations of small and large farmers and also the income inequality since the Government investments in infrastructure facilities enabled all size groups of farmers to benefit from new
technology. The inequality in the rates of adoption between small and big farmers dropped and so did the farm income inequality.\textsuperscript{14}

The studies reviewed above have evaluated the impact of new technology on income and employment distribution at international, national and regional levels by the individual researchers, institutions and Governments. The agro-climatic and socio-economic conditions in different regions. Area-specific studies are comparatively limited in number, which are of great importance in view of vast variations in the implementation of agricultural policy programmes. A careful investigation at micro level is therefore necessary to take a correct stand in regard to the relationship between farm size and technology in respect of agricultural development and social justice. The present study is an attempt in this direction.

**OBJECTIVES**

The objectives are,

- Assessing the impact of new agricultural technology on yield and farm business income of sample farmers,
- Examining the relation between the farm size and yield/farm business income of sample farmers, and
- Analyzing the pattern of income and employment distribution among different size groups.
HYPOTHESES

Based on the above objectives, the following hypotheses have been tested in the study.

➢ There is no significant difference in the yield and farm business income of local and high yielding varieties of paddy and sunflower.

➢ There is no significant difference in the relationship between farm size and yield in adoption of new agriculture technology of local and high yielding varieties of paddy and sunflower and

➢ There is no significant difference in the pattern of income and employment distribution among the size group under new agricultural technology.

SOURCES OF DATA

The study makes use of both secondary and primary data for analysis, drawing inferences and arriving at conclusions. The sources of secondary data are the periodical publications such as, Statistical Abstracts of Andhra Pradesh and Season and Crop Reports of Andhra Pradesh, Hyderabad, the publications of Government of India, the Reserve Bank of India and the National Institute of Rural Development, the publications of Food and Agricultural Organization of the United Nations and periodicals like Indian Journal of Agricultural Economics, American Journal of Agricultural Economics, Economic and Political Weekly and other economic journals and
published and unpublished research works by individuals. However, the present study is mainly based on primary data collected by way of field study. The schedules specifically designed for the study are canvassed through personal interview.

SAMPLE DESIGN

For the collection of primary data, a multi-stage sampling frame is used. All the Mandals in Kurnool district on the basis of Percentage of irrigated area to total cultivated area (with above 50 per cent and below 50 Per cent of irrigated area) since irrigation is the pre-requisite for the adoption of new technology. From each section one Mandal has been selected randomly in the district and from each Mandal, two villages have been selected at random. Lists of farmers with landholding particulars are prepared in an ascending order on the basis of landholding. The farmers in the lists are stratified into three groups on the basis of their landholdings (below 2 hectares, 2-4 hectares and above 4 hectares). From each stratum, 10 per cent of the farmers are selected as ultimate units of the study. Random sampling procedure is used for the selection of farmers. The structures of the selected sample holdings and sample house-holds are given in Table-2.1.
TABLE-2.1
DISTRIBUTION OF SAMPLE HOUSE-HOLDS AND CULTIVATED AREA IN SAMPLE VILLAGES IN KURNOOL DISTRICT

<table>
<thead>
<tr>
<th>Sample Mandals</th>
<th>Villages</th>
<th>Total Cultivated Land (Area in Hectares)</th>
<th>Total house-holds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panyam</td>
<td>Alamur</td>
<td>566</td>
<td>575</td>
</tr>
<tr>
<td></td>
<td>Bhupanapadu</td>
<td>241</td>
<td>439</td>
</tr>
<tr>
<td>Velugodu</td>
<td>Velpanur</td>
<td>1616</td>
<td>1358</td>
</tr>
<tr>
<td></td>
<td>Gunthakandala</td>
<td>1185</td>
<td>326</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>2698</td>
</tr>
</tbody>
</table>


The above Table-2.1 shows that, 270 house-holds distributed over the two mandals and three size groups are selected using random sampling procedure. The ultimate sampling units constitute about 10 Per cent of the house-holds.

TOOLS OF DATA COLLECTION

A specific schedule has been designed and used to collect information from all the sample farmers in the four villages of the two mandals of the area under study. The required information and
relevant data are collected through personal interview. Information concerning family size and composition, size of holding, operated area, leased-in land, leased-out land, area under irrigation, cropping pattern area under local varieties and high yielding varieties of paddy and sunflower crops, cost of cultivation of various crops grown labour cost (operation-wise), input costs (item-wise) gross farm income, farm business income, non-form income, asset position, etc. are collected.

TOOLS OF ANALYSIS

Besides simple averages and Percentage, the Karl Pearson's product movement correlation co-efficient is used to find out the association between new agricultural technology and yield in the district. For the long-run trend rates of growth of area, yield and production of crops, paddy, and sunflower at all-India level and growth of area (including High Yielding Varieties yield and production of paddy and Sunflower). The linear and compound growth rates have been computed using the following trend equations.

