Chapter - I

INTRODUCTION

Background of the Study

Two of the major agenda of economic reforms of free India envisaged before Independence were a) Land Reforms and Agrarian Reorganisation and b) Increased Productivity in agriculture sector. The Congress Economic Programme Committee, 1948 and the Congress Agrarian Reforms Committee, 1949 (better known as the Kumarappa Committee) laid down the following guidelines:

i) Elimination of all intermediaries between the State and the actual tillers of the soil.

ii) Subletting in future to be prohibited except in case of widows, minors and other disabled owners/persons.

iii) Actual tillers who were themselves not owners, but cultivating for more than six years should become owners of the land.

iv) In other cases, the owner may have an option to resume in a specified time, subject to well defined conditions including those of putting in minimum labour and participation in actual agricultural operations. Even in such cases, the resumption was to have been restricted to the extent that his self-cultivated holdings, inclusive of other lands, became economic, and subject to the further condition that the tenant-holding did not become uneconomical. The economic holding was to be determined on the principles that it provided full employment for a family of normal size, and atleast a pair of bullocks, and it must afford a reasonable standard of living. The optimum holding size was fixed at three units.

v) In the case of land held by charitable institutions, the management of the land was to vest in the Land Commission and the actual cultivators were to hold land as long as they rendered service. The provincial governments were expected to make appropriate arrangements for their income.

The policy on land reforms and agrarian reorganisation was also visualised as a catalyst for growth and social justice. With the adoption of the Constitution after Independence, within a decade all the major Indian states had passed their land reforms acts limiting the powers and oppressions of the Zamindars,

acquisition of surplus land for redistribution to the landless and promising some kind of security to the tenant cultivators. The thrust of these policies was disturbed with the growth process occurring in the agriculture since the middle of 1960s and what was popularly known as green revolution. The experience and studies suggest that along with growth and self-sufficiency, green revolution also brought about regional disparities (RBI, 1969; Parthsarathy,1991; Taslim, 1993), casualisation of labour, eviction of tenancy and social unrest (Bardhan & Bardhan, 1980) in many parts of the country. Most of these outcomes were because of prevailing agrarian relations. While the policy tried to promote growth with social justice, it actually resulted in growth with social tensions and growing poverty. Corrective measures in the shape of "Target Area" and "Target Groups" policies were taken up since Fourth Five Year Plan to check these tendencies. As a result, the poverty levels started declining since 1980s in the face of boosting agricultural economy.

With the initiation of economic reforms package since the beginning of nineties, the growth process in Indian agriculture appears to have become unsustainable and the pace of poverty reduction questionable. The worst affected area however seems to be the agrarian relations, as the land reforms agenda is totally relegated into background in the zeal for liberalisation and competitiveness. The policies once targeting the agricultural growth with social justice are now being questioned and presumably responsible for the poor performance of Indian agriculture in world trade. So far, it is believed that Green Revolution has taken place without institutional changes in agriculture, but is the result solely of the application of the input package by the agriculturists. Because of this spontaneous development, some circles have come to the conclusion that development of Indian agriculture in particular and Asian agriculture in general is possible without institutional changes (Frithjof Kuhnen).

Even the developed States like Punjab and Haryana are now facing problems, not only of market but of the growth as well. Worse, these agriculturally developed states are today faced with acute ecological crisis brought about by reckless use of irrigation and modern inputs of the growth guided by the market. The backward states, on the other hand, are now showing the signs of strain due to decelerated public investment in the agriculture sector. Even the states which are sustaining the growth impulses seem to be doing so at the cost of reduced access to land to the poor. More and more states now speak of liberalisation of tenancy laws, promotion of contract farming and emphasis on open market.

In view of these recent developments, it is imperative that the impact of growth on agrarian relations should be re-looked into and the relationship between agricultural growth, rural poverty and migration should be re-examined as agrarian relations is the main determining factor of rural livelihood system.

Review of Literature

The literature on agrarian relations in the post-reforms period has been quite scanty. Most of the available studies are essentially exploratory in nature and have speculated around the systems of tenancy from the point of view of contract farming and suggestive of changes in ceiling laws and tenancy laws for greater integration of land markets with general process of liberalisation. The thrust of these studies has been growth rather than social justice. However, there have been good number of studies on performance of agriculture sector, growing unemployment and poverty. A review of literature on agriculture in the post-reforms period highlight the following main points.

The broad conclusions of the studies on agrarian relations in India are: (i) The concentration of owned land and the incidence of landlessness have not changed much. (ii) The concentration of operated land has increased. (iii) The proportion of households owning but not operating land and neither owning nor operating land has remained nearly unchanged. (iv) The programme of land distribution to the scheduled castes and tribes has made positive impact. There did occur a significant decline in the incidence of landlessness among these social groups. (v) The incidence of tenancy both in terms of households leasing in and the amount based in has declined over the period. (vi) The terms of tenancy have also changed; the importance of share tenancy has declined both in terms of the holdings involved and the area leased in . (vii) The households of all size classes lease in and lease out land. The lease market largely functions on the principle of demand and supply, balance official ban/restrictions on leasing in and leasing out notwithstanding. (viii) The proportion of agricultural labour households has increased significantly and wage labour has become more casualised. Most of the studies are, however, based on secondary data emanating from the NSS reports on landholdings and agricultural census. So the limitations of NSS and census data in capturing the agrarian realities are well documented by now. Further, the state level aggregative studies based on published data not only mask considerable regional variations in different aspects of agrarian relations, but also certain aspects are simply not captured. There is a relative dearth of survey based on empirical studies. Consequently, some

important aspects of agrarian relations are not adequately researched. Some of the issues that need to be empirically resolved through in-depth micro level studies are listed below.

The very policies which brought about growth in agriculture sector in the seventies and eighties are now being questioned and advocacy is for reversal of policies, notable among them being the different incentives and subsidies on key inputs and support mechanisms like Minimum Support Prices. Most of the arguments against continuance of the earlier policies are on environmental considerations.

The second major trend as emerges from the various studies on agriculture in post-reforms period is nearly complete disregard for land reforms. Land reforms issue has now confined to mechanism and implications of contract farming, changes in lease laws to suit the requirements of the market surrogated with the argument of agricultural sustainability.

Recent Trends

The scanty literature on agrarian relations in the post-reforms period is indicative of the fact that that the entire issue is thrown in the background. Post-reforms literature shows that the issue of agrarian relations and land reforms has been given a totally new twist in recent times, especially since the emergence of the new economic policy from the beginning of the 1990s. The emphasis is not on the relations between landowners and landless within the rural society but between land owners and corporate sector. In other words, the linkages between land owners in the rural society and modern urbanised producers is now being emphasised. Contract/ corporate farming is the new institutional arrangement through which the small and marginal farmers are supposed to come out of the clutches of large farmers as far as their dependency for inputs and market is concerned. The experiments show mixed results.

The experiences of contractual arrangements in altering the institutional relations have been mixed. While in States like Punjab and Haryana it has helped mostly the medium and large farmers, in some of the States like Andhra Pradesh, it has been inclusive of the interests of the small farmers also (Haque, 2000). The apprehension is, however, that corporatisation of agriculture through contract farming arrangement will alter the agrarian relations against the small and marginal farmers who may ultimately lose their land rights and get converted as wage earners. Moreover, it is reported that farmers generally find that the

contracts are biased and enforced strictly. Firms provide poor extension service, over-price their services, pass on the risk to the producers, offer low prices of the produce, favour large farmers, delay payments, do not provide compensation for natural calamity loss and do not explain the pricing method (Glower, et. al., 1990). Another study points out that though contract leads to better incomes and employment in the beginning, the relations between firms and farmers worsen over time to the disadvantage of the growers, and the system results in ecological and economic degradation of production systems (Sukhapal Singh, 2000). The institutional arrangements for buying and selling, especially of foodgrains, also do not appear to be very favourable for the small and marginal farmers. Due to various differences in the opportunities available to small farmers of access to inputs machinery, credit, marketing and irrigation etc., the cost per acre and the cash receipts per acre for farmers may differ even with a single village depending on the size of their landholding, other resource base, influence etc. Also millions of small farmers allover the country purchase a significant part of their staple food in the market. Thus, these farmers may be actually harmed by a rise in the price of food in their role as buyers of this food, while in their role as sellers they may not always fully benefit from the price rise due to indebtedness etc. (Dogra, 1998).

Agrarian Relations- Conceptual Issues and Present Context

Conceptually the term agrarian relations has no unanimous definition. Consequently it admits of vast array of interpretable meanings.

a) Production Relations and Distribution Gains: In a narrow sense, it refers to the terms and conditions under which land owned by one person is leased-out to others. This definition deals mostly with the problems and effects of the magnitude and types of tenancy on agricultural production, class relations and income distribution in a broader sense. However, the term encompasses numerous aspects of agrarian realities. For instance, in addition to the magnitude and types of tenancy, it may also take cognizance of general class configurations, changing numerical strength of agricultural labourers, questions relating to changes in their employment and earnings, mode of wage payments, class bias in the working of local level institutions, and so on. Most of the studies on agrarian relations in Bihar and other states interpret the term in these senses.

However, for a proper and deep understanding of agrarian realities prevailing in the rural areas and their many sided effects, especially on production and

employment, it is pertinent to go by broader version of the concept of agrarian relations. These relations in turn determine not only the pattern of investment and utilisation of resources, but also the distribution of developmental gains among different sections of the society (Distribution of aspects).

***b) Tenancy Relations**:* The second most important dimension of the various aspects of the term agrarian relations, the pattern of land distribution occupies the prime place. For example, a highly skewed distribution of land leads to a class of few landlords on the one hand and an army of landless or near landless households on the other. This gives rise to the institution of tenancy under which many among the landless or near landless households lease-in land from those who own surplus of it. Most of the land reforms programmes in the country have mainly addressed to this issue of tenancy and have centered around elimination of tenancy as it has often been found to be unjust and exploitative.

***c) Technological Relations and Changes**:* The introduction and success of green revolution gave rise to another dimension of the term agrarian relations that is – the impact of technology on production relations and livelihood systems of the village economy. The main reason for such view has been the changing occupational pattern within the rural economy due to introduction of green revolution. Green revolution introduced three main factors in rural economy- i) resumption of land for self-cultivation in developed states, ii) growth in the agricultural labourers and iii) increase in migration from the poorer regions. The economy of the states like Bihar, for example have by and large, come to be known as migrant or remittances economy. To sum up the discussion, it may be said that the interpretations and the studies on agrarian relations may be put in three broad categories depending on the basic thrust of the study.

***i) Economic View**:* It usually refers to ownership structure and control over productive resources in agriculture sector. The agrarian community is broadly divided into five categories – large farmers, medium farmers, semi-medium farmers, small farmers and marginal farmers and agricultural labourers. Much of the poverty is explained in the country by differential ownership structure of the single most important asset in rural sector, namely, land. Consequently since Independence, land has been the prime focus of agricultural policies in India. It has been the general belief that land ownership can take care of rural poverty. Land reforms in India were initiated in the post-Independence period with twin objective – to give a boost to agricultural growth and transferring

ownership from those who own (but do not use it judiciously) to those who do not own but are actually cultivating it. Transfer of ownership either by granting patta by way of redistribution or by granting security to the tenant cultivator was supposed to be the engine of growth. At the same time such redistribution of land or security of tenancy was also to serve a social purpose – bringing down inequality of asset distribution and bridging the gap between the rich and the poor.

II) Social View *:* The economic reality of inequality in asset ownership is always seen as a master (haves) and servant (have nots) or as masters and proletariate. Much of the Marxian philosophy is based on the then existing feudal structure of asset ownership which always gets reflected into social inequality and division of rural society into exploiters and exploited. Pre-Independence literature and even some of the post-Independence literature is built around the stark poverty of the poor farmer dependent on rain and reeling under miseries caused by money-lenders and religious contractors. Thus, for sociologists, land is a determinant of social status.

III) Political View*:* Politically, landlords or zamindars were always seen as strong alleys of British and virtually enjoyed the status of renter middlemen. The oppressions at the hands of landlords or the cultivators were so strong that abolition of zamindari and land reforms tilted towards the landless had become political agenda of the Congress party even before Independence.

Emerging Issues and Need for the Study

Most of the studies on agrarian relations as mentioned earlier were carried out either against the backdrop of institutional reforms initiated after Independence highlighting the social justice aspect or in the post-reforms period vouching for liberalisation of tenancy and freeing it from legislative purview. From the beginning of 1990s, there have been rapid changes in the national economic policies and world economic environment, necessitating a fresh debate on agriculture sector in India. No matter how partial, incomplete, discontinuous and extremely sluggish the steps of implementation of land reforms were in the past five years, it has significantly affected the rural composition of Bihar. Along with the continued existence of old zamindar families possessing thousands of acres of land in some pockets, new type of landlords and rich farmers also dominate the scene in the countryside belonging to both upper castes and backward castes. Their assertion and aggressiveness is quite strong and powerful. Along with this new class, new kind of labourers have also come to the fore. Different from the earlier

harwaha who were tied with small plots of land and loans, these are a class of free labourers who work on daily wage basis. Side by side large segments of middle peasantry cultivating their own land have also emerged. Proportionally with the rise of these new classes, the methods of cultivation has also changed. Apart from tenant cultivation, now cultivation is done by employing free labourers too. Particularly in irrigated areas this dual system is more pronounced. The use of pumpsets for irrigation and the use of fertilisers and high-yielding variety seeds have increased. Here and there one can see tractors, increasing penetration of capital in agriculture through banks and 'blocks' is an ongoing process. Some of these changes may be mentioned here-

a) Decentralised approach to development: In 1993 the seventy third amendment act of Constitution of India was passed initiating a process of decentralised governance and the subject of agriculture as well as land relations was transferred to Panchayati Raj Institutions.

b) At the same time another process of liberalisation and globalisation of Indian economy was initiated and India became a member of World Trade Organisation in 1995. Market forces and competition, rather than MSP and Government subsidies are now to play a major role in the agriculture sector. The impact of some of these policies have been rather questionable for the Indian economy

c) There has been an intensification in the rural development programmes in India since 1980s and programmes directly targeting the rural poor, the bulk of which comes form the segment of agricultural labourers, have been launched. It is presumed that these programmes might have affected the agrarian relations and poverty status in the rural area.

Agrarian Relations and the Present Study

In view of these changes it is imperative that agrarian relations should be viewed against the backdrop of the total livelihood systems of different categories or classes of the farmers and must concentrate on the access to market and other supportive services, and also alongwith the access to land. As the competition increases with globalisation, three specific issues are to be looked into as core concepts of agrarian relation:

- Access to land and inputs
- Access to market, and
- Access to supportive development programmes.

So far we do not have much to report at the micro level in the post-reforms period on these issues of access to land, market and supportive services (including the rural development programmes) and their impact on agrarian relations and rural poverty. Against this background, there is a felt need to study the issues afresh taking a livelihood approach,. The present study attempts to fulfill this need.

Objectives of the Study

The study aims at-

a) Analysing the trends in state domestic product, agricultural growth, land-holding structure, and poverty trends in the study states in post-reforms period.

b) Assessing the nature of land markets, especially, leased land market and accessibility of land and market to the different categories of farmers with special focus on marginal farmers and small farmers.

c) Analysing the structure of agriculture, production and productivity levels and marketable surplus at the grassroots level and small and marginal farmers' participation in the market economy,

d) Assessing and analysing the livelihood systems of different categories of farmers, employment status and poverty among the farm households and analysing the role of labour market including migration in household economy of the small and marginal farmers, and

e) Identifying policy variables, especially from the point of land reforms, increasing opportunities for livelihood enhancement for the poor.

Hypotheses and Issues for Study

The major hypothesis/ issues examined in the study were:

a) Whether agrarian growth leads to changes in agrarian relations in general and improves accessibility to land and market by poor;

b) Weather such changes lead to structural changes in the rural economy in terms of (i) agricultural diversification and (ii) market accessibility, and

c) Whether SGRY as a major wage employment programme of rural development and infrastructure building has been able to alter the migration patterns and poverty levels.

Study Area and Coverage

Two states of Eastern India- Bihar and Orissa- are covered by the study for analysing the trends on economic growth, agricultural growth, rural poverty, employment pattern and landholding structure since the beginning of globalisation. In each State two districts, one agriculturally advanced and one comparatively backward were selected. The information and data about agriculturally advanced and backward districts were gathered from the agricultural departments of the respective states. Thus, total four districts Katihar and Begusarai from Bihar and Kalahandi and Bargad from Orissa were selected. In each of the districts again two blocks were selected on the same principle. In each of the blocks, two villages, one advanced and one relatively backward were covered for field level study. The criteria determined for the selection of villages were same as that of the State. The information about developed and backward village was gathered from the block office and was substantiated with the proportion of SC/ST population in the absence of any data on poverty status of the villages. Thus, total sixteen villages in eight blocks of four districts in the two States are covered under the study. State-wise districts, blocks and villages along with the sample size is given in the Table below-

Research Methodology and Analytical Framework

Sample: In the absence of relevant and up-to-date official information about the number of farmers in each category in the village, it has not been possible to select the representative sample. For example, the land revenue data available at the village level in Orissa belonged to the year 1972. From each of the 16 villages, five households belonging to large and medium farmers, ten households belonging to the category of small and semi-medium farmers and ten belonging to marginal farmers and agricultural labourers class were randomly selected. Thus, 25 households in each study village and total 400 farmers were covered under the study. Out of 400 farmers, 80 farmers belong to large and medium farmers category (20 per cent), 160 farmers belong to small and semi-medium farmers category (40 per cent) and 160 farmers belong to marginal farmers and agricultural labour category (40 per cent). The selection of the sample was based on the simple principle of availability.

Table 1: Study Area, Sample Frame and Size

State	Districts	Blocks	Villages	Sample Respondents		
				Large and medium	Small	Marginal farmers and agricultural labourers
Bihar	Katihar	Kodha	Digiri	5	10	10
			Tinpania	5	10	10
		Barsoi	Kharua	5	10	10
			Molanpur	5	10	10
	Begusarai	Bakhari	Gangaraho	5	10	10
			Chakarmeedh	5	10	10
		Begusarai	Dhaboli	5	10	10
			Suza	5	10	10
Orissa	Bargad	Attabera	Kharmunda	5	10	10
			Rujanmal	5	10	10
		Paikmal	Mandosil	5	10	10
			Laudmal	5	10	10
	Kalahandi	Junagadh	Chancharbatti	5	10	10
			Bondagauda	5	10	10
		Th Rampur	Kumudbahal	5	10	10
			Dhamanguda	5	10	10

Data: Both primary and secondary data were used for the study. Secondary data were collected mainly from various published sources like, Centre for Indian Economy, Statistical Abstracts from Department of Agriculture, Government of India, State and Districts' Statistical Abstracts from the two states and four districts, Rural Departments of Agriculture, and Panchayat Secretary's office. In addition, census data were also used for population and other related parameters. Village details were collected from the office of the Panchayat Secretary. Primary data were collected through structured schedules administered on the sample households.

Reference Period: The reference period of the study was 1991-2002 for the secondary data based study at state level. For the village level study, wherever five-year reference period was used, it was used with reference to date of interview, that is, December 2004-January 2005.

Analytical Plan: The analytical design of the study was as follows-

a) Trends analysis of state domestic product, agricultural growth, cropping pattern, landholding structure and labour absorption in the agriculture sector by using cross section data.

b) Analysis of land access to the different categories of the farmers according to quality of the land and nature of land market at the village and household level,

c) Analysis of agrarian structure, productivity levels, marketable surplus and participation of small and marginal farmers in the market at the village and household level by using primary data.

d) Analysis of the composition of income for assessing the livelihood pattern of the farm households with the help of primary data and the role of the wage employment programmes and migration in the livelihood system of the poor household and their accessibility to land, and

e) Analysis of the relationship between agrarian structure/ land relations and productivity levels.

Indicators

For analysing the primary data the following indicators were used:

I) Sample Profile

i) Farmers' Profile (district)

Age group
Educational Status
Secondary Occupation

II) Household Profile

a) Family size, male- female ratio, dependency ratio, literacy, average size of the family and average number of workers

b) Livestock

c) Ownership of land agricultural implements

d) Total and average household income

III) Agrarian Relation and Land Markets

i) Land ownership pattern (farmers' category-wise and village-wise)

ii) Access to land and irrigation (category-wise and, village-wise, district-wise)

iii) Leasing in and leasing out of land (irrigation status and farmers' category-wise)

iv) Sale and purchase of land- total land, land sold, land purchased (farmers' category-wise at district level)

IV) Agrarian Structure

i) Cropping pattern- farmers' category-wise and village-wise variations

ii) Crop values and diversification (crop-wise share in area and gross value).

iii) Production and productivity – physical and monetary (farmers' category-wise).

iv) High value crops' new crops and practices- identify the villages and farmers' category (in case of new crops- reasons, whether continuing or discontinued; if discontinued, reasons)

v) Constraints- village-wise and category-wise

V) Access to Market

i) Proportion of the crops marketed- farmers' category-wise (village and district)

ii) Source-wise access to marketing channels- farmers' category-wise and geographical location-wise (where it is sold)

iii) Market price and prices received by farmers.

VI) Income and Poverty Levels

i) Source-wise distribution of total household income

ii) Per household and per capita income at the village and district level according to the farmers' category

iii) Proportion of population below poverty line according to state specific poverty line.

VII) Employment

i) Number of adult members in the family (potential mandays in the family) and employment status- number employed and seeking employment

ii) Sectoral distribution of employed male and female members

iii) Number of male and females and number of days of employment (sector-wise and farmers' category-wise) and wages received (work out the averages).

iv) Awareness about government programmes and number of beneficiaries

VIII) Migration

i) Family size, number of workers and number migrated (farmers' category-wise)

ii) Type, causes and duration of migration

iii) Total remittances and use of remittances (farmers' category-wise) and proportion of remittances in total household income

iv) Direction of migration- number of migrants and average remittances

v) Other effects of migration (like education, learning of better agricultural practices or enhancement of skills, etc.).