LINEAR GROWTH RATE

\[ Y = a + bx \]

Where \( Y=\)Index Number of Area/Production/Yield,  
\( X = \)Time  
Here \( a \) and \( b \) are constants.
For testing the significance of Linear Growth Rate,

\[ t = bx(n - 2) \left[ \frac{\sum(x_i - \bar{x})^2}{\sum(y_i - \bar{y})^2} \right]^{1/2} \]

Where \( b = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{(x_i - \bar{x})^2} \)

and \( (y_i - \bar{y})^2 = \sum(y_i - \bar{y})^2 - b^2 \sum(x_i - \bar{x})^2 \)

Compound Growth Rate,

\[ Y = AB^x \text{ or} \]

\[ \log Y = \log A + X \log B \]

where \( Y = \) Index Number of Area/ Production/Yield

\[ X = \text{Time} \]

Compound Growth Rate \( (\text{anti log} B - 1) \times 100 \)

For testing the significance of Compound Growth Rate,

\[ t = \frac{B}{SE(B)} \]

Where \( SE(B) = \left[ \frac{1}{n - 2} \left\{ \frac{S_{xy}}{S_{xx}} - B^2 \right\} \right]^{1/2} \)

\[ S_{xy} = \sum \log^2 y - \frac{(\sum \log y)^2}{n} \]
and \( S_{xx} = \sum X^2 - \frac{(\sum X)^2}{n} \)

In order to test the significance of the difference between means of the average yield/farm business income of high yielding varieties and local varieties of paddy and also the difference between the means of the average yield/ farm business income of sunflower of sample house-holds \( t \) test has been used.

\[
t = \frac{\bar{x}_1 - \bar{x}_2}{s},
\]

\[
s = \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}
\]

Where, \( \bar{x}_1 \) = Mean of the Yield of Local Varieties of Paddy/Sunflower

\( \bar{x}_2 \) = Mean of the yield of High Yielding Variety of Paddy/Sunflower

\( S \) = Combined Standard Deviation

\( n_1 \) = Number of observations in respect of Local Variety of Paddy/ Sunflower

\( n_2 \) = Number of observations in respect of High Yielding Varieties of Paddy/ Sunflower.

To study the nature of relationship between farm size and operated Area/ Irrigated Area/ Intensity of Cropping at the district level and farm size and Area/ Yield/ Farm Business Income of Local and High Yielding Varieties of Paddy/ Sunflower of the sample house-holds, log linear function has been fitted.
Log $Y = \log a + \alpha \log X$

Where,

$Y = \text{FBI/Yield/Intensity of Cropping/Percentage of Irrigated Area}$

$X = \text{Average size of holding and } \alpha \text{ are constants.}$

The method of least squares has been used in establishing the parameters. The F-test has been carried out to test the significance.

The resource use and productivity of farms belonging to different size groups under local and high yielding technology in Kurnool district is examined by using Cobb Douglas production function. In the functional analysis, the gross crop income per hectare which would reflect the crop income per hectare which would reflect the crop productivity was taken as the dependent variable. The variables like value of human labour employed, value of fertilizers and pesticides used, value of seeds used, irrigation charges and size of the holding were taken as explanatory variables, influencing the gross crop income. The postulated production function relationship in agriculture is reflected in the algebraic form of,

$$Q = a_i x_1^{b_1}, x_2^{b_2}, x_3^{b_3} + .... x_n^{b_n}$$

This function was transformed into the logarithmic form so that it could be solved by the method of least squares and it is stated as,

$$\log Q = \log a + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 + b_4 \log X_4 + b_5$$
log X_5 + b_6 log X_6 + e.

where,

\[ Q = \text{Gross value of Output of Local/High Yielding Varieties of Paddy and Sunflower} \]
\[ a = \text{The constant term} \]
\[ X_1 = \text{Size of Landholding (hectares.)} \]
\[ X_2 = \text{Value of Seeds (Rs.)} \]
\[ X_3 = \text{Value of Fertilizers and Pesticides (Rs.)} \]
\[ X_4 = \text{Value of Irrigation Charges (Rs.)} \]
\[ X_5 = \text{Value of Human Labour Employed (Rs.)} \]
\[ X_6 = \text{Value of Machinery Used (Rs.)} \]

\[ b_1, b_2, b_3, b_4, b_5, b_6 \] are partial regression coefficients for the respective variables,

\[ e = \text{error or disturbance them.} \]

The following measures are used to quantify the differences in income inequality among various size groups of sample farmers. The Lorenz curve and Gini ratio techniques have been used to study the degree of inequalities. The following formula has been used to compute Gini ratio.

\[
\frac{1}{100} \left[ (x_1 y_2 - x_2 y_1) + (x_2 y_3 - x_3 y_2) + \ldots + (x_n y_n + 1 - x_n + 1 y_n) \right]
\]
Where \(x_1, x_2, \ldots, x_n\) and \(y_1, y_2, \ldots, y_n\) are the cumulative Percentages of house-holds and incomes. Gini co-efficient as Percentage is calculated by dividing the sum of the differences by 100.