Organisation of the Report and Chapter Scheme

Chapter two of the report deals with (a) concepts and main ingredients of the agrarian reforms in India in a historical perceptive, (b) brief profile of the study states, (c) trends in gross state domestic product, over the years, (d)) trends in agricultural growth and land ownership structure, (e) trends in poverty and employment in the selected states during the year under reference. The analysis is mainly in terms of secondary data and period of reference would be the beginning of the new economic policy (1991) till the latest year for which data are available. The analysis would confine to the two selected states, Bihar and Orissa and their comparison with the all India trends.

Chapters three and four of the report will look into the ground level realities in the States of Bihar and Orissa, respectively, based on the primary data collected from eight villages in Bihar and eight villages in Orissa, as mentioned in the study frame. Chapter five gives the major findings of the report and the policy implications.

Chapter - II

REGIONAL PERFORMANCE AND PROFILE OF STUDY AREA

State Profile

The States of Bihar and Orissa are two of the most resource-rich states in the country. Yet, these two states are amongst the poorest states in the country and often compete for the status of the most backward state. Nearly 90 per cent of the population in Bihar and 86 per cent of population in Orissa live in the rural areas compared to the national average of 70 per cent. The two States taken together account for 7.61 per cent of total area, 11.64 per cent of the population and 21.86 per cent of the poor in the country.

Despite the obvious backwardness of the two States, the demographic profile is quite different to each other. Bihar owns just 2.86 per cent of the area and more than eight per cent of the population of the country with a population density of 880 persons per square kilometer against the country average of 324 persons. On the other hand, Orissa accounts for 4.75 per cent of the area and 3.57 per cent of the population of the country. The population density in Orissa thus is comparatively lower than the country average. Similarly, in terms of literacy rate also, Orissa stands on much better footing compared to Bihar. The average literacy rate in Orissa (75.95 per cent) is in fact on par with the national average whereas in Bihar (47.53 per cent) it is appreciably below the national average. Sixteen per cent of the country's total poor live in Bihar alone (though the population share of the State is only eight per cent. Similarly, with less than four per cent of the national population, Orissa accommodates 6.50 per cent of the total poor of the nation.

The per capita income of Bihar, lowest in the country is just 32 per cent of the national average, whereas the per capita income of Orissa is just 53 per cent of the national average. A brief profile depicting the socio-economic status of the two States in comparison to the country as a whole is provided in Table 2.

Table 2 : States' Profile

	Bihar	Orissa	India
Area (lakh square km)	0.94 (2.86)	1.56 (4.75)	32.87 (100)
Population (in lakhs)	828.79 (8.07)	367.07 (3.57)	10270.15 (100)
Density (per square km.)	880	236	324
Urban population as per cent to total population	10.47	14.97	27.78
Decadal growth rate (1991-01)	28.43	15.94	21.34
Females per thousand males	921	972	933
Per cent scheduled castes/ scheduled tribe population (1991)	22.22	38.41	24.56
Total literacy rate	47.53	63.61	65.38
Male literacy rate	60.32	75.95	75.85
Female literacy rate	33.52	50.97	54.16
Main workers as per cent of population	25.4	26.08	@30.55
Agriculture workers as per cent of total workers	77.35	64.73	@58.40
Number of poor (1999-2000)	425.64	169.09	2602.5
BPL population as per cent of total population	42.6	47.12	26.12
BPL population as per cent of poor in India	16.36	6.50	100
CMIE Development Index	43	-	100
Per capita income (Rs. in 2001)	5108 (32)	8547 (53)	16072 (100)
Per capita foodgrain production (kg)	155.2	134.8	188.8
Per hectare consumption of fertilisers (kg)	98.6	36.92	87.58

(Contd....)

Table 2 : *(Contd...)*

	Bihar	Orissa	India
Gross irrigated area as per cent of gross sown area	47.3	28	38.92
Per cultivator net area sown (hectares)	0.7	1.3	1.3
Per capita gross output from industries (Rs. 2001)	883	3628	9111
Per capita consumption of electricity (KWPH)	10.68	71.69	107

Source: Centre for Monitoring Indian Economy Census, Government of India, 2001.

Economic Growth **:** The consistency of growth of state domestic product and consequent changes in the structure of the economy at the national level has been demonstrated by a number of research studies that have emerged in the post-reforms period. However, the case of Bihar and Orissa clearly demonstrate that not all the states were benefited by this upsurge in growth in Indian economy. Table 3 shows the growth rates of GDP for India and compares it with Bihar and Orissa. The growth rates at constant prices have decelerated in both the States whereas at all India level it has appreciated during the post-reforms period. Which means the divergence between the all India average level of development and the two eastern States has further enhanced. When we look at the growth rate of per capita state domestic product, the growth rate in case of Orissa slumps to even less than half of the national average. Thus, despite an overall better growth performance at all India level during the post-reforms period, the status of the two States in relation to all India further deteriorated.

Table 3 : Growth Trends in SDP in Pre and Post-Reforms Period

States	State Domestic Product		Per Capita State Domestic Product	
	1980-81 to 1990-91	1993-94 to 2001-02	1980-81 to 1990-91	1993-94 to 2000-01
Bihar	4.55	4.50	2.42	2.81
Orissa	4.20	3.22	2.39	2.00
GDP (National Accounts)	5.37	6.13	3.24	4.38

Source: Computed from CSO data on National Accounts Statistics.

Pattern of Agricultural Growth : An evaluation of the performance of the agriculture sector is not as simple as the performance of GDP or the organised manufacturing sector for the simple reason that agriculture is not only supplier of physical goods in the form of foodgrains and raw materials but also represents the vast environment in the country. When analysed in simple terms of growth, the agriculture sector in the country always represents instable picture due to its dependency on rainfall despite more than fifty years of Independence. Hence, most of the changes occurring in the productions sector of agriculture may not necessarily be ascribed to new economic policy as such. Yet, the fact remains that growth of agriculture sector during the post-reforms period has been more hazardous and fluctuating compared to the decade proceeding the reforms period. Table 4 shows the growth trends of agriculture and allied sectors since 1993-94 till 2001-2002 in terms of its composition during different sub- periods for India as a whole and Bihar and Orissa as individual states. The simple annual average growth rate of agriculture sector during the 1993- 2002 was 2.89 per cent for the country which suggests a drop in the growth rate of agriculture sector during the post-reforms period (Table 4).

Table 4: Growth Rates of Agriculture, Forestry and Fishing

States	94-95	95-96	96-97	97-98	98-99	99-00	00-01	2001-02	Average Growth Rate
Bihar	16.29	-21.65	33.37	-19.85	17.91	-6.76	1.30	1.14	2.72
Orissa	-1.15	1.56	-11.57	20.12	-1.54	-7.53	-6.01	11.26	0.64
India	5.01	-0.87	9.61	-2.43	6.20	0.31	-0.39	5.66	2.89

Source: Same as in Table 3.

Landholding Pattern and Accessibility to Land : Table 5 shows the per cent distribution of total landholdings and area operated by the group of small and marginal farmers in India and the two States. As against all India average of 78 per cent, small and marginal landholdings constitute 88 per cent of the total landholdings in Bihar and 80 per cent in Orissa accounting for nearly 47 per cent of the total area in each of the two States in the agricultural census year of 1990-91. The average size of holding of the small and marginal farmers during the same year was 0.65 hectares for all India but only 0.50 for Bihar. Although for Orissa the average size of holding of this group was marginally better compared to all India picture, as we have seen earlier, the access to irrigation in Orissa has been very poor. During the next five years the situation further deteriorated in Bihar as the average holding size dropped to below half hectare, although it improved slightly for the small and marginal farmers in Orissa.

Table 5 : Trends in Landholdings with Small and Marginal Farmers

	1990-1991			1995-96		
	Number (per cent to total)	Area operated (as per cent to total)	Average size of holding in hectares)	Number (as per cent to total)	Area operated (as per cent to total)	Average holding size
Bihar	87.98	47.46	0.50	90.92	55.13	0.46
Orissa	79.86	46.66	0.78	81.97	50.27	0.80
All India	77.96	32.20	0.65	80.31	36.02	0.63

Source: Computed from Agriculture Census, Government of India and Computed from CMIE Reports.

Trends in Poverty : Table 6 shows the trends in poverty in the study States during the post-reforms period. While at all India level as well as in Bihar the proportion of the rural population living below the poverty line declined during the post-reforms period, it actually increased in Orissa.

Table 6 : Trends in Poverty (1993 - 94 to 1999 - 2000)
(Percentage of Population Below the Poverty Line)

States	Rural		Urban	
	1993 – 94	1999 – 2000	1993 - 94	1999 – 2000
All – India	39.36	36.35	30.37	28.76
Bihar	64.41	58.85	45.03	45.10
Orissa	59.12	62.67	36.99	34.27

Source: Sundaram (2001).

Study Districts- Bihar

In the absence of data on per capita district domestic product and gross value of agriculture produce, poverty ratio has been taken as proxy to development/ underdevelopment status. On an average, 58 per cent of the State population is below poverty line. We have selected two districts, Begusarai as underdeveloped district where the poverty situation is much worse compared to State average, more than 65 per cent of the population in the district is below poverty line according to the latest BPL survey. Similarly, Katihar has been selected as (comparatively) developed district where the population below poverty line is slightly less than 50 per cent, compared to State's average of 58 per cent.

Socio-economic Features : The two districts account for nearly same proportion of the area and population of the State. Begusarai accounts for 1.10 per cent of the State area and four per cent of the population. The pattern of male- female ratio, however, in both the districts is very different compared to the State's pattern. As against 887 females per 1000 males in the State, the same is 912 in Begusarai and 918 in Katihar. In terms of literacy, the status of Begusarai is slightly above the State average, whereas in Katihar the average literacy rate is significantly below the State average. The CMI Relative Index of Development for both the districts is below the State average. The State Relative Index of Development (43) itself is less than half of the all India average and theses indices in the two selected districts are even still lower (Table 7).

Table 7 : Socio-economic Features of Study Districts in Bihar

	Begusarai	Katihar	Bihar
Area (sq. km.)	1918 (1.10)	3057 (1.76)	173877 (100)
Total population	2349366 (4.00)	2392638 (4.07)	58788068 (100)
Male	1228874	1246872	31160812
Female	1120492	1145766	27627256
Females per 1000 males	912	919	887
Density	1225	783	338
Literacy rate	48.55	35.51	47.43
Male	59.71	45.51	60.32
Female	36.21	24.03	33.57
Number of rural households	334992	374984	15862585
Households below poverty line	218932	184218	9214840
Per cent of households below poverty line	65.35	49.13	58.10
Relative index of development	39	31	43

Source: District Profiles, CMIE, 2000.

Workers' Classification : Work pattern-wise both the districts are primarily agrarian as 67 per cent of the total workforce in Begusarai is directly dependent on agriculture either as cultivator (19 per cent) or as agriculture labourer (48 per cent). Similarly, 68 per cent of the workers in Katihar draw their livelihood from agriculture, 28 per cent as cultivators and 40 per cent as agricultural labourer. Thus, although overall dependency on agriculture in both the districts is nearly the same, the nature of dependency and pattern of employment within the agriculture sector itself is quite different. The dependency on agricultural labour is slightly lower in the developed district and more people are engaged in self-cultivation (Table 8).

Table 8 : Workers' Classification

Workers	Begusarai	Katihar
Total main workers	745457	573536
Cultivators	139461 (19)	159733 (28)
Agricultural labourers	356068 (48)	232037 (40)
Household industry	52624 (7)	9128 (2)
Others	197304 (26)	172638 (30)

Census, Government of India, 2001.

Land Use and Irrigation : Although the dependency on self-cultivation is higher in the Katihar district, the land available for the workers is comparatively lesser as only 51 per cent of the total geographical area is under cultivation compared to 74 per cent of the district land under cultivation in Begusarai (Table 9). However, since the population density in Katihar is nearly half of that of Begusarai, self-cultivation is more prevalent, although it has also resulted in smaller operational holdings as more than 90 per cent of the holdings in the district is below one hectare compared to 86 per cent in Begusarai (Table 10). The irrigation coverage in both the districts is fairly high when compared to the State average of nearly 48 per cent. Sixty per cent of the net cultivated area in Begusarai and 66 per cent of the net cultivated area in Katihar is under irrigation. Most of the land, however gets irrigation during one season only as the gross cropped area under irrigation is fairly low in both the districts. One primary reason for this has been the high cost of irrigation as oil engines are the main source of power for irrigation. In spite of low irrigation of gross cropped area, cropping intensity is quite high in Katihar, mainly because of the Diara lands.

Table 9: Land Use and Irrigation : Bihar

	Begusarai	Katihar
Total area	187968	291349
Net sown area (hectares)	138489	147127
Net sown area as per cent of reporting area	74	51
Net irrigated area	82892	97292
Net irrigated area as per cent of net sown area	60	66
Gross sown area	148526	247753
Gross irrigated area	71422	89243
Gross irrigated area as per cent of gross sown area	48	36
Cropping intensity	107	168
Fertiliser consumption per hectare (kg)	279	226

Source: Department of Agriculture, Government of Bihar, 2003.

Table 10: Distribution of Holdings : Bihar

	Begusarai	Katihar
No. of holdings	172948	218083
Less than one hectare	156684	201883
Between one and two hectares	36575	10408
More than two hectares	35657	5792
Small and marginal farmers as per cent of total	86	93

Source: CMIE (Volume on Agriculture), 2002.

Study Villages- Bihar : As discussed earlier, eight villages from the two districts were selected for the study. Out of the eight villages, four were developed villages and four underdeveloped villages (Table 11).

Table 11: Study Villages : Bihar

District	Begusarai	Katihar
Developed Villages	Gangaraho	Digiri
	Suja	Molanpur
Underdeveloped Villages	Chakarmeedh	Tinpania
	Dhaboli	Kharua

Demographic Profile and Poverty : Table 11 gives a general profile of the villages in terms of area, population, male-female ratios, literacy rate and poverty level. The eight villages taken together covered 4926 hectares of area and 18285 population. The male-female ratio in all the villages was quite adverse. Overall literacy rate was low at 36 per cent. Literacy rate was found to be lowest in Gangaraho (19 per cent), one of the underdeveloped villages in Begusarai followed by Dhaboli (27 per cent), another underdeveloped village in the same district. The overall literacy rate at 36 per cent was much better in the developed district (Katihar). Except in one village (Molanpur), overall literacy rate in the developed district was higher when compared to even the highest literacy rate in the underdeveloped district.

No significant difference was found in the poverty levels in the villages of the developed and underdeveloped districts as 70 per cent of households in Begusarai and 69 per cent of households in Katihar were reported to be below poverty line (although at overall district level the difference in poverty levels is quite significant- Table. 12.

Occupational Pattern : Agricultural labourers dominate the occupational pattern in all the villages. However, the labour force working as agricultural labourers is much high in the underdeveloped villages when compared to the developed villages. Agricultural labourers as percentage of total workforce were more than 70 in two villages (both underdeveloped villages) and more than 60 per cent in one developed village in Begusarai (Table 13). In Katihar, this proportion was nearly 70 per cent in Tinpania (underdeveloped village) and 48 per cent in Kharua (another underdeveloped village). However, regardless of the development status, the proportion of agricultural labourers was high in all the villages except for Digiri and Gangaraho. On the other hand, the proportion of workforce engaged

Table 12: Demographic Profile and Poverty : Bihar

	Ganga-raho	Chakhar-meedh	Dhaboli	Suja	Total	Kharua	Molan-pur	Tinpa-nia	Digiri	Total
Area (hect)	600	400	1051	1338	3389	169	608	2792	1357	4926
Population	2800	6953	12700	5726	28179	1443	3322	10007	3513	18285
Males	1525	3958	6737	3036	15256	778	1743	5765	1854	10140
Females	1275	2995	5963	2690	11970	665	1579	4242	1659	8145
Literacy rate	19	29	27	33	28	48	29	32	43	36
Male literacy rate	26	36	35	48	37	58	42	47	52	48
Female literacy rate	11	21	18	16	17	36	14	12	25	20
Male-female ratio	836	757	885	886	785	855	906	736	895	803
SC	400	1785	1455	1407	5047	374	673	3240	775	5065
SC as % of total	14.29	25.67	11.46	24.57	17.91	25.92	20.26	32.38	22.06	27.70
ST	0	455	0	0	455	15	0	101	382	498
No. of households	412	812	998	1333	3555	200	487	1102	528	2317
No. of BPL HH	244	535	545	1155	2479	135	437	667	356	1595
BPL%	59	66	55	87	70	68	90	61	67	69

Compiled from Information furnished by Panchayat Secretary and Block Development Office, 2005.

in self-cultivation was higher in the developed villages. After agriculture, migration is the most dominant source of livelihood in most the villages, followed by some trading activities.

Land Use and Irrigation : One very significant observation that can be made from the land use pattern is that cultivated land as per cent of total land is quite high in the villages of underdeveloped blocks. For example, in Kharua and Molanpur, both situated in the underdeveloped block (Barsoi) in Katihar, more than 80 per cent of the village land is under cultivation. In all other villages, more than 60 per cent of the village area is under cultivation and ranges between 60 and 78 per cent. Except for one village (Chakarmeedh) in Begusarai, the net area irrigated is above 50 per cent and ranges between 52 to 68 per cent. Cropping intensity vary from village to village but in general seem to be better in the villages of underdeveloped district compared to the villages in the developed district. Highest cropping intensity was found in Dhaboli (155) followed by Suja in the same district. Cropping intensity in both the developed villages (Digiri and Molanpur) in Katihar (developed district) and Gangaraho (in Begusarai) was found to be on the lower side (Table 14).

Cropping Pattern : Table 15 sums up the main village crops in order of importance. Paddy dominated the cropping pattern in all the villages. Wheat and maize were second important crops for the villages in Begusarai district. Thus, cropping pattern in the underdeveloped district is by and large, traditional and represents, typical subsistence economy. Oilseeds (mainly mustard) and pulses are grown mainly for domestic consumption. Paddy and vegetables are the most important marketed cash crops for all the villages. Potato, tomato, brinjal, chilies, cauliflower, cabbage, etc. are some of the vegetables grown in the villages. Wheat is produced on commercial as well as for self-consumption in Begusarai. Another important-market crop grown in the villages of Begusarai is maize. Sugarcane was found in only two villages, both from Begusarai.

The cropping pattern is less diversified in the villages of the developed district, Katihar. Banana and jute as cash crops occupy an important place in the economy of the selected villages.

Table 13 : Occupational Profile : Bihar

Total workers	Kharua	Molanpur	Tinpania	Digiri	Gangaraho	Chakharmeedh	Dhaboli	Suja
Cultivators	95	204	1376	1138	300	400	834	45
	(20.30)	(20.71)	(27.51)	(62.39)	(49.18)	(15.50)	(21.45)	(24.27)
Agricultural labourer	225	645	3500	522	200	2000	2872	1418
	(48.08)	(65.48)	(69.97)	(28.62)	(32.79)	(77.52)	(73.95)	(63.13)
Household/cottage industry	11	41	33	0	0	30	0	0
	(2.35)	(4.16)	(0.66)			(1.16)		
Small/medium/large industry	0	0	0	0	0	0	0	0
Construction works	11	21	23	0	12	28	44	50
	(2.35)	(2.13)	(0.46)		(1.97)	(1.09)	(1.13)	(2.23)
Trade/commerce	21	11	35	17	22	11	43	111
	(4.49)	(1.12)	(0.70)	(0.93)	(3.61)	(0.43)	(1.11)	(4.94)
Service	55	19	12	37	27	48	21	30
	(11.75)	(1.93)	(0.24)	(2.03)	(4.43)	(1.86)	(0.54)	(1.34)
Migrants	50	44	23	110	49	63	75	92
	(10.68)	(4.47)	(0.46)	(6.03)	(8.03)	(2.44)	(1.93)	(4.09)
Total	468	985	5002	1824	610	2580	3889	2246

Source: Same as in Table 12.

Table 14 : Land Use Pattern and Irrigation Status : Bihar

	Kharua	Molanpur	Tinpania	Digiri	Gangaraho	Chakarmeedh	Dhaboli	Suja
Total area	169	608	2792	1357	600	400	1051	1338
Area under forests	0	0	0	15	0	0	0	0
Barren and uncultivable land	14	80	0	0	0	0	212	216
Area under non-agricultural uses	4	17	212	27	9	18	13	88
Fallow and cultivable waste	0	0	0	9	10	7	78	38
Grazing and pasture land	3	11	19	28	8	3	12	13
Area under population/horticulture	3	30	85	26	150	0	38	80
Area under cultivation	148	528	1755	986	497	250	631	1041.27
Net cropped area as per cent of total	88	87	63	73	83	63	60	78
Gross cropped area	192	668	2191	1200	570	355	981	1360
Cropping intensity	130	127	125	122	115	142	155	131
Net irrigated area	92	285	982	540	312	112	427	545
Net irrigated area as per cent of net cropped area	62	54	56	55	63	45	68	52
Gross irrigated area	107	306	1127	600	376	119	498	712
Gross irrigated area as per cent of gross cropped area	56	46	51	50	66	34	51	52

Source: Village Revenue Official, 2005.

Table 15: Main Village Crops : Bihar

Village	Food Crop	Cash Crop
Gangaraho	Paddy, wheat, maize, oilseeds, pulses	Vegetables-potato, brinjal, chilies, cauliflower
Chakarmeedh	Paddy, wheat, maize, oilseeds, pulses	Sugarcane, vegetables
Dhaboli	Paddy, wheat, maize, oilseeds	Sugarcane, vegetables-potato, tomato, cauliflower, cabbage
Suja	Paddy, wheat	Maize, vegetables
Kharua	Paddy	Jute
Molanpur	Paddy, wheat, mustard	Jute, vegetables
Tinpania	Paddy, wheat	Banana
Digiri	Paddy, oilseeds	Banana, vegetables

Source: NIRD Field Survey, 2005.

Study Districts- Orissa

Two districts, one developed (Bargad) and another underdeveloped (Kalahandi) were selected in Orissa State based on indicators a) area under irrigation and b) Gross sown area. The district Bargarh was selected as developed district and Kalahandi was selected as underdeveloped district based on the above indicators. Two blocks, one developed and another underdeveloped were selected from each district and two villages were selected from each block using the same criteria. The sample blocks and villages selected for the study are given in Table 16.

Table 16 : Study Area-Orissa

District	Block	Village
Bargad(DD)	Attabira (DB)	Khurmunda (DV) Rujanmal (UDV)
	Paikmal (UDB)	Mandosil (DV) Laudmal (UDV)
Kalahandi (UDD)	Junagarh (DB)	Chancharabatti (DV) Bondaguda (UDV)
	T. Rampur(UDB)	Damanguda (DV) Kumudbahal (UDV)

Note: DD Developed district : UDD: Underdeveloped district
DB: Developed block
UDB: Underdeveloped block: DV: Developed village
UDV: Underdeveloped village

District Profile- Orissa : To assess the land utilisation pattern, the indicators like barren and uncultivable land, net sown area, area under irrigation and cropping intensity were used. The net irrigated area of the underdeveloped district is close to the State with 18.7 per cent compared to the Bargad district where it is 32 per cent. The net sown area of the State is 37.4 per cent of the geographical area. Whereas, the net sown area of the underdeveloped district is close to the State with 42.5 per cent compared to the developed district where it is is 56.8 per cent of the total geographical area. The land utilisation pattern of Orissa State appeared to be closer to the underdeveloped district i.e. Kalahandi (Table 17).

Table 17: Land Utilisation and Agricultural Characteristics : Orissa

Land Use	Orissa	Bargad	Kalahandi
1. Land utilisation (acres)			
a. Geographical area	15571	584(3.7)	836(5.3)
b. Current fallow	430(2.76)	13(2.2)	15(1.7)
c. Net sown area	5829(37.4)	332(56.8)	365(42.5)
d. Barren and uncultivable land	843(5.4)	15 (2.5)	42(5.02)
2. Number of operational holdings	39664	1765	1687
a. Large and medium holdings	1711(4.3)	141(7.9)	142(8.4)
b. Small and semi-medium	16501(41.6)	847(47.9)	819(8.4)
c. Marginal	21452(54)	777(44.0)	726(43.0)
d. Agricultural labour	5001075	2247022(4.9)	312220(6.2)
e. Cultivators	4238847	200542(4.7)	184173(4.3)
f. Cropping intensity	—	139	111
g. Irrigated area(000 ha)	2245(17.5)	188(32)	157(18.7)
3. Total population	36706920	1345601(3.6)	1334372(3.6)
4. Consumption of chemical fertiliser (N + P + K) (000 mt)	319.21	39.46(12.3)	20.15(6.3)

Source : Statistical Handbook of Orissa - 2002.

The number of operational holdings of the two districts is around 14 per cent each of the total number of operational holdings. Among the total holdings, large and medium holdings were around 4 per cent for the State. Whereas it is 8.4 per cent for the underdeveloped district and 7.9 per cent for the developed district. The percentage of small and medium holdings for both the districts is more than the State's present 9 total holdings, whereas, it is less for marginal holdings. The consumption of chemical fertilisers is more in the developed district with 121.3 per cent of the State's total consumption and less in the underdeveloped district with 6.3 per cent of the State's total consumption.

Profile of the Study Villages- Orissa

The population below poverty line was more in the villages of the developed block in Attabira when compared to the underdeveloped block i.e. Paikmal of Bargad district (Table 18). Similar was the situation observed in Kalahandi district with the BPL population more in the developed block i.e. Junagarh when compared to the underdeveloped block i.e. T. Rampur. Among the villages also, except in the developed block i.e. Attabira, the population below the poverty appeared to be more in the developed village than the underdeveloped village. Among the total number of households, the number of cultivated holdings was more in the underdeveloped district i.e. Kalahandi. In the Bargad i.e. the developed district, the cultivated holdings were more in the developed block and also developed villages when compared to the underdeveloped blocks and villages. The situation is reverse in the underdeveloped district. i.e. Kalahandi where the cultivated holdings were more in the underdeveloped block and villages when compared to the developed block and villages. In general, the position of livestock was more in the developed villages and blocks when compared to the underdeveloped villages and blocks.

Table 18: Demographic Features : Orissa

Village	Total population	Population below poverty line *	Total households*	No. of cultivator house holds**	Livestock	Agricultural labour
Bargad						
Khurmunda	3600	1188 (33)	450	280 (62.2)	754	112
Rujanmal	850	374 (44)	106	42 (39.6)	250	48
Laudmal	2710	623 (23)	330	81 (24.5)	819	112
Mandosil	4089	1308 (31)	510	119 (23.3)	700	236
Kalahandi						
Chancharabatti	815	179 (22)	120	70 (58.3)	875	40
Bondaguda	389	101 (26)	93	84 (90.3)	150	13
Kumudbahal	222	42 (18)	72	70 (97)	460	-
Dhamanguda	450	104 (23)	50	48 (96)	350	-

Source: Village Statistics compiled from village secretary, 2005.
*Figures in parentheses show per cent to total population.
** Figures in parentheses show per cent of households engaged in cultivation.

Land Utilisation : The net sown area of the underdeveloped district i.e. Kalahandi is less with 29.1 per cent of the geographical area when compared to the developed district where it was 42.7 per cent (Table 19). In the developed district i.e. Bargad, the net sown area was more for the developed villages when compared to the underdeveloped villages. Similar was the case with the underdeveloped district where the net sown area was more for the developed villages and blocks. Land utilisation appeared to be in favour of the underdeveloped district than the developed district with the cropping intensity of 196 and 183 per cent, respectively. Except the Attabira block i.e. the developed block of the developed district, the cropping intensity was more for the underdeveloped blocks and underdeveloped villages when compared to the developed blocks and developed villages. The area under CPR's was more in the developed villages of all the blocks.

Table 19 : Land Utilisation Pattern of the Study Villages : Orissa

Area	Geographical Area	Net Sown Area	Gross Sown Area	Cropping Intensity	Area under Common Property Resource
Khurmunda	2132.46	1535.04(72)	3125	203	320.4 (15.02)
Rujanmal	891.46	26.73(3)	26.73	100	89.46(10.01)
Laudmal	1461.62	380.02 (26)	790.81	207	12(0.82)
Mandosil	2963.78	1244 (42)	1901.62	152	116(3.91)
Bargad	7449.32	3186.57 (42.7)	5844.16	183	537.86(7.22)
Chancharabatti	452.9	388 (82)	694.79	178	10.77(2.38)
Bondaguda	998.24	189.66 (19)	380.51	201	14.47(1.45)
Kumudbahal	819.54	108.26 (13)	241.62	223	65(7.93)
Dhamanguda	1070.79	287.17 (26)	596.89	207	109(10.18)
Kalahandi	3341.47	973.09 (29.1)	1913.81	196	199.24(5.96)

Source: Village statistics compiled from village secretary.

Note: Figures in parentheses show per cent to total geographical area.

Landholding Pattern : The total number of cultivated holdings was more in the developed district when compared to the underdeveloped district (Table 20). Among the total cultivated holdings, the number of large and medium holdings was more in the developed villages and small farmers' holdings were more in the underdeveloped villages except for the developed block of the underdeveloped district i.e. Junagarh, where the percentage of small farmers' holdings were more in the developed village than the underdeveloped village. The cultivated holdings of marginal farmers was also more in the underdeveloped village than the developed village in all the blocks, except T Rampur block where the developed village has more of marginal holdings.

Table 20 : Landholding Pattern and Number of Holdings of the Study Villages : Orissa

	Number of holdings (dry & wet)			
	No. of cultivated holdings	Large farmers	Small farmers	Marginal farmers
		N	**N**	**N**
Khurmunda	280	31 (11.07)	80 (28.5)	169 (60.35)
Rajanmal	42	-	15 (35.7)	27 (64.2)
Laudmal	81	9 (11.1)	34 (41.9)	38 (46.9)
Mandosil	119	79 (14.2)	36 (30.2)	66 (55.4)
Bargad	522			
Chancharabatti	70	12 (17.1)	23 (32.8)	35 (50)
Bondaguda	84	7 (8.3)	19 (22.6)	58 (69.04)
Kumudbahal	70	6 (8.5)	28 (40)	36 (51.4)
Dhamanguda	48	8 (16.6)	26 (54.1)	14 (29.1)
Kalahandi	272			

Source: Village statistics compiled from village secretary.

Note: Figures in parentheses show per cent to total of the village.

Land Under CPR : The land under common property resources was being used for different purposes in all the villages (Table 21). In general, it was being cultivated partly by marginal farmers and landless agricultural labour in all the villages. In the developed village of the developed block and district i.e. Khurmunda, it was taken up for digging the canal. The remaining land was being utilised for cultivation. Whereas, in the other developed village i.e. Mandosil it was converted to a fishpond. A fishermen association was formed with around 75 members. Among them, some were small and marginal farmers also. The land was kept fallow in one underdeveloped village (Rujanmal) and it was leased by the gram panchayat @ Rs.300 annum to a BPL farmer in another underdeveloped village of the developed district. Whereas it was being utilised for cultivation in both the villages of the underdeveloped block of the underdeveloped district. No change in the status of CPR was observed in all the villages except in two developed villages where in one village, the CPR were gradually owned up by the landless and in another developed village it was given for the construction of house-sites. This shows that in all the villages CPR were under threat due to accommodation for cultivation or for other livelihood purposes.

Table 21: Land under CPR of the Study Villages : Orissa

	Land is used for	Decrease / increase	Reasons
Khurmunda	a. Partly for canal (98 acrs) b. Partly for cultivation	Decreased	Occupied and cultivated by marginal farmers
Rujanmal	Fallow	No change	—
Laudmal	Leased to GP	No change	—
Mandosil	Converted to fish pond	No change	Livelihood to landless and marginal farmers
Bargad	—	—	—
Chancharabatti	Na	Na	Na
Bondaguda	Na	Na	Na
Kumudbahal	Cultivation	No change	Cultivation
Dhamanguda	Cultivation	Decreased	8 acres to 63 people for house-site
Kalahandi	—	—	—

Occupation: Dependency on Wages : The number of families subsisting on wage earnings was more in the developed district than the underdeveloped district (Table 22). In both the villages of the underdeveloped block of the underdeveloped district i.e. Damanguda and Kumudbahal, there were no families that subsist exclusively on wage earnings. The main source of wage in all the villages is agriculture followed by government employment programmes. Some assets like roads were created through the wage employment programmes.

Table 22 : Occupation – Dependency on Wages : Orissa

Villages	No. of farms subsist on WE (HH)	Source of wage labour	Assets created
Khurmunda	112	Agriculture wages within & outside the village	-
Rujanmal	48	Mostly agrl. wages outside the village	-
Laudmal	42	Agrl. wages &JRY, SGRY	Road
Mandosil	236	Agrl. wages	-
Bargad	438		
Chancharabatti	40	Agrl. work GEP	Link Road
Bondaguda	13	Agril. wages outside the village	-
Kumudbahal	-	-	-
Dhamanguda	-	-	-
Kalahandi	53		

* JRY: Jawahar Rojgar Rojana , WE : Wage Earnings;
SGRY : Swarnjayanthi Grameen Rojgar Yojana; HH- Households.

Migration : Migration of labour was observed in all the villages except the two villages of the underdeveloped block of the underdeveloped district i.e. Damanguda and Kumudbahal villages of T.Rampur block of Kalahandi district (Table 23). In these two villages, almost all the households were cultivating the land. Their source of livelihood is only agriculture. Apart from their own land, they also cultivate the land around the village which belongs to CPR and also part of the forest land. This shows that apart from the regular own lands, they involve in shifting cultivation. Migration was not observed in these two villages. Whereas, in the other villages both seasonal migration for agricultural operations and temporary or short-term migration was observed for specialised operations like brick making etc. For seasonal migration the place of migration is short distance i.e. within the district or the neighbouring district. Whereas, for specialised operations, the migration was for other states like MP, AP and UP. The remittances were used mainly to pay back the loans taken for health or marriage purposes followed by creating assets like land and house etc.

Table 23: Migration Pattern : Orissa

Villages	Type of migration	Place & distance of migration	Reasons	Duration	Remittances are used for
Khurmunda	Seasonal	Short distance	Agrl. Operations	120 (days)	Creating assets like houses, except land & credit
Rajanmal	Seasonal & temporary	Short distance	Agrl. Operations	120 (days)	Livelihood
Laudmal	Temporary	Ayodya, AP, UP, Bargad	Brick making	360 days	Livelihood, assets like house and land
Mandosil	Seasonal	Short distance	Agrl. Operations	120 days	Credit/ expenditure
Bargad					
Chancharabatti	No migration	-	-	-	Credit
Bondaguda	Seasonal	Short distance	Agrl. Operations	100 days	
Kumudbahal	No	No	No	No	No
Dhamanguda	No	No	No	No	No
Kalahandi					

Chapter - III

AGRARIAN RELATIONS AND RURAL POVERTY IN BIHAR

Profile of Sample Farmers

Age Groups: Majority of the sample farmers in both the districts fall within the age group of 35-59 years. Eighty per cent of the medium and large farmers are in this age group in Begusarai and 75 per cent in Katihar. The distribution of small farmers in this age group is slightly different in the two districts. Sixty five per cent of small farmers in Begusarai and 50 per cent in Katihar belong to this age group. Similarly, 70 per cent of the marginal farmers in Katihar and 50 per cent of the farmers in Begusarai belong to this age group. Overall, 62 per cent of the sample farmers in Begusarai and 65 per cent in Katihar are in the age group of 35-59 years (Table 24).

Only ten per cent of the farmers in Begusarai and 19 per cent in Katihar belong to the age group of 25-34 years. However, if we take the number of farmers who are below 25 (in the age group of 18-25) years also, the proportion of young farmers in Katihar becomes fairly high in case of small farmers. Nearly one-third of the small farmers in Katihar are found to be below 35 years of age. The same per centage for large farmers is 20 and for marginal farmers 18. None of the farmers in Begusarai are in this age group. This difference seems to be mainly because of the nature of agriculture in the two districts. As we will see later, agriculture in Katihar is fairly diversified and commercialised. Thus, younger generation is also involved in agriculture in case of the farmers who have economically viable landholdings.

The proportion of marginal farmers above the age group of 60 years is very high in Begusarai (43 per cent) whereas the same is just 11 per cent in Katihar. Overall, we find that 64 per cent of the total sample farmers in the State are in the age group of 25-39, 20 per cent in the age group of 60 years and above and 18 per cent in the age group of 18-25 years (Table 24).

Educational Status: Significant differences in the literacy rates of different categories of the farmers are found in the two districts (Table 25). Thirty per cent of the sample farmers in Begusarai and 16 per cent in Katihar are totally illiterate.

Thirty per cent of the farmers in Katihar are educated up to secondary level followed by 19 per cent up to middle level and 13 per cent up to graduation level. Ten per cent of the total farmers in the district are just literate. Thus, educational status of the farmers is found to be much better in Katihar compared to Begusarai where 21 per cent of the total farmers are just literate, 18 per cent are educated up to secondary level and 17 per cent up to middle level. Only eight per cent of the farmers were found to be educated beyond secondary level.

Table 24 : Distribution of Farmers According to Age Group : Bihar

Age-Group	Begusarai				Katihar				Bihar			
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
18-25	0	0	0	0	1	2	2	5	1	2	2	5
25 to 34	2	5	3	10	3	11	5	19	5	16	8	29
35 to 59	16	26	20	62	15	22	28	65	31	48	48	127
60	2	9	17	28	1	5	5	11	3	14	22	39
Total	20	40	40	100	20	40	40	100	40	80	80	200
												Per cent Distribution
18-25	0	0	0	0	5	5	5	5	3	3	3	3
25 to 34	10	13	8	10	15	28	13	19	13	20	10	15
35 to 59	80	65	50	62	75	55	70	65	78	60	60	64
60	10	23	43	28	5	13	13	11	8	18	28	20
Total	100	100	100	100	100	100	100	100	100	100	100	100

Table 25 : Distribution of Farmers According To Educational Status : Bihar

	Begusarai				Katihar				Bihar			
	LF	MF	SF	Total	LF	MF	SF	Total	LF	MF	SF	Total
Illiterate	1	16	13	30	3	9	4	16	4	25	17	46
Literate	5	9	7	21	2	5	3	10	7	14	10	31
Up to primary	2	1	2	5	3	4	4	11	5	5	6	16
Middle school	4	6	7	17	3	6	10	19	7	12	17	36
Secon-dary	6	3	9	18	8	12	10	30	14	15	19	48
Degree	1	4	2	7	1	4	8	13	2	8	10	20
Post-gra-duate	1	1		2			1	1	1	1	1	3
Total	20	40	40	100	20	40	40	100	40	80	80	200
												Per cent Distribution
illiterate	5	40	33	30	15	23	10	16	10	31	21	23
Literate	25	23	18	21	10	13	8	10	18	18	13	16
Up to primary	10	3	5	5	15	10	10	11	13	6	8	8
Middle school	20	15	18	17	15	15	25	19	18	15	21	18
Secon-dary	30	8	23	18	40	30	25	30	35	19	24	24
Degree	5	10	5	7	5	10	20	13	5	10	13	10
Post-gra-duate	5	3	0	2	0	0	3	1	3	1	1	2
Total	100	100	100	100	100	100	100	100	100	100	100	100

Secondary Occupation: Table 26 shows the occupation-wise distribution of the sample farmers. Fifty three per cent of sample farmers in Begusarai and 57 per cent in Katihar were totally dependent on agriculture and had no secondary occupation. The dependency on agriculture, as expected is fairly high in case of large farmers (85 per cent in Begusarai and 75 per cent of large farmers in Katihar are totally dependent on agriculture as livelihood). Two large farmers (10 per cent of total large farmers in the district) were engaged as agricultural labourers also besides their own cultivation. Forty eight per cent of the small farmers in Begusarai and 66 per cent in Katihar are found to be totally dependent on own agriculture. The dependency on own agriculture is fairly low in case of marginal farmers. Only 38 per cent of farmers in Katihar and 48 per cent in Begusarai are totally dependent on own cultivation.

Thirty three per cent of the small farmers in Begusarai and 23 per cent in Katihar are also working as agricultural labourers. The proportion of small farmers working as agricultural labourers in the developed district is, therefore, lower when compared to the underdeveloped district. More significantly, the proportion of small farmers working as agricultural labourers in Begusarai is even higher to that of marginal farmers.

As against 33 per cent of small farmers, 30 per cent of the marginal farmers are working as agricultural labourers in Begusarai. Compared to this, only 13 per cent of small farmers and 24 per cent of marginal farmers are working on others' fields as agricultural labourers.

Another area of significance from the point of view of secondary occupation is small business. Ten per cent of large farmers in Begusarai and 15 per cent of them in Katihar are having small business as secondary occupation. Fifteen per cent of marginal farmers and eight per cent of small farmers are having small business or informal trading activities as secondary occupation in Begusarai.

Taking an overall view, 36 per cent of the sample marginal farmers and 23 per cent of small farmers are working as agricultural labourers. Only 55 per cent of the total farmers are full time cultivators. Rest of the 45 per cent are having secondary occupations as support activities. The most prominent secondary occupation is agricultural labour (25 per cent) followed by small business (12 per cent). Nearly six per cent of the farmers resort to temporary migration for supplementing their household income. Only two per cent of the total farmers are in the service sector.

Table 26 : Distribution of Farmers According to Secondary Occupation : Bihar

	None	Agricultural Labour	Artisan	Small business	Temporary migration	Service	Total
Begusarai							
LF	17	0	0	2	0	1	20
SF	19	13	1	3	3	1	40
MF	17	12	1	6	4	0	40
Total	53	25	2	11	7	2	100
Katihar							
LF	15	2	0	3	0	0	20
SF	27	5	0	5	2	1	40
MF	15	17	0	5	2	1	40
Total	57	24	0	13	4	2	100
Bihar							
LF	32	2	0	5	0	1	40
SF	46	18	1	8	5	2	80
MF	32	29	1	11	6	1	80
Total	110	49	2	24	11	4	200
Per cent Distribution							
Begusarai							
LF	85	0	0	10	0	5	100
SF	48	33	2.5	8	8	3	100
MF	43	30	2.5	15	10	0	100
Total	53	25	2	11	7	2	100
Katihar							
LF	75	10	0	15	0	0	100
SF	68	13	0	13	5	3	100
MF	38	43	0	13	5	3	100
Total	57	24	0	13	4	2	100
Bihar							
LF	80	5	0	13	0	3	100
SF	58	23	1	10	6	3	100
MF	40	36	1	14	8	1	100
Total	55	25	1	12	6	2	100

***Profile of Sample Households**:* The household profile of the sample households is covered under three broad headings-

a) Age structure and composition of total population,

b) Literacy status among the farming households, and

c) Ownership over livestock and agricultural implements.

***Age Structure and Composition of the Total Population**:* Two thousand and four persons are covered by the two hundred families in the study area with an average population of nearly ten persons per household. Fifty six per cent of the population are males and 44 per cent are females. Not much variation is found across the districts and among the farmers' categories with regard to average population per family. Thirty nine per cent of the population is below 14 years of age and another 14 per cent are above 60 years. Thus, the dependency ratio is quite high in the State. Only marginal differences are found in the dependency ratio across the districts and farmers' categories. The average work participation rate is 44 persons per 100 persons (Table 27).