In order to find out whether it is possible to predict the two independent variables, farm business income inequalities and total income inequalities, the multiple R has been calculated by carrying out step-wise regression analysis. Multiple regression analysis has been carried out to predict farm business income and total income of the sample house-holds in two mandals of Kurnool district with the help of different sets of independent variables are Farm size, Irrigated area, Area under High Yielding Variety, Divisible Technology, Intensity of Cropping and Credit. The important factors that cause farm income inequalities among different size groups of house-holds. In the same way, for studying disparities in total income of the sample house-holds, step-wise regression analysis has been carried out to explain the maximum possible variance in the dependent variable (total income inequalities) with the help of eight independent variables both farm related factors, as in the case of farm income inequalities and non-farm factors assets and non-farm income.

The formula used is,

\[ Y^1 = A + b_1X_1 + b_2X_2 + b_3X_3 + \ldots + b_nX_n. \]

Where,

\[ Y^1 = \text{denotes the predicted score of dependent variable}, \]

66
A = is the constant,

$b_1, b_2, b_3, \ldots, b_n$ are partial regression coefficients,

$x_1, x_2, x_3, \ldots, x_n$ are the obtained values on different independent variables.

**CONCEPTS**

The following are the definitions of the concepts used in this study.

**New Agricultural Technology**

New technology is a technology associated with the usage of high pay-off inputs, such as, high yielding variety seeds, chemical fertilizers and pesticides along with effective water management.

**Farm size**

Operational holding was used in the present study. Operational holding may be defined as land owned plus land leased-in minus land leased out (land owned + land leased in – leased out). Farmers were divided into three groups on the basis of operational holding, namely, those operating up to 2 hectares, 2 to 4 hectares and above 4 hectares. For the purpose of comparison, those owning up to 2 hectares were designated as small farmers, from 2 to 4 hectares as medium farmers and 4 hectares and above as large farmers.
Intensity of cropping

Intensity of cropping is the percentage of cropped area to cultivated area.

\[
\frac{\text{Cropping Area}}{\text{Cultivated Area}} \times 100
\]

Cost of cultivation

The study has adopted the concepts of costs and farm business income used in Farm Management Studies of Government of India.

\text{Cost A}_1:- \text{ Includes hired human labour, farm and hired draft animal labour, seed and manure fertilizers, insecticides and pesticides, irrigation charges, depreciation on and maintenance of owned agricultural implements and farm buildings, hiring charges for agricultural implements and machinery, interest on circulating capital, land revenue and other taxes on owned land under self-cultivation and other miscellaneous cash expenses.}

\text{Cost A}_2:- \text{ Includes Cost A}_1 \text{ as defined above and rent paid on leased-in land.}
Cost B: Includes Cost $A_2$ and interest on capital invested (interest is reckoned on value of self-cultivated owned land).

Cost C: Includes cost B and the imputed value of human labour provided by the farm family. In the present study, only paid out costs, namely, Cost $A_2$ are used.

Farm Business Income

Farm business income is defined as gross value of output priced at farm harvest rates (main produce plus byproducts) minus Cost $A_2$.

Non-Farm Income

Income accruing together from all other non-farm activities (wage employment, hiring out of assets including land, small household enterprises, pensions/ salaries/ remittances).

Divisible Technology

In this variable, the value of fertilizers and pesticides are accounted for.

LIMITATIONS

This is a micro level study confined to Kurnool district of Andhra Pradesh and therefore the conclusions drawn are area specific. The reference period for the study is 2009-2010 covering two consecutive seasons are Kharif and Rabi of cropping. As the primary
data is obtained by survey method and as the farmers had to recollect the information from memory, since the maintenance of accounts by them is not in evidence in the study area, the data thus collected could only be an approximation to actual facts and figures. Because of these limitations, the study throws light only on certain broad features of Kurnool district agriculture, which may not be replicated elsewhere.

CHAPTERS SCHEME

In the first chapter, the various strategies of agricultural development, new agricultural technology initiated in the form of high yielding varieties, its spread and impact on yield and production and also on distribution of gains, both potential gain in terms of distribution of irrigated area and actual gain in the form of yield and farm business income among various categories of farmers in Indian agriculture are analyzed. As such, this chapter provides the background and theoretical basis for the study.

The review of literature, objectives and methodology of the study is presented in the second chapter.

In the third chapter, the brief profile of Kurnool District and sample mandals are discussed.

Chapter four examines the resource use and productivity of various inputs under traditional and modern technologies, besides
analyzing the impact of local and high yielding varieties of paddy and sunflower on yield and farm business income of sample farmers.

In chapter five, the distributional aspects relating to the structure of farms, irrigated area, area under local and high yielding varieties, yield rates, cost of cultivation, farm business income, etc. of sample farmers according to size groups are examined. The relationship between farm size and yield/farm business income is analyzed and the impact of new agricultural technology on income and employment distribution among various farm holdings is analyzed. The factors contributing to inequalities are also discussed and Summary of findings is presented in the sixth chapter.
REFERENCES