Table 27 : Demographic Profile : Bihar

	Begusarai				Katihar				Overall			
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Total children	82	151	142	375	74	167	175	416	156	318	317	791
Total adults	94	191	171	456	89	197	191	477	183	388	362	933
Total old	33	59	44	136	31	53	60	144	64	112	104	280
Total male	116	230	200	546	103	227	245	575	219	457	445	1121
Total females	93	171	157	421	91	190	181	462	184	361	338	883
Total population	209	401	357	967	194	417	426	1037	403	818	783	2004
Average family size	10	10	9	10	10	10	11	10	10	10	10	10
Work participation rate	45	47	48	47	46	47	45	46	45	47	47	47

(Contd....)

Table 27 : *(Contd....)*

Per cent Distribution												
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Total children	39	38	40	39	38	40	41	40	39	39	40	39
Total adults	45	48	48	47	46	47	45	46	45	47	46	47
Total old	16	15	12	14	16	13	14	14	16	14	13	14
Total male	56	57	56	56	53	54	58	55	54	56	57	56
Total females	44	43	44	44	47	46	42	45	46	44	43	44
Total population	100	100	100	100	100	100	100	100	100	100	100	100

Note: LF= large farmers; SF= small farmers; MF= marginal farmers

Literacy Rate: Despite nearly the same population composition in the two districts and the State as a whole, significant variations are found in the literacy and educational status among the different categories of the farmers within the same district and also across the districts. Thirty per cent of the sample farmers in Begusarai and 16 per cent in Katihar were found to be totally illiterate. Another 30 per cent of the farmers in Katihar were educated up to secondary level followed by 19 per cent up to middle level and 13 per cent up to graduation level. Thus, educational status of the farmers was found to be much better in Katihar compared to Begusarai where 21 per cent of the total farmers were just literate, 18 per cent educated up to secondary level and 17 per cent were educated up to middle level. Only eight per cent of the farmers were found to be educated beyond secondary level.

Table 28 : Literacy Status : Bihar

	Begusarai				Katihar				Bihar			
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Children	78	63	42	58	74	48	31	45	76	55	36	51
Adults	70	53	34	49	61	48	27	42	66	51	30	46
Old	45	44	25	38	35	32	27	31	41	38	26	34
Male literacy rate	73	54	43	54	65	50	30	44	69	52	36	49
Female literacy rate	65	57	27	48	58	42	27	39	61	49	27	43

Livestock and Agricultural Implements: Ownership of livestock was found to be fairly high in Katihar when compared to Begusarai. Among the livestock animals cows, buffalos and bullocks were main animals. The distribution however across the districts was quite uneven, 47 out of 63 bullocks in the study area, or nearly 75 per cent of the total were found in Katihar. Similarly, 57 per cent of the cows and 90 per cent of the poultry birds were concentrated in Katihar. On an average, nearly every household in Katihar was found to be in possession of cows and poultry birds. In Begusarai on the other hand, cows per household were just 0.80. Same trend is visible in case of agricultural implements which also shows the status of mechanisation of agriculture sector. Fourteen out of 20 tractors in the study area were in Katihar alone. Similarly, 71 per cent of the oil engines (64 out of 90). Thus, Katihar represented a better mechanisation and modernised agriculture than Begusarai.

Table 29: Livestock and Agricultural implements : Bihar

	Begusarai				Katihar				Bihar			
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Bullocks	5	5	6	16	6	23	18	47	11	28	24	63
Buffalos	3	18	4	25	7	5	6	18	10	23	10	43
Cows	18	34	28	80	27	51	28	106	45	85	56	186
Goats/ sheep	1	2	6	9	0	12	12	24	1	14	30	45
Poultry birds	0	8	1	9	22	59	35	116	22	67	36	125
Wooden ploughs	1	4	1	6	3	15	10	28	4	19	11	34
Iron ploughs	1	1	4	6	2	1	2	5	3	2	6	11
Tractor/ thresher/tillers	5	2	0	7	9	5	0	14	14	7	0	20
Bullock carts	3	5	5	13	1	7	10	18	4	12	15	31
Electric-motors	0	4	0	4	0	0	1	1	0	5	1	6
Oil engines	11	8	7	26	20	24	20	64	31	32	27	90

Income and Landholding: The average income per household in the study area was found to be Rs. 4253 only. However, the average income per household as well as per capita was found to be much higher in Katihar for the large and small farmers despite lesser proportion of land under irrigation as well as total land. On the other hand, marginal farmers own more land in Katihar but have lower income levels when compared to the underdeveloped district, Begusarai. The average landholding per household was found to be nearly four acres. The average landholding per household in Begusarai was higher for large and small farmers.

Land Markets

Village Land Use Pattern : Table 31 shows the village-wise total land, land use and leasing practices. Overall, the 200 households covered in the survey in eight villages own 1102.58 acres of land of which 542.25 acres are in the four villages of Katihar and 560.33 acres are in the four villages of Begusarai. Thus, the total land at the district aggregate level is almost evenly distributed. However, at the village level variations are found. Gangaraho in Begusarai accounts for the maximum land (15.6 per cent) followed by Digiri in Katihar (14.70 per cent). Thus, these two villages alone account for 30 per cent of the total land. Rest of the six villages account for the remaining 70 per cent of land. Gangaraho also accounts for the largest quantum of wet or irrigated land (16.97 per cent) followed by Chakarmeedh in the same district. Overall, more than 55 per cent of the wet land is concentrated in Begusarai. Except for Digiri, all the remaining villages in Katihar account for just 30 per cent of the total wetland. Thus, though the total land available in the two districts are almost same, qualitative differences are found in terms of availability of irrigation.

Not surprisingly, therefore, more than 90 per cent of total leased out dryland is found in Katihar alone. Begusarai accounts for slightly above nine per cent of the total leased out dryland in the study area. On the other hand, only 36 per cent of the leased out wetland is from Katihar and Begusarai accounts for the rest of the 67 per cent of leased out land in the study area. The practice of leaving the dryland as current fallow is equally prevalent in both the districts. Two reasons may be cited for the comparatively low leasing out of irrigated land and high leasing out of the dryland in Katihar-

Table 30 : Income and Landholdings : Bihar

	Begusarai				Katihar				Bihar			
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
PHI	72793	30922	26004	37329	94691	45774	26637	47903	167484	76696	52641	85231
PCI	6966	3084	2914	3860	9762	4391	2501	4619	8312	3750	2689	4253
PHL	16.57	4.52	1.21	5.61	15.65	4.27	1.47	5.42	16.11	4.39	1.32	5.51
PHWL	12.4	3.84	0.98	4.41	9.35	3.14	1.19	3.60	10.88	3.49	1.12	4.00

Note: PHI= per household income; PCI= per capita income; PHL= per household landholdings; PHWL= per household wetland

a) Due to lower proportion of irrigated land, farmers prefer to keep it for self-cultivation and lease out the dryland; and

b) Due to the practice of growing banana and jute which are high value crops, irrigated land has better returns in Katihar than in Begusarai where the cropping pattern is more traditional in nature and no commercialised crop was found to be grown. This is specifically true about Digiri village in Katihar where more than 29 per cent of the cropped area is under banana only and large farmers are able to sustain with the irrigated land rather than putting the unirrigated land also to self-cultivation.

Land Use Structure and Leasing Practices: Table 32 shows the village-wise distribution of land under different categories as per cent of the total owned land in the village. Overall, the dryland accounts for slightly above 27 per cent of the total village land in the study area. However, the dryland component is specifically high in Katihar at more than 30 per cent. Nearly 36 per cent of the total land in Kharua is dryland. On the other hand, in case of Begusarai, this proportion is above 26 per cent in Suja which is highest for the district. In Dhaboli and Gangaraho, it is found to be above 21 per cent whereas in Chakarmeedh it is just 17 per cent of the total village land. The qualitative composition of land has a very distinct bearing on the nature of lease market.

The nature of lease market varies from village to village depending on the general level of agricultural development (see the section on cropping pattern and availability of irrigation facilities). In more developed villages like Digiri, good proportion of even dryland is leased out, otherwise the preference is for keeping it as fallow land (Table 32).

Wetland constitutes the bulk of leased out land. In fact nearly 58 per cent of the total leased out land is wetland. This proportion could be even higher but for the case of Digiri village which alone accounts for more than 33 per cent of the total leased out land in the study area (Table 31) of which nearly 70 per cent is dryland. Other than this village, dryland has probably no demand and hence is kept as fallow land.

Access to Land and Leasing Out: Land ownership pattern reflects the availability and access to land for agriculture purposes and also its relative distribution across the different categories of the farmers. We have tried to analyse the land ownership pattern and land use practices (accounting for the differences between

Table 31 : Village-wise Distribution of Land : Bihar

	Digiri	Tinpa	Kharua	Mol	Kat	Chk	Dhabi	GAR	Suja	Beg	Total
Wetland	107.1	75.5	93.9	83.55	360.05	122.12	95.66	136	87.35	441.13	801.18
Dryland	55	36.7	52	38.5	182.2	26.1	25.6	36.7	30.8	119.2	301.4
Total land	162.1	112.2	145.9	122.05	542.25	148.22	121.26	172.7	118.15	560.33	1102.58
Current fallow	6	12	13.5	12	43.5	13.5	3	19.5	10.5	46.5	90
Leased out dryland	19.5	2.5	6	4	32	0	0	1.5	1.8	3.3	35.3
Leased out wetland	8.5	3	3.2	3	17.7	17	0	13	1	31	48.7
Total leased out land	28	5.5	9.2	7	49.7	17	0	14.5	2.8	34.3	84
Dryland for self-cultivation	29.5	22.2	32.5	22.5	106.7	12.6	22.6	15.7	18.5	69.4	176.1
Wetland for self-cultivation	98.6	72.5	90.7	80.55	342.35	105.12	95.66	123	86.35	410.13	752.48
As Per cent of Total Study Area											
Wetland	13.37	9.42	10.43	10.43	44.94	15.24	11.94	16.97	10.90	55.06	100.00
Dryland	18.25	12.18	12.77	12.77	60.45	8.66	8.49	12.18	10.22	39.55	100.00
Total land	14.70	10.18	11.07	11.07	49.18	13.44	11.00	15.66	10.72	50.82	100.00
Current fallow	6.67	13.33	13.33	13.33	48.33	15.00	3.33	21.67	11.67	51.67	100.00
Leased out dryland	55.24	7.08	11.33	11.33	90.65	0.00	0.00	4.25	5.10	9.35	100.00
Leased out wetland	17.45	6.16	6.16	6.16	36.34	34.91	0.00	26.69	2.05	63.66	100.00
Total leased out land	33.33	6.55	8.33	8.33	59.17	20.24	0.00	17.26	3.33	40.83	100.00
Dryland for self-cultivation	16.75	12.61	12.78	12.78	60.59	7.16	12.83	8.92	10.51	39.41	100.00
Wetland for self-cultivation	13.10	9.63	10.70	10.70	45.50	13.97	12.71	16.35	11.48	54.50	100.00

Table 32 : Village-wise Distribution of Land According to Use (as per cent of total village land) : Bihar

VILLAGE	Digiri	Tinpania	Molan-pur	Kharua	Dhaboli	Chakar-rmeedh	Ganga-raho	Suja	Total
Total owned land	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Owned wetland	66.07	67.29	68.46	64.36	78.89	82.39	78.75	73.93	72.66
Owned dryland	33.93	32.71	31.54	35.64	21.11	17.61	21.25	26.07	27.34
Current fallow	3.70	10.70	9.83	9.25	2.47	9.11	11.29	8.89	8.16
Leased out dryland	12.03	2.23	3.28	4.11	0.00	0.00	0.87	1.52	3.20
Leased out wetland	5.24	2.67	2.46	2.19	0.00	11.47	7.53	0.85	4.42
Total leased out land	17.27	4.90	5.74	6.31	0.00	11.47	8.40	2.37	7.62
Composition of Leased Out Land									
Leased out dryland as per cent of total dryland	35.45	6.81	10.39	11.54	0.00	0	4.09	5.84	11.71
Leased out wetland as per cent of totals wetland	7.94	3.97	3.59	3.41	0.00	13.92	9.56	1.14	6.08
Leased out wetland as per cent to total leased out land	30.36	54.55	42.86	34.78	0.00	100.00	89.66	35.71	57.98
Fallow land as per cent to dryland	10.91	32.70	31.17	25.96	11.72	51.72	53.13	34.09	29.86

owned land and land finally put to cultivation). As an indicator of quality, the total owned land is classified as irrigated or wetland and dry or unirrigated land.

Table 33 shows the land ownership and uses for different categories of the farmers in absolute terms and also in relative terms (as per cent of the total land owned by any particular category of the farmer). The survey covered 1102.58 acres of land possessed by the 200 farmers belonging to the three categories, i. e. large and medium farmers (LF); small and semi-medium farmers (SF) and marginal farmers and agricultural labourers. Table 33 shows the category-wise distribution of land in the two districts. Twenty per cent of the large farmers own nearly 58 per cent of the total land. Forty per cent of small farmers own 32 per cent of the land whereas another 40 per cent of the sample, marginal farmers own just ten per cent of the land. The differentials between the land owned by small farmers and marginal farmers are much wider compared to difference between large farmers and small farmers. Prima facie the total land owned is slightly higher in the underdeveloped district (Begusarai).

Compared to total land the access to irrigated land is marginally better for both the small and marginal farmers. As against 32 per cent of the total land, small farmers have 35 per cent of the total irrigated land. Similarly, marginal farmers own ten per cent of the total land but 13 per cent of irrigated land.

Irrigation and Land Use*:* We have seen earlier that 21 per cent of total land in Begusarai is dryland and hence is either left fallow or leased out. The proportion of dryland is much higher (Tables 31 and 33) as nearly 34 per cent of total land in Katihar is found to be dryland. Overall, 27 per cent of total owned land area is dryland.

The high proportion of dryland in Katihar is explained by very high proportion of dryland among the large farmers. Nearly 40 per cent of land owned by large farmers in Katihar falls in the category of unirrigated land. The same in case of Begusarai is just 25 per cent. Same trend is witnessed in case of small farmers, as only 14.94 per cent of the land of small farmers is unirrigated compared to more than 26 per cent in case of Katihar. Thus, surprisingly the overall irrigated proportion of land is found to be higher in case of the underdeveloped district rather than in the developed district.

Table 33 : Farmers' Category-wise Land Distribution (area in acres) : Bihar

	Begusarai				Katihar				Bihar			
Land Use	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Total owned land	331.3	180.75	48.28	560.33	313	170.65	58.6	542.25	644.3	351.4	106.88	1102.58
Total owned land per household	16.57	4.52	1.21	5.61	15.65	4.27	1.47	5.42	16.11	4.39	1.34	5.51
Owned wet land	248	153.75	39.38	441.13	187	125.45	47.6	360.05	435	279.2	86.98	801.18
Owned dryland	83.3	27	8.9	119.2	126	45.2	11	182.2	209.3	72.2	19.9	301.4
Current fallow	37.5	9	0	46.5	32	7	4.5	43.5	69.5	16	4.5	90
Leased out dryland	1.5	1.5	0.3	3.3	31	0	1	32	32.5	1.5	1.3	35.3
Leased out wetland	28.5	1	1.5	31	16	0.2	1.5	17.7	44.5	1.2	3	48.7
Total leased out land	30	2.5	1.8	34.3	47	0.2	2.5	49.7	77	2.7	4.3	84
Per cent Distribution of Land Use												
Total owned land	100	100	100	100	100	100	100	100	100	100	100	100
Owned wet land	74.86	85.06	81.57	78.73	59.74	73.51	81.23	66.40	67.52	79.45	81.38	72.66
Owned dryland	25.14	14.94	18.43	21.27	40.26	26.49	18.77	33.60	32.48	20.55	18.62	27.34
Current fallow	11.32	4.98	0.00	8.30	10.22	4.10	7.68	8.02	10.79	4.55	4.21	8.16
Leased out dryland	0.45	0.83	0.62	0.59	9.90	0.00	1.71	5.90	5.04	0.43	1.22	3.20
Leased out wetland	8.60	0.55	3.11	5.53	5.11	0.12	2.56	3.26	6.91	0.34	2.81	4.42
Total leased out land	9.06	1.38	3.73	6.12	15.02	0.12	4.27	9.17	11.95	0.77	4.02	7.62

Understandably the area under current fallow as proportion of total owned land is higher in case of large and medium farmers in both the districts. The real difference in this respect is found in case of marginal farmers. Nearly eight per cent of the land belonging to marginal farmers is kept as fallow whereas the same in case of Begusarai is nil.

The proportion of leased out dryland in case of large farmers is also high in Katihar (nearly ten per cent of the total owned land) whereas the same in case of Begusarai is almost negligible. In case of small and semi-medium farmers, the leasing out of wetland is not significant and is less than one per cent.

On the other hand, the marginal farmers have shown a tendency to lease out wetland in both the districts. Which in other words mean that the phenomenon of "reverse leasing" is also appearing in the villages which probably is an offshoot of commercial farming but the main takers of their land are small farmers and not the large farmers.

Composition of Leased Out and Fallow Land: We have seen farmers' category-wise practice of land leasing (out). It is apparent from the different patterns of leasing out of land in the two districts that in the face of availability of irrigated land, there are no takers of dryland as has happened in case of Begusarai where none of the farmers' category have been involved in leasing out of land. This also reflects low demand for dryland in Begusarai. Due to lower availability of the irrigated land in Katihar, leasing out of dryland by large farmers is seen. Table 34 shows the composition of the leased out land and fallow land as proportions of the respective category of land.

Table 34 shows that in Begusarai, large farmers lease out more than eleven per cent of the total irrigated land and less than two per cent of total dryland. Consequently, the fallow land as percentage of total dryland is fairly high (15.12 per cent). Ninety five per cent of the land leased out by large farmers in Begusarai is wetland. Small farmers in Begusarai prefer to keep the entire owned wetland for self-cultivation as less than one per cent of wetland is leased out. Leased out wetland as proportion of total owned wetland by the marginal farmers is nearly four per cent but the area involved is very low, less than one acre.

Compared to Begusarai, the leased out land as proportion to the respective category of land is significantly different. Large farmers lease out more than

Table 34 : Leased Out Land and Fallow Land : Bihar

	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Leased out wetland as per cent of total wetland	11.49	0.65	3.81	7.03	8.56	0.16	3.15	4.92	10.23	0.43	3.45	6.08
Leased out dryland as per cent of dryland	1.80	5.56	3.37	2.77	24.60	0.00	9.09	17.56	15.53	2.08	6.53	11.71
Leased out wetland as per cent of total leased out land	95.00	40.00	83.33	90.38	34.04	100.00	60.00	35.61	57.79	44.44	69.77	57.98
Fallow land as per cent to dryland	15.12	5.85	00	10.54	17.11	5.58	9.45	12.08	15.98	5.73	5.17	11.23

one-third (34 per cent) of their dryland and just 8.5 per cent of wetland. The proportion of dryland left as current fallow is higher in Katihar at 17.11 per cent of total dryland. This means that more than 50 per cent of the dryland the farmers is not being used for self-cultivation. Leasing out practice is negligible in case of small farmers in Katihar. But the marginal farmers have shown a tendency to lease out both irrigated land as well as dryland but these proportions are small and in absolute sense are not very significant.

Farmers' Category-wise Incidence of Leasing Out: Table 35 shows the number of farmers practising leasing out land and also the leasing arrangements. Leasing is usually on fixed rent basis or crop sharing basis. Total 40 out of 200 farmers (20 per cent) in the study districts were found to be involved in the practice of leasing out land. But the number consists heavily of large farmers. Twenty eight (70 per cent) out of the total 40 farmers leasing out land belong to large farmers' category, 5 belong to small farmers' category (12.5 per cent) and 7 belong to marginal farmers' category (17.5 per cent). Thus, small and marginal farmers taken together account for 30 per cent of the sample who lease out land, but their share in total leased out land is even less than one per cent. Thus, supply of land in the lease market is the sole function of large farmers and the nature of leased market is by and large, monopolistic.

The near monopoly over supply of land allows the large farmers to determine the nature of leasing arrangements regardless of the nature and quality of the land involved in leasing.

Table 35: No. of Farmers Leasing Out and Terms of Leasing Out : Bihar

	Begusarai			Katihar			Total		
	Fixed	Crop	Total	Fixed	Crop	Total	Fixed	Crop	Total
LF	5(25)	6(30)	11(55)	11(55)	6((30)	17(85)	16(40)	12(30)	28(70)
SF	2(5)	2(5)	4(10)	1(2.5)	0	1(2.5)	3(3.75)	2(2.5)	5(6.25)
MF	2(5)	0(0)	2(5)	5(12.5)	0	5(12.5)	7(8.75)	0	7(8.75)
Total	9(9)	8(8)	17(17)	17(17)	6(6)	23(23)	26(13)	14(7.0)	40(20)

Note: Figures in parentheses show per cent total number of farmers in that category.

Land Ownership and Access To Land: One of the major dimensions of agrarian relations in the literature has been the relative access of land to different categories of the farmers. As three different categories of farmers are selected as samples, inequalities and disparities in the land ownership pattern among the three categories of the farmers are bound to be present. It is therefore, appropriate to examine the distribution of land according to land use and irrigation across the farmers in the two districts. Table 36 shows the relative distribution or access to land by different categories of the farmers.

Twenty per cent of the farmers belonging to large farmers' category (as per the sample design) own more than 59 per cent of the total land and 52 per cent of total irrigated land in Begusarai and 58 and 52 per cent respectively, in Katihar. Similarly, 40 per cent of the small farmers own nearly 32 per cent of the total land in Begusarai and 35 per cent of the total irrigated land in the two districts. Thus, the proportion of irrigated land to total land is found to be better in case of small farmers when compared to large farmers (Table 33) in Begusarai. Similar trend is found in Katihar also where small farmers own 31 per cent of total land and 35 per cent of irrigated land. The relative access to total and irrigated land is very poor in case of marginal farmers as they constitute 40 per cent of the sample and own only nearly nine per cent of the total and irrigated land in Begusarai.

We have seen earlier that overall landholding in Katihar was slightly lower compared to Begusarai for all the categories of the farmers (Table 33), yet the relative access to irrigated land is comparatively better in Katihar as the 40 marginal farmers (40 per cent of the total farmers) account for nearly eleven per cent of the land and more than 13 per cent of the total irrigated land.

Much of the dryland is concentrated in the hands of the large farmers as they alone account for nearly 70 per cent of the dryland in Begusarai and 69 per cent in Katihar. The relative share of small farmers varies between 23 and 25 per cent. Despite the better relative access to irrigated land in case of marginal farmers, their access to total land in terms of owned land is very low (Table 31). Consequently, leasing in of land is a natural option for the marginal farmers to augment their resources for cultivation.

Table 36: Category-wise Distribution of Land : Bihar

	Begusarai				Katihar				Bihar			
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Owned wetland	56.22	34.85	8.93	100.00	51.94	34.84	13.22	100.00	54.29	34.85	10.86	100.00
total owned dryland	69.88	22.65	7.47	100.00	69.15	24.81	6.04	100.00	69.44	23.95	6.60	100.00
Current fallow	80.65	19.35	0.00	100.00	73.56	16.09	10.34	100.00	77.22	17.78	5.00	100.00
Leased out dryland	45.45	45.45	9.09	100.00	96.88	0.00	3.13	100.00	92.07	4.25	3.68	100.00
Leased out irrigated land	91.94	3.23	4.84	100.00	90.40	1.13	8.47	100.00	91.38	2.46	6.16	100.00
Total leased out land	87.46	7.29	5.25	100.00	94.57	0.40	5.03	100.00	91.67	3.21	5.12	100.00
Total owned land	59.13	32.26	8.62	100.00	57.72	31.47	10.81	100.00	58.44	31.87	9.69	100.00

Leasing in of Land: While leasing out is practised to earn out of the land which the owner farmer himself is not able to manage, leasing in is resorted to enhance productive resources by the farmers who need land. In this section, we examine two aspects of leasing in of land- incidence and importance. Incidence of leasing refers to number of farmers dependent on or practising the leasing in of land whereas importance refers to its contribution in net sown area of the farmers. While the incidence reflects the demand for land, the importance and quality of land usually determines the farmers' ability to settle the terms of leasing in.

Incidence of Leasing In: Table 36 shows the incidence of leasing among the sample households. Overall, 36 farmers households (18 per cent of total) are found to have leased in land. Seventeen farmers in Begusarai and 19 farmers in Katihar reported leasing in of land. Although the number of farmers reporting leasing in of land in Begusarai is lower, total leased in land is more when compared to Katihar.

Farmers' Category-wise Leasing in*:* None of the farmers have reported leasing in of dryland. Four large farmers (out of 36) have also leased in land accounting for 17 per cent of the total leased in land in the study districts. Small farmers on the other hand, account for 47 per cent of the farmers who lease in land and 42 per cent of the total leased in land. The marginal farmers, 15 in number account for 42 per cent of the farmers leasing in of land and have nearly the same proportion of the leased in land. These two categories of the farmers taken together account for 20 per cent of the sample farmers' households who depend on leased in land for their sustenance (Table 37). Thus, the incidence of leasing or tenancy is fairly high in the study area.

Irrigation Status and Leasing*:* Irrigation is a key determinant of demand for land. None of the large farmers have shown any interest in leasing of dryland. However, two farmers in Begusarai and two in Katihar have leased in wetland. Only one small farmer in Begusarai and six marginal farmers have taken in land on lease basis. Thus, out of ten farmers who have leased in dryland, nine belong to Katihar. We have seen earlier that Katihar has comparatively lower proportion of irrigated land and hence leasing in of dryland is also prevalent.

Leasing market therefore, it appears is heavily dependent on the availability of irrigation facilities. Out of 75.3 acres of the total leased in land, 49.7 acres or 66 per cent is irrigated land. Similarly, out of 36 farmers who have leased in land, 26 or 72 per cent have leased in wetland only. The leasing in of

irrigated land on the whole is concentrated around the small farmers as 16 out of 26 farmers households who have leased in wetland belong to this category. If we look at the districts, it is found that Katihar has a more active lease market, as far as out of 49.7 acres of leased in wetland 32 acres (64 per cent) is in Katihar alone.

Table 37: Category-wise No. of Farmers and Leased in Area : Bihar

	Land Category	No. and Area	LF	SF	MF	Total
Begusarai	Dry	No.	0	1	6	7
		Area	0	1	21.6	22.6
	Wet	No.	2	4	4	10
		Area	8	5	4.7	17.7
	Total	No.	2	5	10	17
		Area	8	6	26.3	40.3
Katihar	Dry	No.	0	3	0	0
		Area	0	3	3	3
	Wet	No.	2	12	2	16
		Area	5	25	2	32
	Total	No.	2	12	5	19
		Area	5	25	5	35
Total	Dry	No.	0	1	9	10
		Area	0	1	24.6	25.6
	Wet	No.	4	16	6	26
		Area	13	30	6.7	49.7
	Total	No.	4	17	15	36
		Area	13	31	31.3	75.3

***Access to Land for Cultivation and Role of Leasing**:* To assess the relative importance of leased in terms of dependency of the different categories of the farmers, we have decomposed the net cultivated area into four categories- a) own dryland put for self-cultivation; b) own wetland put for self-cultivation; c) leased in dryland and d) leased in wetland for cultivation. The four taken together give us the net sown area for the farmers. Table 38 shows the composition of the net cropped area. The last column of Table shows the net sown area as per cent of total owned area. The case of marginal farmers comes out as a distinct case of dependency on others as tenants as in their case the net sown area is 121 per cent of their own area. Similarly, the net sown area of small farmers is also

higher than their owned area. Thus, access to land in case of small and marginal farmers is mainly determined by the lease market which sets in the relation between large farmers on the one hand and small and marginal farmers on the other. The dependency is usually one way, as the income level of the large farmers is fairly high when compared to small and marginal farmers and the leasing out of land on their part is a matter of availability of labour, small and marginal farmers who also work as agricultural labourers**.**

Disparities in Net Cultivated Area: The importance of leasing practices assume greater significance in the face of glaring disparities in distribution of owned land across the different categories of the farmers which we have already examined (Table 37). Table 39 shows the distribution of total owned area according to irrigation and leasing status used for self-cultivation and total net sown area.

In absolute terms, per large farmer household net sown are turns out to be 13.66 acres in Begusarai and 11.85 acres in Katihar. Compared to this, per marginal farm household in Begusarai net sown area available is just 1.81 acres or merely 13 per cent of the per large farmer household's net sown area. This difference is even greater in Katihar despite overall lower average for all the categories of farmers in the district. The average farm size for marginal farmer in Katihar is just 11 per cent of the large farmer's average holding.

The relative average net sown area per household for the small farmers is found to be 32 per cent of the average net sown area of the large farmers in Begusarai and 40 per cent in Katihar. Thus, the difference in average net sown area in the developed district is found to be lower as far as the large and marginal farmers are concerned.

On the other hand, the difference between small and marginal farmers' average net sown area is lower in the developed district (28. 45 per cent) compared to the less developed district (41 per cent). Overall disparities are found to be lesser in Katihar than in Begusarai. The relative better access to land in Katihar is largely explained by the leasing in practices.

Composition of Net Sown Area: Composition of net sown area shows the source-wise access to land by different categories of the farmers and also the importance of external sources of land supply as we have discussed above. We have seen earlier the ownership pattern and relative distribution of land across

Table 38: Farmers' Category-wise Leasing In and Area Under Cultivation : Bihar

	Begusarai				Katihar				Total			
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Total owned land	331.3	180.75	48.28	560.33	313	170.65	58.6	542.25	644.3	351.4	106.88	1102.58
Total owned dryland	83.3	27	8.9	119.2	126	45.2	11	182.2	209.3	72.2	19.9	301.4
Total owned wetland	248	153.75	39.38	441.13	187	125.45	47.6	360.05	435	279.2	86.98	801.18
Current fallow	37.5	9	0	46.5	32	7	4.5	43.5	69.5	16	4.5	90
Own dryland for self-cultivation	44.3	16.5	8.6	69.4	63	38.2	5.5	106.7	107.3	54.7	14.1	176.1
Owned wetland for self-cultivation	219.5	152.75	37.88	410.13	171	125.25	46.1	342.35	390.5	278	83.98	752.48
Total owned land for self-cultivation	263.8	169.25	46.48	479.53	234	163.45	51.6	449.05	497.8	332.7	98.08	928.58
Per household owned land put for self-cultivation	13.19	4.23	1.16	4.79	11.7	4.09	1.29	4.49	12.44	4.16	1.22	4.64

(Contd....)

Table 38 : *(Contd....)*

	Begusarai				Katihar				Total			
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Leased in dryland	0	1	21.6	22.6	0	0	0	3	0	1	24.6	25.6
Leased in wetland	8	5	4.3	17.3	5	25	2	32	13	30	6.3	49.3
Total leased in land	8	6	25.9	39.9	5	25	2	32	13	31	27.9	71.9
Net sown area (wet)	227.5	157.75	42.18	427.43	176	150.25	48.1	374.35	403.5	308	90.28	801.78
Net sown area (dry)	44.3	17.5	30.2	92	63	38.2	8.5	109.7	107.3	55.7	38.7	201.7
Total net sown area NSA	271.3	175.25	72.38	518.93	237	188.45	53.6	482.05	508.3	363.7	128.98	1000.98
Per Household net sown area	13.66	4.38	1.81	5.19	11.85	4.71	1.34	4.82	12.71	4.55	1.61	5.00
NSA as per cent of total owned land	82	97	150	93	76	110	91	89	79	104	121	91

the villages and among the different farmers' categories. In this section we explore the operational size of holding according to ownership and irrigation status. Table 38 shows the source-wise access to land and category-wise distribution of land according to irrigation status. Table 39 shows the distribution of net cultivated area according to ownership structure and irrigation status.

On an average, only 77 per cent of the total owned land is out for self-cultivation by the large farmers, 95 per cent by the small farmers and 94 per cent by the marginal. The fact of non-utilisation of land for self-cultivation of land by the large farmers has policy implications and gives the scope, both for legalising of tenancy and settling the terms of leasing by the government as has been done in West Bengal and also for partial redistribution of land.

The Table also shows that 36 per cent of the net sown area of the marginal farmers in Begusarai and nearly 14 per cent of net sown area of marginal farmers in Katihar consists of leased in land alone giving scope for exploitation and control over labour at the hands of large farmers. (also see Section on Occupational Pattern).

Sale and Purchase of Land: **T**he open land market in terms of sale and purchase was examined and the period of reference was last five years. Out of 200, total 26 farmers (13 per cent) reported sale of land over last five years (2000-2005). The majority of the farmers selling land belonged to the class of marginal farmers. Eleven out of 26 farmers who sold land belonged to this class followed by ten small farmers. Thus, 42 per cent of the farmers selling land over last five years belonged to the class of marginal farmers and 38 per cent were small farmers (Table 40).

When we take district-wise look, 17 (65 per cent) of the 26 land selling farmers were from Katihar. Land market was thus found to be more active in Katihar. The incidence of land selling was found to be proportionately fairly high among the small and marginal farmers as they alone constitute 76 per cent of the total. However, these 76 per cent of farmers sold 65 per cent of the total land sold.

Although the number of farmers reporting sale of land was lower in Begusarai, the trend is the same. Majority of the farmers reporting sale of land belonged to the class of marginal farmers and small farmers. What is more significant is two in Begusarai and two farmers in Katihar became marginal farmers after the sale of land.

Table 39 : Composition of Net Sown Area : Bihar

	Begusarai		Katihar	Bihar								
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
NSA	271.3	175.25	72.38	518.93	237	188.45	53.6	482.05	508.3	363.7	128.98	1000.98
Owned dryland as per cent of net sown dryland	53.18	61.11	96.63	58.22	50.00	84.51	50.00	58.56	51.27	75.76	70.85	58.43
Owned wetland as per cent of net sown wetland	88.51	99.35	96.19	92.97	91.44	99.84	96.85	95.08	89.77	99.57	96.55	93.92
Total owned land as per cent of net sown area	79.63	93.64	96.27	85.58	74.76	95.78	88.05	82.81	77.26	94.68	91.77	84.22
Leased in dryland as per cent of net sown dryland	0.00	5.71	71.52	24.57	0.00	0.00	35.29	2.73	0.00	1.80	63.57	12.69
Leased in wetland as per cent of net sown wetland	3.52	3.17	10.19	4.05	2.84	16.64	4.16	8.55	3.22	9.74	6.98	6.15
Total leased in land as per cent of net sown area	2.95	3.42	35.78	7.69	2.11	13.27	3.53	6.64	2.56	8.52	21.63	7.18
Net sown wetland as per cent of net sown area	83.86	90.01	58.28	82.37	74.26	79.73	84.98	77.66	79.38	84.69	70.00	80.10
Net sown dryland as per cent of total net sown area	16.33	9.99	41.72	17.73	26.58	20.27	15.02	22.76	21.11	15.31	30.00	20.15
Net sown area as per cent of total owned land	81.89	96.96	149.92	92.61	75.72	110.43	96.59	88.90	78.89	103.50	120.68	90.79

Class of Buyers: While the trend in class-wise farmers selling land is as expected, the class of buyers who purchased land is quite revealing. Overall, more than fifty per cent of buyers (12 per cent of 23) belonged to the class of marginal farmers-cum-migrant labourers. Nine of the farmers who purchased land belong to the category of small farmers. Rest of the two were from government service.

While at overall level they are marginal farmers-cum-migrant labourers, the district-wise trends are quite different. Majority of buyers in Begusarai (6 out of 9) are small farmers whereas 9 out of 14 in Katihar are marginal farmers/ migrant labourers (Table 40).

Purchase of Land: As against 26 farmers in the study area who sold land, only 9 farmers purchased land. Out of these nine farmers five belonged to the category of small farmers, four were marginal farmers and two large farmers. Nine of the farmers in Begusarai reported land purchase. Hence all the eleven reported cases are from Katihar.

Purchased from Whom: The source of supply of land has been mainly the small and marginal farmers. Thus, while nine small and marginal farmers augmented their land resources by purchasing land, at the same, eight of other farmers belonging to same categories (No. captioned in the sample) actually depleted their resource base.

Table 40: Sale of Land- Last Five Years : Bihar

	Begusarai		Katihar		Bihar	
Class of sellers						
	No.	Area	No.	Area	No.	Area
LF	1	1.5	4	3.5	5	5
SF	3	2	7	2.9	10	4.4
MF	5	2.5	6	3.5	11	6
Total	9	6	17	9.9	26	15.9
Class of buyers						
LF	0	-	0	-	0	-
SF	6	-	3	-	9	-
MF	0	-	0	-	0	0
MF and migrant labour	3	-	9	-	12	0
Govt. servant	0	0	2	-	2	-

Table 41: Purchase of Land over Last Five Years : Bihar

	Begusarai		Katihar		Bihar	
Class of buyer	No.	Area	No.	Area	No.	Area
LF	0	0	2	1.5	2	1.5
SF	0	0	5	1.85	5	1.85
MF	0	0	4	2.95	4	2.95
Total	0	0	9	6.3	9	6.3
Class of Seller						
LF	0	-	1	-	1	-
SF	0	-	4	-	4	-
MF	0	-	4	-	4	-
MF and migrant labour	3	-	1	-	1	0
Govt. servant	0	0	1	-	1	-
Total	0	0	11		11	

Agrarian Structure and Village Economy : The agrarian structure of the rural economy is mainly reflected through the cropping pattern and land ownership structure. We have analysed in the previous sections the land ownership pattern, land markets and composition of net sown area. In this section we have tried to analyse the inter-village and inter-class differences in cropping pattern, yield levels and composition of the gross value of agricultural produce and access to market.

Cropping Pattern: The cropping pattern indicates marginal differences across the villages in the two districts. Table 42 shows the village-wise cropping pattern in the study area. Paddy is the most dominant crop in Katihar whereas wheat has the maximum area under cultivation in Begusarai. The following major observations may be made from Table 42.

Village-wise Cropping Pattern:

- Paddy is the dominant crop in all the villages of Katihar with an overall average of 37.81 per cent of the gross cropped area. The proportion of paddy area is higher in both the underdeveloped villages (Kharua and Madanpur). Nearly 46 per cent of the gross cropped area in Molanpur and 38 per cent of area in Kharua is under paddy. The same in case of developed villages (Digiri and Tinpania) is slightly above 33 per cent.

- Despite larger proportion of area under paddy, cropping pattern is more diversified in the underdeveloped villages and underdeveloped blocks as reflected by the crop diversification indices. In case of Kharua for example, wheat (15.43 per cent), mustard (12.77 per cent), vegetables (12.15per cent) and jute (9.71 per cent) are other important crops. Another 10 per cent of area is under pulses and potato. Similarly, in case of Molanpur, besides paddy which alone accounts for more than 45 per cent of gross cropped area, mustard (15.07 per cent), wheat (14.77 per cent); vegetable (9.71 per cent) and jute (7.69 per cent) are the other important crops.

- Compared to this, the cropping pattern in the developed villages is more commercialised but less diversified. Paddy (33.47 per cent) and banana (29.92 per cent) are the two most dominant crops followed by wheat. The developed village (Tinpania) in underdeveloped block (Kharua) is more diversified in terms of cropping pattern, with two dominant crops (paddy and wheat) and two cash crops like banana and maize.

- Overall in Katihar, paddy, wheat, banana, mustard and vegetables are the important crops. Jute and banana are the two important crops in the developed district (Katihar). However, cultivation of banana is confined to only two of the four villages, similarly, jute has more than five per cent area in two villages, and maize is found in one village.

- This pattern is different in the lesser developed district of Begusarai. Dhaboli and Suja, the two developed villages in Begusarai have wheat as the pre-dominant crop with 28.53 per cent area and 33.55 per cent of gross cropped area is under paddy.

- Other than wheat and paddy, maize is focused to be a very important crop in all the four villages of Begusarai whereas it was cultivated in only one village of Katihar. Banana and jute are totally absent from the district.

Farmers' Category-wise Crop Preferences : Table 43 shows the farmers' category-wise crop preferences in the two districts.

- Table 43 shows district differences in the cropping pattern of different categories of the farmers. Paddy is preferred by all categories of the farmers as it accounts for 38, 40 and 30 per cent respectively for large, small and marginal farmers. Thus, while the proportion of gross sown

area under paddy is nearly the same for large and small farmers, it is nearly ten per cent less in case of marginal farmers. In absolute terms, compared to 126 acres of land for large farmers and 105 acres of land of small farmers, the marginal farmers have only 27.5 acres of land under paddy. This itself speaks of the food crisis faced by small farmers as overall only 33 per cent of land under paddy is with the 40 per cent of the farmers. Consequently, the marginal farmers prefer cash crops with lesser gestation period like vegetables (19 per cent) and if possible plantation crops also like banana (14 per cent) and jute (15 per cent). The large farmers on the other hand, go for wheat (22 per cent) as second crop followed by crops like mustard (11 per cent) and banana (9 per cent). Despite these lower proportions for these crops the large farmers' income level is fairly high as the actual area in absolute terms is high when compared to small and marginal farmers. Banana is the only exception where largest area is with the small farmers.

- Intensity of cropping when compared among the three categories of the farmers, is focused to be highest among the marginal farmers (169) followed by the small farmers and large farmers (139 in each case).

- More than 62 per cent of the gross cropped area in Begusarai is under wheat and paddy in case of large farmers, with area under maize and pulses around 9 per cent in each of the crops followed by mustard, potato and vegetables in each case ranging between 6 and 7 per cent. Thus, despite a range of crops growth by the large farmers, the cropping intensity is just 104 per cent which shows sub-optimal use of land.

- The small farmers, on the other hand show slightly better management of land cropping intensity of 112 per cent. Paddy and wheat account for more than 60 per cent of the gross sown area, cropping pattern is more or less the same in case of small farmers, as witnessed in case of large farmers, the proportion of gross sown area devolved to maize, mustard, potato and vegetable is higher in case of small farmers.

- Cropping intensity was found to be highest in case of marginal farmers (136 per cent). In order of importance paddy ranks third in their case with just 16.48 per cent of GSA. Wheat (33.17 per cent) and maize (23.59 per cent) are the two dominant crops. Potato (11.70 per cent) is another important crop for marginal farmers.

- Compared with the overall cropping pattern of the district we find that the pattern is significantly different for marginal farmer.

- The difference is also reflected in greater crop diversification in case of marginal farmers in both the districts. Against the overall value of crop diversification index of 21.93 in Katihar district, it is found to be 19.75 in case of marginal farmers, 22.34 in case of small farmers and 23.76 in case of large farmers. As the crop diversification has important bearing on soil sustainability, the pattern and effectiveness of investment in land for different categories of the farmers may have different returns. However, this is one aspect which requires a separate and indepth study.

- Same pattern is witnessed in the underdeveloped district (Begusarai) in more rigid form. The rigidity in cropping pattern is much higher in case of large farmers (30.80) when compared to the crop diversification index for small farmers (24.61) and marginal farmers (21.21). Overall, it may be said that land utilisation is most intense in case of marginal farmers followed by small and medium farmers.

Productivity Levels: When we compared village-wise productivity levels for different crops, only in case of maize inter-village productivity differences are witnessed. It varies from 8.79 quintals per acre in Gangaraho (Begusarai) to 15.89 quintals per acre in Dhaboli; followed by 14.79 quintals in Suja and 13.95 quintals in Chakarmeedhi. The overall maize productivity in Begusarai is 12.90 quintals per acre. Maize was found in only two villages in Katihar. Per acre maize production in Kharua at 9 quintals was found to be much lower when compared to 14.45 quintals per acre in Tinpania (Table 44).

Wheat and paddy production was found to be fairly low in all the villages when compared to the national average. The highest yield (9.6 quintals) registered in Gangraho was highest in all the eight villages. Productivity of pulses and oilseeds ranged between 3 and 4 quintals per acre in the entire study area. Same trend of low productivity was seen in case of potato and vegetables also.

Farmers' Category-wise Area, Production and Yield Levels: Although inter-village differences are found in the study area in terms of productivity levels of different crops, yet these differences are not very significant among different categories of the farmers in case of paddy and wheat (Table 45). The general trend of low productivity was witnessed across all categories of the farmers in

Table 42: Village-wise Cropping Pattern (area in acres) : Bihar

	Katihar					Begusarai				
Crops	Digiri	Kharua	Molanpur	Tinpania	Total	Chakar-meedh	Dhaboli	GAR	Suja	Total
Paddy	66	79	77.05	36	258.05	48.4	39	47.4	26.9	161.7
Maize	0	2	0	14.6	16.6	22.30	13.78	23.44	16.84	76.36
Wheat	23	32	25	33	113	39.1	42.8	37.9	59.8	179.6
Pulses	9.7	10.1	4.4	4.1	28.3	6	6.4	8.3	9.7	30.4
Mustard	13	26.5	25.5	1	66	1.7	10.6	6.42	23.5	42.22
Potato	5	12	9	0	26	9.1	19	10.56	10.1	48.76
Vegetables	15.5	25.2	15.25	1.5	57.45	0	5.1	21.2	12.5	38.8
Banana	59	0.5	0	18.5	78	0	0	0	0	0
Jute	6	20.15	13.01	0	39.16	0	0	0	0	0
NSA	149.1	126.2	109.05	94.7	479.05	120.72	120.46	143.2	134.55	518.93
GSA	197.2	207.45	169.21	108.7	682.56	126.60	136.68	155.22	159.34	577.84
Cropping Intensity	132	164	155	115	143	105	113	108	118	111

(Contd....)

Table 42: *(Contd....)*

	Katihar					Begusarai				
Crops	Digiri	Kharua	Molanpur	Tinpania	Total	Chakar-meedh	Dhaboli	GAR	Suja	Total
Per cent distribution										
Paddy	33.47	38.08	45.54	33.12	37.81	38.23	28.53	30.51	16.88	27.98
Maize	0.00	0.96	0.00	13.43	2.43	17.93	10.08	15.10	10.57	13.21
Wheat	11.66	15.43	14.77	30.36	16.56	30.88	31.31	25.58	37.53	31.08
Pulses	4.92	4.87	2.60	3.77	4.15	4.74	4.68	5.35	6.09	5.26
Mustard	6.59	12.77	15.07	0.92	9.67	1.34	7.75	4.14	14.75	7.31
Potato	2.54	5.78	5.32	0.00	3.81	7.19	3.90	6.80	6.33	8.44
Vegetables	7.86	12.15	9.01	1.38	8.42	0.00	3.73	13.66	7.84	6.71
Banana	29.92	0.24	0.00	17.02	11.43	0	0	0	0	0
Jute	3.04	9.71	7.69	0.00	5.74	0	0	0	0	0
GSA	100	100	100	100	100	100	100	100	100	100
CDI	24.86	19.61	26	23.48	22	28.08	23.31	21.21	19.93	24.09

Table 43 : Farmers' Category-wise Cropping Pattern (area in acres) : Bihar

Farmer type	Katihar				Begusarai			
	Medium and large	Small	Marginal	Total	Medium and large	Small	Marginal	Total
Paddy	126	104.5	27.55	258.05	87	58.5	16.2	161.7
Maize	4	8.8	3.8	16.6	26.3	26.88	23.18	76.36
Wheat	73	35	5	113	87.5	59.5	32.6	179.6
Pulses	21.8	6.3	0.2	28.3	25.9	2.5	2	30.4
Mustard	36	23.5	6.5	66	18	17.22	7	42.22
Potato	15.5	7	3.5	26	19.8	17.46	11.5	48.76
Vegetables	18	22	17.45	57.45	18.8	14.2	5.8	38.8
Banana	29	36.5	12.5	78	0	0	0	0
Jute	6.1	19.06	14	39.16	0	0	0	0
NSA	237	188.45	56.6	479.05	271.3	175.25	72.38	518.93
GSA	329.4	262.66	90.5	682.56	283.3	196.26	98.28	577.84
Cropping Intensity	139	139	160	142	104	112	136	111

(Contd....)

Table 43: *(Contd....)*

Farmer type	Katihar				Begusarai			
	Medium and large	Small	Marginal	Total	Medium and large	Small	Marginal	Total
Per cent Distribution								
Paddy	38.25	39.79	30.44	37.81	30.71	29.81	16.48	27.98
Maize	1.21	3.35	4.20	2.43	9.28	13.70	23.59	13.21
Wheat	22.16	13.33	5.52	16.56	30.89	30.32	33.17	31.08
Pulses	6.62	2.40	0.22	4.15	9.14	1.27	2.04	5.26
Mustard	10.93	8.95	7.18	9.67	6.35	8.77	7.12	7.31
Potato	4.71	2.67	3.87	3.81	6.99	8.90	11.70	4.44
Vegetables	5.46	8.38	19.28	8.42	6.64	7.24	5.90	6.71
Banana	8.80	13.90	13.81	11.43	0	0	0	0
Jute	1.85	7.26	15.47	5.74	0	0	0	0
GSA	100	100	100	100	100	100	100	100
CDI	23.78	22.34	19.75	21.93	30.80	24.61	21.23	24.09

both the districts with respect to both these crops. The primary reason cited by the farmers for the low productivity of these two crops was lack of appropriate doses of fertilisers and pesticides. In fact, according to them the fertiliser supply in the State was nearly at standstill due to very poor infrastructure and transportation conditions and suppliers from other states are not coming in Bihar.

Gross Value of Agricultural Produce and Crop Contribution: Table 46 shows village-wise per cent to GSA under different crops and its share in the gross value of agricultural produce. Table 47 shows the per centage distribution of area under different crops and share in total value of agricultural produce. On an average, wheat occupies largest area in Begusarai (31 per cent), but its contribution in gross value of agricultural produce is just 23 per cent. Similarly, paddy accounts for 28 per cent of area and 19 per cent of gross value. Despite the lower returns in case of paddy as well as wheat, large and medium farmers prefer paddy and wheat due to assured market. As sustenance and not the marketable surplus in case of marginal farmers is the prime objective, they prefer cash crops but higher cash value and also carrying higher marketing risks like maize, potato and vegetables contribute 22 and 9 per cent, respectively to the gross value of agriculture produce in case of marginal farmers with 12 and 6 per cent coverage of total area.

Potato and vegetables contribute significantly to gross value of agricultural produce in case of large and small farmers also. For example, in case of large farmers, potato with an area of 7 per cent of GSA accounts for 15 per cent of gross value of agricultural produce. Similarly, in case of small farmers it occupies 9 per cent of area and contributes 18 per cent of gross value.

Although proportionately marginal farmers have the largest area under potato, in absolute sense they have just 11.5 acres under potato compared to 17.46 acres for small farmers and 19.8 acres for large farmers. Similar is the case of vegetables. Thus, despite more diversified cropping structure, marginal farmers have to face stiff competition from the other two categories for market. Moreover, in the absence of any institutional support these farmers usually have to sell their produce in the local markets; whereas large farmers manage to sell their produce at a higher price in outside markets.

Table 44: Village-wise Productivity Levels : Bihar (Area: Acres; Production and Yield: Quintals)

		Begusarai					Katihar				
Village		Chakar-meedh	Dhaboli	Gangaraho	Suja	Total	Digiri	Kharua	Molanpur	Tinpania	Total
Paddy	A	48.4	39.0	47.4	26.9	161.7	66	79	77.05	36	258.05
	P	362.0	338.0	455.0	239.0	1394.0	597	601	680	337	2215
	Y	7.5	8.7	9.6	8.9	8.6	9.05	7.61	8.83	9.36	8.58
Maize	A	22.30	13.78	23.44	16.84	76.36	0.00	2.00	0.00	14.60	16.60
	P	311	219	206	249	985	0.00	18	0	211	229
	Y	13.95	15.89	8.79	14.79	12.90	0.00	9.00	0.00	14.45	13.80
Wheat	A	39.1	42.8	37.9	59.8	179.6	23.00	32.00	25.00	33.00	113.00
	P	323	354	311	511	1499	153	239	178	258	828
	Y	8.3	8.3	8.2	8.5	8.3	6.65	7.47	7.12	7.82	7.33
Pulses	A	6.0	6.4	8.3	9.7	30.4	9.70	10.10	4.40	4.10	28.30
	P	22.0	22.4	27.1	31.7	103.1	32.20	36.85	15.00	13.70	97.75
	Y	3.7	3.5	3.3	3.3	3.4	3.32	3.65	3.41	3.34	3.45

(Contd....)

Table 44 : *(Contd....)*

Village		Begusarai					Katihar				
		Chakar-meedh	Dhaboli	Gangaraho	Suja	Total	Digiri	Kharua	Molanpur	Tinpania	Total
Oilseeds	A	1.7	10.6	6.4	23.5	42.2	13.00	26.50	25.50	1.00	66.00
	P	6.4	35.0	19.1	87.8	148.2	46.25	90.70	87.80	4.00	228.75
	Y	3.7	3.3	3.0	3.7	3.5	3.56	3.42	3.44	4.00	3.47
Potato	A	9.1	19.0	10.6	10.1	48.8	5.00	12.00	9.00	0.00	26.00
	P	366.0	742.0	390.0	396.0	1894.0	197.00	496.00	382.00	0.00	1075.00
	Y	40.2	39.1	36.9	39.2	38.8	39.40	41.33	42.44	0	41.35
Vegetable	A	0.0	5.1	21.2	12.5	38.8	15.50	25.20	15.25	1.50	57.45
	P	0.0	86.0	363.0	238.0	687.0	255.00	463.00	234.00	25.00	977.00
	Y	0.0	16.9	17.1	19.0	17.7	16.45	18.37	15.34	16.67	17.01
Banana	A	0	0	0	0	0	59.00	0.50	0.00	18.50	78.00
	P	0	0	0	0	0	4756.00	40.00	0.00	1457.00	6253.00
	Y	0	0	0	0	0	80.61	80.00	0	78.76	80.17
Jute	A	0	0	0	0	0	6.00	20.15	13.01	0.00	39.16
	P	0	0	0	0	0	59	128	113	0	300
	Y	0	0	0	0	0	9.83	6.35	8.69	0	7.66

Table 45 : Farmers' Category-wise Area, Production and Yield Levels : Bihar

		Begusarai				Katihar			
Farmer type		Large	Small	Marginal	Total	Medium and Large	Small farmers	Marginal farmers	Total
Paddy	A	87	58.5	16.2	161.7	126	104.5	27.55	258.05
	P	765	489	140	1394	1019	967	229	2215
	Y	8.79	8.36	8.64	8.62	8.09	9.25	8.31	8.58
Maize	A	26.30	26.88	23.18	76.36	4.00	8.80	3.80	16.60
	P	322	363	300	985	100.00	94.00	35.00	229.00
	P	12.24	13.50	12.94	12.90	25.00	10.68	9.21	13.80
Wheat	A	87.50	59.50	32.60	179.60	73.00	35.00	5.00	113.00
	P	724.00	496.00	279.00	1499.00	532.00	260.00	36.00	828.00
	Y	8.27	8.34	8.56	8.35	7.29	7.43	7.20	7.33
Pulses	A	25.90	2.50	2.00	30.40	21.80	6.30	0.20	28.30
	P	88.70	8.40	6.00	103.10	75.40	21.65	0.70	97.75
	Y	3.42	3.36	3.00	3.39	3.46	3.44	3.50	3.45

(Contd....)

Table 45: *(Contd....)*

		Begusarai				Katihar			
Farmer type		Large	Small	Marginal	Total	Medium and Large	Small farmers	Marginal farmers	Total
Mustard	A	18.00	17.22	7.00	42.22	36.00	23.50	6.50	66.00
	P	63.50	60.97	23.75	148.22	128.50	76.55	23.70	228.75
	Y	3.53	3.54	3.39	3.51	3.57	3.26	3.65	3.47
Potato	A	19.80	17.46	11.50	48.76	15.50	7.00	3.50	26.00
	P	787.00	670.00	437.00	1894.00	636.00	284.00	155.00	1075.00
	Y	39.75	38.37	38.00	38.84	41.03	40.57	44.29	41.35
Vegetables	A	18.80	14.20	5.80	38.80	18.00	22.00	17.45	57.45
	P	334.00	266.00	87.00	687.00	316.00	363.00	298.00	977.00
	Y	17.77	18.73	15.00	17.71	17.56	16.50	17.08	17.01
Banana	A					29.00	36.50	12.50	78.00
	P					2312.00	2914.00	1027.00	6253.00
	Y					79.72	79.84	82.16	80.17
Jute	A					6.10	19.06	14.00	39.16
	P					51	130	119	300
	Y					8.36	6.82	8.50	7.66

Table 46: Total and Per Acre Gross Values of Agricultural Produce : Bihar

VILLAGE	Chakar-meedh	GAR	Dhaboli	Suja	Total	Kharua	Molanpur	Digiri	Tinpania	Total
Paddy	3366	4320	3900	3998	3879	3423	3971	4070	4213	3863
Maize	6973	4394	7946	7393	6450	2700	0	0	4336	4139
Wheat	4130	4103	4136	4273	4173	3734	3560	3326	3909	3664
Pulses	6600	5866	6300	5873	6105	6567	6136	5975	6015	6217
Mustard	6724	5361	5943	6721	6319	6161	6198	6404	7200	6239
Potato	12066	11080	11716	11762	11653	12400	12733	11820	0	12404
Vegetables	0	10274	10118	11424	10624	11024	9207	9871	10000	10204
Banana						20000	0	20153	19689	20042
Jute						6352	8686	3333	0	6665
PAGVP	5077	5714	6100	6131	5779	5415	5443	9379	6720	6775

Table 47: Commodity-wise Share in Area and Gross Value : Bihar

		Chakar-meedh	Dhaboli	GAR	Suja	Total	Kharua	Molan-pur	Digiri	Tinpa-nia	Total
Paddy	Area	38	29	31	17	28	38	46	33	33	38
	Value	25	19	23	11	19	24	33	15	21	22
Maize	Area	18	10	15	11	13	1	0	0	13	2
	Value	24	13	12	13	15	0	0	0	9	1
Wheat	Area	31	32	25	38	31	15	15	12	30	17
	Value	25	22	18	27	23	11	10	4	18	9
Pulses	Area	5	5	5	6	5	5	3	5	4	4
	Value	6	5	6	6	6	6	3	3	3	4
Mustard	Area	1	8	4	15	7	13	15	7	1	10
	Value	2	8	4	16	8	15	17	5	1	9
Potato	Area	7	14	7	6	9	6	5	3	0	4
	Value	17	27	13	12	17	13	12	3	0	7
Vegeta-	Area	0	4	14	8	7	12	9	8	1	8
bles	Value	0	6	25	15	12	25	15	8	2	13
Banana	Area						0	0	30	17	11
	Value						1	0	64	50	34
Jute	Area						10	8	3	0	6
	Value						11	12	1	0	6
GSA		100	100	100	100	100	100	100	100	100	100
GVAP		100	100	100	100	100	100	100	100	100	100

Table 48 : Farmers' Category-wise Per Acre Value of Agricultural Produce : Bihar

	Begusarai				Katihar				Bihar			
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Paddy	3957	3762	3889	3879	3639	4164	3740	3863	3769	4020	3795	3869
Maize	6122	6752	6471	6450	7500	3205	2763	4139	6741	6589	6208	6530
Wheat	4137	4168	4279	4173	3644	3714	3600	3664	3913	4000	4189	3976
Pulses	6164	6048	5400	6105	6226	6186	6300	6217	6192	6147	5482	6159
Mustard	6350	6373	6107	6319	6425	5863	6563	6239	6400	6079	6327	6270
Potato	11924	11512	11400	11653	12310	12171	13286	12404	12093	11701	11608	11867
Vege.	10660	11239	9000	10624	10533	9900	10246	10204	10598	10425	9935	10373
Banana					19931	19959	20540	20042	19931	19959	20540	20042
Jute					8361	5771	7143	6665	19931	19959	20540	20042
GVAP Per Acre	5569	5910	6134	5779	6057	7130	8356	6775				

Marketable Surplus and Marketing: Table 49 shows village-wise marketed crops and its proportion with total production.

- Eighty five per cent of total paddy production in Begusarai and 81 per cent in Katihar is sold in the market. The overall average for the State is 81 per cent. Except for one village in Katihar (Madanpora), this proportion is above 80 per cent in all the villages. Thus, it appears marketing of paddy has no structural bottlenecks.

- Paddy (82 per cent), vegetables, (84 per cent), banana (95 per cent) and jute are the major marketed crops in the study area. Wheat (67 per cent), mustard (59 per cent) and maize (58 per cent) are other crops in case of which the marketed component is above 50 per cent. In case of pulses and potato, nearly 46 per cent each of the total production is marketed. The high proportion of marketed output *prima facie* gives the impression that these villages are not just subsistence economy but are having good market linkages. However, inter-village variations are found in economic structure and threes variations are reflected in the composition of marketed commodity.

- Except for one village (Chakarmeedh in Begusarai) which does not grow vegetables, in all other seven villages more than 80 per cent of the output is sold. On an average, 84 per cent of the vegetables production is sold in the market. Vegetables included for the present analysis are perishable commodities like tomato, brinjal, and cauliflower, cabbage, pumpkin, bitter guard, ladyfingers, chillies etc. The only storable vegetable found in the production system is potato. Since it is storable, due to perishable nature of other vegetables, often distress sale also takes place.

- After vegetables, maize and mustard are the two crops, which have marketable surplus. In both the villages, the market proportion of maize output is found to be above 50 per cent. Only in two of the eight villages (Digiri and Molanpur), maize is not grown. Both these villages are located in Katihar. In rest of the villages, maize is essentially an export item to Andhra Pradesh.

- Wheat is an important market item in all the four villages of Begusarai and overall 947 quintals of wheat in Begusarai is sold in the market which is 63 per cent of total production. In Katihar also, 58 per cent of total

Table 49 : Village-wise Marketed Agricultural Produce : Bihar

	Begusarai					Katihar					
Crops	Chakar-meedh	Dhaboli	GAR	Suja	Total	Digiri	Kharua	Molanpur	Tinpa-nia	Total	BIHAR
Paddy	316.5 (87)	272 (80)	398 (87)	205 (86)	1191.5 (85)	535 (90)	542 (90)	427.5 (63)	280 (83)	1785 (81)	2976 (82)
Maze	190(61)	155(71)	114(55)	194(78)	653(66)	00	12(67)	00	143(68)	155(68)	808(67)
Wheat	203(63)	211(60)	179(58)	354(69)	947(63)	77(50)	126(53)	73(41)	134(52)	410(50)	1357(58)
Pulses	19(86)	14(63)	18.5(68)	19.5(62)	71(69)	2.5(8)	11.5(31)	0.5(3)	6.5(47)	21(21)	92(46)
Mustard	3(47)	11(31)	9.5(50)	58.5(67)	82(55)	31(67)	57(63)	50(57)	1(25)	139(61)	221(59)
Potato	4(1)	170(23)	00	359(91)	533(28)	135(69)	404(81)	304(80)	00	843(78)	1376(46)
vege.	00	72.5(84)	313(86)	203.5(86)	589(86)	209(82)	380(82)	205(88)	21(84)	815(83)	1404(84)
Banana	00	00	00	00	00	4510(95)	40(100)	00	1414(97)	5964(95)	5964(95)
Jute	00	00	00	00	00	59(100)	128(100)	113(100)	00	300(100)	300(100)

Note: Figures in parentheses show per cent to total production.

production is marketed, but in absolute terms the quantity marketed is just half of the quantity of Begusarai.

- The village economy of Katihar is distinct from Begusarai mainly because of two key cash crops. Banana, which is grown in Digiri, Kharua and Molanpur, overall nearly six thousand tonnes are sold in the market from these three villages. The entire banana produce is exported to other states mainly to Uttar Pradesh, West Bengal and Tamil Nadu. The second key cash crop in Katihar is jute which is grown in three of the four villages Digiri, Kharua and Molanpur. Nearly 300 quintals per annum is produced in these three villages and the entire produce is sold in the market through the agents of the outside traders mainly coming from Punjab, Uttar Pradesh and Madhya Pradesh.

Village-wise Share in Market Crops: The above analysis may suggest the presence of a very vibrant market economy at the grassroots level in Bihar. However, as we had taken the proportion of output marketed in each of the villages, it does not reflect the true picture of disparities between the developed and underdeveloped villages. Due to very low level of production in some of the villages in case of crops like pulses and mustard, despite this high share of marketed output, their contribution to household economy may not be very significant in real terms. We therefore, analysed the village-wise share in marketed commodities in the total State. Table 50 gives village-wise share in case of each of the marketed commodities from total marketed quantity.

Table 50 shows the share of the villages in the total marketed produce of different crops. The market for maize, wheat and pulses is dominated by the underdeveloped district of Begusarai, but the market for banana, jute, paddy, mustard and to a large extent of vegetables also is dominated by the developed district, Katihar. Thus, the nature of marketable surplus is different for the two districts. When we look at the village level, the unevenness of the commodities marketed from different villages becomes more clear-

a) The share of Suja (one of the developed villages in Begusarai is below even seven per cent in the total paddy marketed in the State. Similarly, the share of Dhaboli (in Begusarai) and Tinpania (in Katihar) is less than ten per cent. The share of three villages in Katihar (Digiri, Kharua and Molanpur) taken together is nearly 50 per cent. Consequently, the share

Table 50: Village-wise Share in Total Marketed Crops : Bihar

Crops	Begsuarai					Katihar					Bihar
	Chakar-meedh	Dhaboli	GAR	Suja	Total	Digiri	Kharua	Molan-pur	Tinpa-nia	Total	Bihar
Paddy	10.64	9.14	13.37	6.89	40.04	17.98	18.21	14.36	9.41	59.96	100.00
Maize	23.51	19.18	14.11	24.01	80.82	0.00	1.49	0.00	17.70	19.18	100.00
Wheat	14.96	15.55	13.19	26.09	69.79	5.67	9.29	5.38	9.87	30.21	100.00
Pulses	20.65	15.22	20.11	21.20	77.17	2.72	12.50	0.54	7.07	22.83	100.00
Mustard	1.36	4.98	4.30	26.47	37.10	14.03	25.79	22.62	0.45	62.90	100.00
Potato	0.29	12.35	0.00	26.09	38.74	9.81	29.36	22.09	0.00	61.26	100.00
Veg	0.00	5.16	22.29	14.49	41.95	14.89	27.07	14.60	1.50	58.05	100.00
Banana	0.00	0.00	0.00	0.00	0.00	75.62	0.67	0.00	23.71	100.00	100.00
Jute	0.00	0.00	0.00	0.00	0.00	19.67	42.67	37.67	0.00	100.00	100.00

of Katihar district in the total marketed paddy is nearly 60 per cent leaving 40 per cent for the other district Begusarai.

b) Eighty one per cent of the total maize, 77 per cent of pulses and 70 per cent of total marketed wheat comes from the Begusarai district. The share of all the villages in Katihar in case of wheat is less than ten per cent. Similar is the case with regard to pulses where except for one village (Kharua), the share of all other villages in Katihar is almost negligible.

c) However, when we look at the oilseeds and other cash crops, the dominance of the villages in Katihar is very clear. Except for only Suja in Begusarai, which alone accounts for nearly 27 per cent of the total marketed mustard, the share of all other villages in the district is negligible. Thus, out of 37 per cent of the district share in marketed mustard, 27 per cent comes from only one village. The share of two villages in Katihar in the same is above 20 per cent and in case of one village above 14 per cent. Sixty three per cent of total mustard marketed comes from Katihar district only.

d) Same is the case with potato as Katihar alone accounts for more than 60 per cent of the total marketed quantity. However, all the marketable surplus comes from two villages only. Similar is the situation in Begusarai which accounts for nearly 39 per cent of the total marketed potato but more than 26 per cent comes from one village only (Suja) and 12 per cent from another village Dhaboli. The share of the rest of the two villages is near zero. Thus, out of eight districts in the study area, the entire potato to the market is coming from four villages only.

e) Katihar has a monopoly situation with regard to banana and jute. In fact, these two crops are not grown at all in the villages of Begusarai. In Katihar also, the production of banana is confined mainly to Digiri and Tinpania and these two villages account for more than 99 per cent of the total marketed banana. Similarly, jute is grown in three of the villages in Katihar namely, Digiri, Kharua and Molanpur.

Farmers' Category-wise Producers and Sellers: We have seen the extent of marketed surplus among the eight villages under study. However, as wide variations in the cropping pattern were found according to different categories of

the farmers, we have analysed the number of farmers producing different commodities and selling in the market. As obvious, not all the farmers are producing all the commodities. Table 51 shows the number of farmers commodity-wise producing and marketing the crop produce. The farmers' category-wise production and sale of agricultural commodities reveal some interesting trends-

i) As against 100 per cent of the large farmers and 93 per cent of the small farmers, only 60 per cent of the marginal farmers are producing paddy. However, all the farmers producing paddy are also selling in the market. Thus, paddy as such has no problem of marketing and market is an important consideration for all categories of farmers who are cultivating paddy. The proportion of paddy cultivators is slightly lesser in Begusarai where 90 per cent of the large farmers and 80 per cent of the small farmers are cultivating paddy. Only 43 per cent of the marginal farmers in Begusarai are cultivating paddy. However, as witnessed in case of Katihar, all the farmers cultivating paddy are linked to the market.

ii) From the point of view of cropping pattern and occupational involvement, wheat is the second most important crop for large farmers as hundred per cent of the farmers in both the districts are cultivating wheat. All the large farmers in Begusarai are selling also whereas however, in Katihar 19 out of 20 producers are selling their product in market. Thirty eight (95 per cent) of small farmers in Begusarai and 24 (60 per cent) farmers in Katihar are doing wheat cultivation. However, while 35 farmers in Begusarai (92 per cent) are selling wheat, only 16 farmers (67 per cent) are doing so in Katihar. Twenty nine marginal farmers or 73 per cent of the total marginal farmers in Begusarai are cultivating and ten of them are marketing it. Thus, marginal farmers are growing wheat mainly for self-consumption. Wheat, however is not very popular among the marginal farmers in Katihar as only six out of forty are producing and all of them are producing for self-consumption.

iii) Production and sale of banana and jute are exclusively in Katihar, that too confined to two villages (Table 50). From the large farmers' point of view, pulses in Begusarai and oilseeds in Katihar are important crops as 18 farmers in Begusarai and 15 farmers in Katihar are engaged in the production of these two crops, respectively. Nearly all of them are marketing their produce. Next in order of importance are maize and potato (17 and

16 farmers, respectively) in Begusarai and potato in Katihar as 19 out of 20 farmers are engaged in cultivation of these two crops. Maize is popular among all categories of the farmers in Begusarai who are producing and selling it.

iv) One very important observation that can be drawn from Table 51 is the dominance of small farmers and marginal farmers in vegetable growing and marketing. Out of 42 vegetable growers in Begusarai, 21 (50 per cent) belong to the category of the small farmers and another 13 (31 per cent) are marginal farmers. Thus, more than 80 per cent of the farmers engaged in vegetable cultivation belong to these two categories. The proportion is higher when we look at the number of farmers selling the vegetable. Out of 39 farmers who are selling vegetable, 34 or more than 87 per cent belong to these two categories. Similar is the case in Katihar where 41 of the 52 farmers engaged in vegetable cultivation are small and marginal farmers.

v) Overall, we may say that among the foodgrains, paddy is the only commodity which is produced and sold by nearly all the categories of the farmers in both the districts. Among the non-food crops, pulses, mustards, oilseeds, potato and vegetables are some of the important crops which are being grown and marketed by almost all categories of the farmers in one village or the other. The study area has only two pure commercial crops, banana and jute, besides vegetables which are sold in the market by all categories of the farmers, but their proportion to total farmers is just around 50 per cent.

Farmers' Category-wise Marketable Surplus: Table 52 shows the category-wise share of the marketed output of different agricultural produce. The proportion of the marketed output for paddy (82 per cent) and maize (67 per cent) among the food crops is fairly high for the State as a whole. This share is equally high regardless of the status of farm households (Tables 52 and 53). Only 58 per cent of the wheat is marketed, that too mainly because of the large farmers whose marketable surplus is above 70 per cent. In case of both small and marginal farmers, the marketable surplus is below 45 per cent. Pulses are the weakest link in the agricultural production system in the State. The situation is specifically bad in Katihar where only 20 per cent of the production is marketed though the overall State average is 46 per cent. Similar is the case with potato

Table 51: Category-wise Farmer-Producers and Sellers : Bihar

District/	Large Farmers		Small Farmers		Marginal Farmers		Total	
Crops	Producing	Selling	Producing	Selling	Producing	Selling	Producing	Selling
Begusarai								
Paddy	18 (90)	18	32 (80)	32	17 (43)	17	67 (67)	67 (100)
Maze	17 (85)	17	34 (85)	27	26 (65)	25	77 (77)	69 (90)
Wheat	20 (100)	20	38 (95)	35	29 (73)	10	87 (87)	65 (75)
Pulses	18 (90)	17	8 (20)	1	1 (0.3)	1	27 (27)	19 (71)
Mustard	12 (60)	11	20 (50)	13	9 (23)	2	41 (41)	26 (63)
Potato	16 (80)	6	23 (58)	8	12 (30)	4	51 (51)	18 (35)
Vegetables	8 (40)	8	21 (53)	20	13 (33)	11	42 (42)	39 (93)
Katihar								
Paddy	20 (100)	20	37 (93)	37	24 (60)	24	81 (81)	81 (100)
Maze	4 (20)	4	10 (25)	8	3 (8)	3	17 (17)	15 (88)
Wheat	20 (100)	19	24 (60)	16	6 (15)	0	50 (50)	35 (70)
Pulses	19 (95)	10	14 (35)	1	1 (3)	0	34 (34)	11 (32)
Mustard	15 (75)	15	19 (48)	13	9 (23)	2	43 (43)	30 (70)
Potato	11 (55)	11	10 (25)	9	9 (23)	7	30 (30)	27 (90)
Vegetables	11 (55)	11	23 (58)	21	18 (45)	18	52 (52)	50 (96)
Banana	10 (50)	10	19 (48)	19	11 (28)	11	40 (40)	40 (100)
Jute	6 (30)	6	16 (40)	16	29 (73)	29	51 (51)	51 (100)

in Begusarai where only 28 per cent of the potato output is sold in the market against the State average of 46 per cent. The following broad features of marketed surplus may be noted according to the farmers' category-

Large Farmers:

a) The proportion of marketed surplus is quite high in the underdeveloped district Begusarai in case of paddy and vegetables when compared with the developed district Katihar. More than 90 per cent of paddy and vegetables produced by large farmers in Begusarai is marketed. Compared to this, only 79 per cent of paddy and 84 per cent of the vegetables produced by the large farmers is sold.

b) The proportions of output of wheat, maize and pulses vary between 79 per cent and 75 per cent in Begusarai. Thus, large farmers have very strong position with regard to marketing of the food crops in Begusarai. Compared to 322 quintals of maize produced in Begusarai, only 100 quintals is the output in Katihar. But more than 80 per cent of this is sold in the market by the large farmers. However, the position of large farmers in Katihar with regard to mustard (with more than 74 per cent marketed surplus), potato (83 per cent), vegetables (84 per cent) , banana (97 per cent) and jute (100 per cent) is very strong on the front of the cash and commercial crops. This has resulted into large income gap between the two districts among the farmers in this category.

Small Farmers: Like large farmers, inter-district differences are found in the category of small farmers also regarding the nature of the commodities produced and marketed.

a) The extent of marketed surplus in case of small farmers is above 80 per cent in case of only two crops in Begusarai- paddy and vegetables. The number of such crops in Katihar goes up to four- paddy, vegetables, banana and jute. All these crops, except for paddy, are cash crops and affect the income level quite significantly in the district.

b) However, of these four crops, banana is concentrated in only two villages, Digiri and Tinpania, and jute is concentrated only in Kharua and Molanpur. The situation with regard to most of the other crops in Katihar is similar to Begusarai. Fifty nine per cent of maize, 51 per cent of wheat and 46 per

cent of mustard produced by the small farmers enter the market in Begusarai. As against this, 74 per cent of potato, 57 per cent of maize and 51 per cent of mustard produced by small farmers in Katihar is marketed.

***Marginal Farmers**:* The proportion of production marketed in case of marginal farmers is significant in case of paddy (85 per cent), vegetables (78 per cent), maize (63 per cent), mustard (63 per cent), pulses (63 per cent) and wheat (45 per cent) in Begusarai. However, despite these high proportions of marketed surplus, their actual share in the total market is very low. In case of Katihar, banana (95 per cent), jute (100 per cent), vegetables (79 per cent), paddy (73 per cent), and maize (49 per cent) are the main marketed commodities by this category of the farmers. However, except in case of jute and vegetables, their share in the total district production and market is fairly low.

***Farmers' Category-wise Share in Production and Marketed Production**:* We have seen earlier the proportion of different commodities produced and marketed in case of each category for the farmers separately. This gives a very realistic picture that most of the crops grown by small and marginal farmers are subjected to market process. While this has very important policy implications, it does not reveal the true picture of the status of small and marginal farmers in the total market.

In Table 53 the share of different categories of the farmers in case of each crop is shown in terms of production and marketed component.

- We have seen earlier that all the farmers producing paddy are also selling in the market. It was found that nearly 100 per cent of the paddy growers are also selling in the market. However, in terms of proposition of total production of the State, both production and market for paddy is dominated by large farmers, small farmers account for nearly 40 of total output and 41 per cent of the market. Thus, despite high marketable surplus at the individual household, the share of marginal farmers is pathetically low at just ten per cent of total production and nine per cent of total market.
- Maize, however, reflects a slightly more balanced picture. In the backward district, maize production and market is quite evenly distributed as far as production is concerned (Table 53). Twenty nine per cent of the total maize production comes from the marginal farmers. The same proportion for small and large farmers is 33 and 38 per cent, respectively. The

Table 52: Farmers' Category-wise Production and Marketed Surplus : Bihar

		Begusarai				Katihar				Bihar			
Sum		LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Paddy	P	765	489	140	1394	1019	967	229	2215	1784	1456	369	3609
	M	694	403	94.5	1191.5	806	811.5	167	1784.5	1500)	1214.5	261.5	2976
		(91)	(82)	(68)	(85)	(79)	(84)	(73)	(81)	(84)	(83)	(71)	(82)
Maize	P	322	363	300	985	100	94	35	229	422	457	335	1214
	M	251	213	189	653	84	54	17	155	335	267	206	808
		(78)	(59)	(63)	(66)	(84)	(57)	(49)	(68)	(79)	(58)	(61)	(67)
Wheat	P	724	496	279	1499	532	260	36	828	1256	756	315	2327
	M	570	251	126	947	327	83	00	410	897	334	126	1357
		(79)	(51)	(45)	(63)	(61)	(32)		(50)	(71)	(44)	(40)	(58)
Pulses	P	89	8	6	103	75	22	1	98	164	30	7	201
	M	67(75)	1(6)	4(67)	71(69)	21(27)	1(2)	00	21(21)	87(53)	1(3)	4(60)	92(46)
Mustard	P	64	61	24	148	129	77	24	229	192	138	47	377
	M	39(61)	28(46)	15(63)	82(55)	95(74)	39(51)	5(21)	139(61)	134(70)	67(49)	20(42)	221(59)
Potato	P	787	670	437	1894	636	284	155	1075	1423	954	592	2969
	M	388	123	22	533	528	209	106	843	916	332	128	1376
		(49)	(18)	(5)	(28)	(83)	(74)	(68)	(78)	(64)	(35)	(22)	(46)
Veg.	P	334	266	87	687	316	363	298	977	650	629	385	1664
	M	304	218	68	589	267	313	235	815	571	531	303	1404
		(91)	(82)	(78)	(86)	(84)	(86)	(79)	(83)	(88)	(84)	(79)	(84)
Banana	P	0	0	0	0	2312	2914	1027	6253	2312	2914	1027	6253
	M	00	00	00	00	2235	2755	974	5964	2235	2755	974	5964
						(97)	(95)	(95)	(95)	(97)	(95)	(95)	(95)
Jute	P	0	0	0	0	51	130	119	300	51	130	119	300
	M	00	00	00	00	51	130	119	300	51	130	119	300
						(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

market, however, is more uneven and only 19 per cent of total marketed maize is accounted for by the marginal farmers compared to 48 and 33 per cent in case of large farm households and small farmers, respectively. This evenness is totally missing in the developed district of Katihar where marginal farmers account for nearly 15 per cent of output and 11 per cent of market.

- Mustard in Begusarai is the other food crop in case of which marginal farmers' performance is fairly good. As against 16 per cent of total production, marginal farmers account for 18 per cent of the total marketed quantity. Similarly, in Katihar, marginal farmers account for 13 per cent of the total potato market.

- Overall, it may be observed that market for paddy, wheat, pulses and potato in Begusarai is completely dominated by the large farmers, with small farmers playing the secondary best important role. The marginal farmers do not have much at stake and hence by and large, remain unaffected by any policy of minimum support price or other market development policies. The dominance of large farmers in paddy is slightly lesser and the small farmers are on par with them in Katihar. However, in case of wheat, pulses, mustard and potato, the large farmers play a dominant role as they account for 80, 98, 68 and 63 per cent, respectively in the total marketed quantities. Thus, the small farmers stand on much weaker footing in the agriculturally progressive district reflecting that agricultural development has mainly confined to large farmers in Katihar and has yet to touch the small and marginal farmers.

- The silver lining, however, seem to be the area of cash crops. The share of small farmers in case of vegetables, banana and jute in Katihar is higher in case of small farmers when compared to large farmers, small farmers alone account for 37 per cent of production and 38 per cent of marketed quantity in Katihar compared to 32 and 33 per cent, respectively in case of large farmers. Marginal farmers account for 31 per cent of total production and 29 per cent of total market. We have seen earlier that the number of paddy growers in these two categories have been much less than what would have been the normal State average.

Pattern of Income Distribution: As mentioned earlier, the sample size of the farmers consists of 20 per cent of large/medium, and 40 per cent of small farmers

Table 53: Farmers' Category-wise Share in Production and Marketed Produce : Bihar

		Begusarai				Katihar				Bihar			
		LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Paddy	P	55	35	10	100	46	44	10	100	49	40	10	100
	M	58	34	8	100	45	45	9	100	50	41	9	100
Maize	P	33	37	30	100	44	41	15	100	35	38	28	100
	M	38	33	29	100	54	35	11	100	41	33	25	100
Wheat	P	48	33	19	100	64	31	4	100	54	32	14	100
	M	60	27	13	100	80	20	0	100	66	25	9	100
Pulses	P	86	8	6	100	77	22	1	100	82	15	3	100
	M	94	1	6	100	98	2	0	100	95	1	4	100
Mustard	P	43	41	16	100	56	33	10	100	51	36	13	100
	M	48	34	18	100	68	28	4	100	61	30	9	100
Potato	P	42	35	23	100	59	26	14	100	48	32	20	100
	M	73	23	4	100	63	25	13	100	67	24	9	100
Veg.	P	49	39	13	100	32	37	31	100	39	38	23	100
	M	52	37	11	100	33	38	29	100	41	38	22	100
Banana	P	0	0	0	0	37	47	16	100	37	47	16	100
	M	0	0	0	0	37	46	16	100	37	46	16	100
Jute	P	0	0	0	0	17	43	40	100	17	43	40	100
	M	0	0	0	0	17	43	40	100	17	43	40	100

and 40 per cent of marginal farmers/ agricultural labourers. The results show high differences in the share of each category of the farmers in total income generated at the village level. Tables 54 and 55 show the total income generated in the eight villages and aggregated at the district level in the two districts and State level, respectively. The following major observations may be drawn from the two Tables-

- In Begusarai district, 20 per cent of the large farmers (20 in number) share 39 per cent of the total household income and account for only 22 per cent of the population whereas 40 per cent of the small farmers accounting for 41 per cent of population share only 33 per cent of the total income. Similarly, marginal farmers account for 37 per cent of the population and only 28 per cent of the total household income.
- The disparities are slightly higher in the developed district (Katihar) where the large farmers account for nearly 19 per cent of total population and 40 per cent of the total household income. The small farmers account for 40 per cent of the total population and 38 per cent of the income. The disparity between large farmers and small farmers is comparatively lesser in the developed district than in the backward district. As we shall see in the section on agriculture, the small farmers in Katihar are in fact doing much better when compared to Begusarai and therefore, the difference between them and large farmers is lesser. The marginal farmers, however, are worse-off in the developed district.
- The share of the large farmers in both the districts, as expected, is highest in total agriculture produce, 46 per cent in Begusarai and 44 per cent in Katihar. The proportionately lower share of the large farmers in Katihar is mainly because of higher share of small farmers (39 per cent compared to 34 per cent in Begusarai). Marginal farmers account for only 17 per cent of the total agricultural income in Katihar compared to nearly 20 per cent in Begusarai. The inequality between marginal farmers and small farmers is lower in underdeveloped conditions than in developed conditions.
- Leasing practices are prevalent in both the districts. The most significant dimension of income distribution across the different categories of the farmers is the rentals. In fact, in both the districts, the share of large and marginal farmers in total rental income is nearly the same which means the leasing out of land is equally practised by the large and marginal farmers (however, as proportion of total land owned it is much higher among the marginal farmers). The phenomenon of “reverse tenancy” is

therefore, found in both the districts. Forty seven per cent of the total rental income in Begusarai and 51 per cent in Katihar goes to large farmers. Compared to this, 44 per cent of the rental income in Begusarai and 48 per cent in Katihar is cornered by the marginal farmers. The share of small farmers in the total rental income in Begusarai is nearly nine per cent but negligible in Katihar. The impediments to agriculture are thus, felt maximum by the marginal farmers who instead of cultivating the land themselves prefer to lease it out. Overall rent constitutes around 3 per cent of the total household income in each of the districts. Income from rent as proportion to total income is higher in case of marginal farmers though in absolute sense it is much lower compared to large farmers. Rentals are highest in Katihar due to higher value of land and higher level of income. The earning by leasing out of land in Katihar is nearly equal for large farmers and marginal farmers. However, due to small holding of the marginal farmers, the impact of leasing out is felt maximum in case of marginal farmers as their share in total agricultural income is just about 17 per cent.

- Another significant difference that can be seen from Table 54 is the income from the implements. Marginal farmers, though owning much less land, have ownership over primary agricultural implements like bullocks (mostly financed under the rural development programme), bullock carts and even ploughs and earn by renting them out in Begusarai. In fact, the renting out is not independent of their labour. Thus, most of the marginal farmers who also work as agricultural labourers use their own implements. However, since rental income constitutes only three per cent of the total household income in Begusarai (Table 56) and 75 per cent of this is accounted for by the marginal farmers, this high income share in the rentals is not much in absolute sense.

- Livestock is an important activity in both the districts, especially for the small farmers. Livestock contributes more than 7.5 per cent in the total household income in Begusarai and almost 2.5 per cent in Katihar (Table 56). However, the total income generated in the livestock sector is unevenly distributed among the three categories of the farmers. Small farmers appear to be most diversified in this respect. More than 60 per cent of the income from livestock comes from small farmers in Katihar where the importance of livestock is lower compared to the underdeveloped district Begusarai. However, in Begusarai also the share of the small farmers in total livestock income is highest-44 per cent (Table 54). The share of large farmers (29 per cent) and marginal farmers (27 per cent) in Begusarai is nearly equal.

Table 54: Category-wise Distribution of Total Sectoral Income (Districts) : Bihar

	Begusarai							
Farmer type	Large	Small	Marginal	Total	Large	Small	Marginal	Total
Agriculture	1233460	914966	526350	2674776	46.11	34.21	19.68	100
Rent	52500	10000	50000	112500	46.67	8.89	44.44	100
Implements	11000	2500	40000	53500	20.56	4.67	74.77	100
Livestock	82000	125000	74500	281500	29.13	44.40	26.47	100
Wages	0	108000	154000	262000	0.00	41.22	58.78	100
Small business	60000	23500	142000	225500	26.61	10.42	62.97	100
Remittances	16900	52900	53300	123100	13.73	42.97	43.30	100
THI	1455860	1236866	1040150	3732876	39.00	33.13	27.86	100
TP	209	401	357	967	21.61	41.47	36.92	100
PHI	72793	30922	26004	37329	195	83	78	100
PCI	6966	3084	2914	3860	180	80	75	100
	Katihar							
Agriculture	1692420	1495260	661470	3849150	43.97	38.85	17.18	100
Rent	80000	500	75000	155500	51.45	0.32	48.23	100
Implements	10000	6000	3000	19000	52.63	31.58	15.79	100
Livestock	16000	72200	29500	117700	13.59	61.34	25.06	100
Wages	11000	21000	110000	142000	7.75	14.79	77.46	100
Small business	70000	194000	125500	389500	17.97	49.81	32.22	100
Remittances	14400	42000	61000	117400	12.27	35.78	51.96	100
THI	1893820	1830960	1065470	4790250	39.53	38.22	22.24	100
TP	194	417	426	1037	18.71	40.21	41.08	100
PHI	94691	45774	26637	47903	198	96	56	100
PCI	9762	4391	2501	4619	211	95	54	100

Table 55: Category-wise Distribution of Total Sectoral Income (Bihar State)

Farmer Type	Large	Small	Marginal	Total	Large	Small	Marginal	Total
Agriculture	2925880	2410226	1187820	6523926	44.85	36.94	18.21	100
Rent	132500	10500	125000	268000	49.44	3.92	46.64	100
Implements	21000	8500	43000	72500	28.97	11.72	59.31	100
Livestock	98000	197200	104000	399200	24.55	49.40	26.05	100
Wages	11000	129000	264000	404000	2.72	31.93	65.35	100
Small Business	130000	217500	267500	615000	21.14	35.37	43.50	100
Remittances	31300	94900	114300	240500	13.01	39.46	47.53	100
THI	3349680	3067826	2105620	8523126	39.30	35.99	24.70	100
TP	403	818	783	2004	20.11	40.82	39.07	100
PHI	167484	76696	52641	85231	197	90	62	100
PCI	8312	3750	2689	4253	195	88	63	100

Livelihood Options and Income Structure: Table 56 shows the relative contribution of different sources of income in each category of the farmers. Source-wise composition of income shows the relative importance of the different economic activities for the farmers and also shows the livelihood options available to the farmers as means of sustenance.

Medium and Large Farmers

- Agriculture is the main source of income for medium and large farmers. Agriculture contributes 72 per cent of the total income in Begusarai and 80 per cent in Katihar. Against these averages, the dependency of large farmers on agriculture is highest in both the districts (85 per cent in Begusarai and 89 per cent in Katihar).
- The importance of other sectors varies in the two districts. In Begusarai, livestock (5.63 per cent) followed by small business (4.12 per cent) and rentals (3.61 per cent) are the other sources of income. Compared to this, rentals (4.22 per cent) and small business (3.70 per cent) are the other two main sources of income. Livestock, thus, does not play much significant role in the developed district as far as medium and large farmers are concerned.

Small Farmers

- Seventy four per cent of the total household income in Begusarai and 82 per cent in Katihar originates in agriculture sector in case of small farmers. In case of the underdeveloped district (Begusarai), livestock (10.11 per cent) and wages (8.73 per cent) and remittances (4.28 per cent) are the other main components of income. Small business contributes just about two per cent in their case.
- Compared to this, small farmers depend more on small business (10.60 per cent) after agriculture. Livestock (3.94 per cent), remittances (2.29 per cent) and wages (1.15 per cent) are the other sources of income. Some proportion of the small farmers, thus, has to depend on the wage works also for their sustenance even in the developed villages.

Marginal Farmers

- The dependency of marginal farmers (51 per cent in Begusarai and 62 per cent in Katihar) is much lower on agriculture when compared to the

large, medium and small farmers. Compared to Begusarai, the dependency of marginal farmers on agriculture is appreciably higher in Katihar, despite the fact that some of the marginal farmers do not cultivate their land and rent it out. This is explained by the fact of higher household income in case of the developed villages where banana and jute cultivation is prevalent.

- The next main source of income for marginal farmers, as expected, is wage works which include both, the works as agricultural labourers and other wage works.
- While agriculture is predominantly the main income generating sector, the importance of other sectors differs in the two districts. In the developed district, the second main source of income is small business (including informal trade). Small business contributes around eight per cent of the total district income. However, the importance of this sector is highest for the marginal and small farmers. Nearly 15 per cent of the household income of marginal farmers in Begusarai and more than ten per cent in Katihar, comes through wage employment.
- Small business is equally important in both the categories of the districts. More than 13 per cent of the total household income in Begusarai and nearly 12 per cent of the total household income in Katihar comes through small business or informal trade in case of marginal farmers.
- Livestock (in the underdeveloped district) and rentals (in the developed district) play an important role in the total household income as their share is more than seven per cent respectively, in the two districts.
- One very important source of income to the marginal farmers is remittances by the migrants. In both the districts, the share of remittances in the total household income is above five per cent and ranks fifth in terms of importance.
- Another significant source of earning for marginal farmers is by renting out bullocks and bullock carts (in Begusarai). This source alone constitutes nearly four per cent of the total income of the marginal farmers.

Table 56: Source-wise Distribution of Income : Bihar

	Begusarai				Katihar				Bihar			
Farmer Type	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Agriculture	85	74	51	72	89	82	62	80	87	79	56	77
Rent	4	1	5	3	4	neg	7	3	4	neg.	6	3
Implements	1	neg	4	1	1	neg	neg	neg.	1	neg.	2	1
Livestock	6	10	7	8	1	4	3	2	3	6	5	5
Wages	0	9	15	7	1	1	10	3	neg.	4	13	5
Small business	4	2	14	6	4	11	12	8	4	7	13	7
Remittances	1	4	5	3	1	2	6	2	1	3	5	3
Total	100	100	100	100	100	100	100	100	100	100	100	100

Inter-district Income Disparities: Very significant differences in the per capita income level among the villages and among different categories of the farmers were found in the study area. As against the average per capita income of Rs. 4253 for the State as a whole, the same is found to be Rs. 4619 in Katihar and Rs 3860 in Begusarai. Thus, the per capita in income in Begusarai is below average and is lower by Rs. 759 when compared with the developed district Katihar. While at the aggregate level this difference is not much, it is quite glaring when we compare the different categories of the farmers across the districts as well as within the district. The average per capita income from all sources for a large farmer is Rs. 9762 in Katihar compared to Rs. 6966 in Begusarai (a difference of Rs. 2796). This difference is appreciably apparent in case of small farmers (the per capita income of small farmers in Begusarai is less by Rs. 1287 when compared to Katihar). In case of marginal farmers, the level of income is marginally higher in the underdeveloped district Begusarai (Rs.2914) when compared with the developed district (Rs. 2501 in Katihar). One primary reason for this is the different livelihood patterns in the two districts as far as marginal farmers are concerned (Table 57).

Inter-village Income Disparities: The income differences are much more glaring within the region and among the different categories of the farmers. Table 57 shows the per capita income levels among the villages across the different categories of the farmers.

Among the eight villages, per capita income is highest in Digiri (one of the developed villages in Katihar), followed by Kharua (another developed village in the same district). The lowest per capita income, incidentally is also witnessed in Katihar only (Tinpania village). Both these villages are located in the same block. This itself shows the disparities within the block of a district. The difference between the highest per capita income (Rs. 9003 in Digiri) and the lowest per capita income (Rs. 2801 in Tinpania) is fairly big. The village with lowest per capita income has just 31 per cent of the income of the highest village. In three out of four villages in Katihar, the average per capita income is lower than the overall average for the district. The overall coefficient of the variation for Katihar district is around 0.57 which itself is an indicator of the inter-village disparities in income levels.

Compared to the coefficient of variation of 0.57 in Katihar, the same is just 0.20 in Begusarai. Income disparities, thus, are less pronounced in case of the underdeveloped district because of the general level of underdevelopment

across the villages. However, not much of difference would be there if Digiri (developed village in Katihar) is not considered for the analysis. In other words, but for one village, the income disparities between the developed and underdeveloped are not so pronounced. The highest per capita income in Begusarai (Rs.4588 in Ganagarho village) is just 51 per cent of the per capita income in Digiri (Katihar). Moreover, the highest village income in Begusarai (Gangarho) is even lower than the district average for Katihar. However, within the district of Begusarai, income is more evenly distributed as two of the four villages have per capita income level above the district average. The coefficient of variation in case of Begusarai is therefore, much lower- just 0.20 compared to 0.57 in Katihar.

Table 57: Category-wise and Village-wise Per Capita Income : Bihar

	Medium and Large	Small Farmers	Marginal Farmers	Total
Digiri	19369	7994	4850	9003
Tinpania	6659	2989	1002	2801
Kharua	9448	4723	2123	4594
Molanpur	5828	2837	2900	3373
Total Katihar	9762(0.60)	4391(0.52)	2501(0.60)	4619(0.57)
CHK	6285	2148	3365	3447
Gang	9841	2756	4057	4588
Dhaboli	5447	3132	1564	2990
Suja	6742	4490	3067	4520
Total Begusarai	6966(0.27)	3084(0.32)	2914(0.35)	3860(0.20)
Bihar	8312(0.53)	3750(0.48)	2689(0.44)	4253(0.45)

Inter- class Income Disparities at District Level: Large income disparities were found among the same categories of the farmers in the two districts**.** However, the income disparities among different categories of the farmers were found to be quite opposite to each other in the two districts. In the developed district (Katihar), intra-group disparities were found to be highest among the large farmers. The coefficient of variation of income in case of large farmers was marginally above 0.60, followed by 0.52 in case of small farmers and again 0. 60 in case of

marginal farmers. Thus, disparities exist among all the categories of the farmers in Katihar, but are comparatively higher in case of large and marginal farmers when compared with small farmers.

The highest per capita income was recorded by large farmers in Digiri village (Rs.19369) whereas the lowest income was recorded by Molanpur village (Rs.5828 which is just 30 per cent of the average per capita income of the large farmers in Digiri). Thus, keeping in pattern with the village income, the disparities among large farmers is maximum in the developed block (Kodha).

These trends are slightly different in case of Begusarai where an increase in the disparities is witnessed as we moved down from large to marginal farmers. The disparities are lowest in case of large farmers (0.27) and highest in case of marginal farmers (0.35).

Poverty: We have used the state-specific poverty line of Rs 330 per capita per month to calculate the poverty among the farm households. Table 58 shows the number of households below poverty line in each category of the farmers and their share in total poor in the villages and districts. Similarly, Table 59 shows farmers' category-wise poverty incidence.

Table 58: Category-wise Distribution of Below Poverty Line Households : Bihar

Village	LF	SF	MF	Total
Chakarmeedh	1(6.25)	8(50)	7(43.75)	16(100)
Gangaraho	0(0)	8(57.14)	6(42.88)	14(100)
Dhaboli	1(5.26)	8(42.11)	10(52.63)	19(100)
Suja	1(9.09)	2(18.18)	8(72.73)	11(100)
Total Begusarai	3(5)	26(43.33)	31(51.67)	60(100)
Digiri	0	0	6(100)	6(100)
Tinpania	0	8(44.44)	10(55.56)	18(100)
Kharua	0	4(36.36)	7(63.34)	11(100)
Molanpur	1(5.88)	9(52.94)	7(41.18)	17(100)
Total Katihar	1(1.92)	21(40.38)	30(57.69)	52(100)
Overall	4(3.47)	47(41.96)	61(54.46)	112(100)

Farmers' Category-wise Poverty Incidence

a) As expected, the maximum incidence of poverty is among the marginal and landless households. On an average, 76 per cent of the marginal farmers are below poverty line. The incidence of poverty among the marginal farm households is slightly higher in Begusarai (77.5 per cent) than in Katihar (76.25 per cent).

b) A closer look at Table 58 shows that in two out of eight villages (Dhaboli in Begusarai and Tinpania in Katihar), all the households in the category of marginal farmers are below poverty line.

c) The proportion of the small farm households below poverty line is also fairly high-65 per cent in Begusarai and nearly 53 per cent in Katihar. However, village-wise situation is fairly bad in Begusarai wherein three out of the four villages the proportion of small households below poverty line is 80 per cent. Compared to this, in one village in Katihar (Digiri) no small farm household is below poverty line whereas in the other developed village of Katihar this proportion is 40 per cent.

d) Fifteen per cent of the large farm households in Begusarai and five per cent in Katihar are also found to be below poverty line. In fact, only one out of 20 large farmers' households in Katihar was found to be below poverty line as against three in Begusarai.

e) The spread of poverty among different categories of the farmers clearly reflects that agricultural development has mainly affected the large farm households and the status of the small and marginal farmers remains to be vulnerable in both the districts with the exception of Digiri village in Katihar (where no small farmer was found to be below poverty line) and Suja where only two households in this category were below poverty line. If we leave out these two villages, the poverty ratio among the small farmers in the rest of the six villages will be around 80 per cent which reflects that small farmers are equally, if not more, vulnerable and poverty stricken as the marginal farmers. The situation of the marginal farmers in fact is marginally better in certain cases due to occupational diversity.

Table 59 : Per cent Households Below Poverty Line : Bihar

Village	LF	SF	MF	Total
Chakarmeedh	20	80	70	64
Gangaraho	0	80	60	56
Dhaboli	20	80	100	76
Suja	20	20	80	44
Begusarai	15	65	77.5	60
Digiri	0	0	60	24
Tinpania	0	80	100	72
Kharua	0	40	70	44
Molanpur	20	90	70	68
Katihar	5	52.5	75	52
Overall	10	58.75	76.25	56

Employment Status:Table 60 shows the break-up of the total population into adult male and female population, employed males and females and unemployed males and females. Forty seven per cent of the total population in the study area belongs to the age group of 15- 59 years of whom nearly 54 per cent are males. The Table also shows the number of male and female workers per household as well as total potential employment in terms of mandays in the two districts. We find that on an average due to very large family size per household has got nearly five potential workers- two females and three males. The average potential mandays available in the study area is more than 1200 mandays. No significant differences were found in terms of per household potential workers across the villages or across the farmers' categories.

Sectoral Distribution of Employment: Although no significant difference was found in the work participation rates of the adult population in the two districts, yet major differences were found in the employment pattern of the employed workforce. Table 61 shows the proportion of the adult population employed in different sectors.

a) We may note from Table 61 that on an average the employed adult population as per cent of total adult population is around 61 per cent, the proportion of employed is significantly high among the marginal farmers

Table 60 : Adult Population and Potential Mandays : Bihar

	Behus				Kat				Bihar			
Farmer Type	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Total population	207	415	415	1037	201	388	378	967	408	803	793	2004
Total adult population	94	191	171	456	89	197	191	477	183	388	362	933
Adult population as per cent of total population	45	46	41	44	44	51	51	49	45	48	46	47
Total adult males	52(55)	101(53)	95(56)	248(54)	45(51)	105(53)	105(55)	255(53)	97(53)	206(53)	200(55)	503(54)
Total adult females	42	90	76	208	44	92	86	222	86	182	162	430
Male workers per household	3	3	2	2	2	3	3	3	2	3	3	3
Female workers per household	2	2	2	5	2	2	2	2	2	2	2	2
Average number of workers per household	5	5	4	5	4	5	5	5	5	5	5	5
Potential male employment	707	687	646	675	612	714	714	694	660	700	680	684
Potential female employment	571	612	517	1240	598	626	585	604	585	619	551	585
Total potential employment	1278	1299	1163	1240	1210	1340	1299	1297	1244	1319	1231	1269

Table 61: Sex-wise Employment Status: Actual and Potential : Bihar

Farmer	Total adult members in the family	Sector-wise Employment Status							Total	Per cent adults employed
		Own cultivation	Others' field	Wage workers	HH labour	Small business	Other activities	Migrants		
Begusarai										
LF	94	42(81)	0	0	0	1(1.92)	0	9(17.30)	52(100)	55.32
SF	191	70(70)	0	4(4.70)	1(1.18)	1(1.18)	1(1.18)	8(9.41)	85(100)	44.50
MF	171	61(49.59)	22(17.89)	27(21.95)	0	0	0	13(10.57)	123(100)	71.93
Total	456	173(66.54)	22(8.46)	31(11.92)	1(0.38)	2(0.77)	1(0.38)	30(11.54)	260(100)	57.02
Katihar										
LF	89	34(69.38)	1(2.04)	8(16.33)	0	3(6.13)	0	3(6.13)	49(100)	55.06
SF	197	75(63.55)	12(10.17)	7(5.93)	3(2.54)	12(10.17)	1(0.85)	8(6.78)	118(100)	59.90
MF	191	62(44.60)	39(28.06)	17(12.23)	1(0.72)	6(4.32)	1(0.72)	13(9.35)	139(100)	72.77
Total	477	171(55.88)	52(16.99)	32(10.46)	4(1.31)	21(6.86)	2(0.65)	24(7.84)	306(100)	64.15
Bihar										
LF	183	76(75.24)	1(0.99)	8(0.79)	0	4(3.96)	0	12(11.88)	101(100)	55.19
SF	388	145(71.42)	12(5.92)	11(5.42)	4	13(6.40)	2(0.98)	16(7.88)	203(100)	52.32
MF	362	123(46.95)	62(23.66)	44(16.79)	1(0.38)	6(2.29)	1(0.38)	26(9.92)	262(100)	72.37
Total	933	344(60.42)	22(3.89)	63(11.13)	5(0.88)	23(4.06)	3(0.53)	54(9.54)	566(100)	61.00

in both the districts (72 per cent in Begusarai and 73 per cent in Katihar).

b) Small farmers represent the typical syndrome of development and underdevelopment. Although overall, more than 50 per cent of the workforce of the small farmers is employed, this proportion is quite low at just 44 per cent in Begusarai (underdeveloped district) compared to Katihar where nearly 60 per cent of the adult workforce in small landholder household is employed. Thus, the development status of agriculture affects the level of employment as far as small farmers are concerned, positively, that is, higher is the level of development, higher is the level of employment among the small farmers' households.

c) As expected, the employed proportion of workforce to total adult population is lowest in case of large farmers. This seems to be indirectly related to educational status as higher is the educational status, lower is the proportion of employment. This is further corroborated by the fact that proportion of migrant employees is highest among the large farmers.

d) Table 61 also shows the sectoral pattern of employment in absolute terms as well as per cent distribution of total employed workforce. Although the pattern of sectoral employment varies according to the farmers' category, agriculture continues to be the biggest employer at the household level as it alone accounts for more than 60 per cent of the total employment.

e) The absorption of manpower in self-cultivation agriculture is maximum for large households (75.24 per cent) followed by the small farm households. For the marginal households, though the proportion of workers engaged in self-cultivation is below 50 per cent, when we take into account the employment in others' fields also, their dependency on agriculture is also above 75 per cent.

f) One very significant fact that can be noticed is that under more developed agriculture conditions (Katihar), the dependency on the hired labour force increases as is reflected by the fact that 28 per cent of the marginal farmers in Katihar are working on others' field. Moreover, the proportion of labour force employed in agriculture for the large farm households gets reduced as agriculture develops (Table 61).

g) From the marginal farmer's point of view, agriculture has limited capacity to absorb them as only 47 per cent of the marginal farmers are involved into self-cultivation. This proportion is even lower for the developed district.

Employment Gap: We have seen earlier that nearly 76 per cent of the marginal farmers and 59 per cent of the small farmers are below poverty line. Further, only 47 per cent of the workforce belonging to the marginal farm households is involved into self-cultivation. Further, the employment is highly gender-biased and females practically have no role in the agricultural labour market, especially for the small farmers, in this section we have analysed the status of male labour force belonging to small and marginal farm households (Table 62).

a) As against three male labour available per household in the study area, only 1.7 are actually employed. Which also means that against a potential 684 mandays per household, only 469 mandays are created leaving a gap of 250 mandays. The employment gap by and large, is found to be nearly the same across the districts. Only in case of marginal farmers in Katihar this gap is nearly 300 mandays.

b) When we look at the situation of female workers we find that as against 2.15 female workers per household only 0.5 are employed thus leaving a gap of 442 female mandays per household. This only shows lack of employment opportunities for women.

c) When we take an overall picture we find that on an average every household has nearly five workers of whom only two are employed. The overall employment gap at the household level therefore, is 657 which itself is more than the actual employment generated (612 mandays) during the year under enquiry.

Awareness about Rural Development Programmes: The basic objective of the rural development programmes, especially of SGSY and SGRY is to bridge this employment gap. We therefore, tried to enquire into the general awareness about three programmes viz., SGRY, SGSY and IAY. While more than 50 per cent of the households were aware of SGRY, only 37 per cent of the households were aware about SGSY and 42 per cent were aware about IAY. The awareness level about the SGSY was found to be higher among the small farm households compared to large farm households and marginal farm households. Consequently, out of 39 beneficiaries of SGSY, 29 belong to small farm households only (Table 63). On the other hand, awareness about SGRY which is the main employment generating programme was highest among the marginal farmers. What is more significant is that this awareness was higher in the developed district compared to the underdeveloped district. Overall, 49 out of 80 marginal farmers (61 per cent) were aware of SGRY.

Table 62: Full Time Male Employment Status and Employment Gap : Bihar

	Begusarai			Katihar			Bihar		
Farmer Type	SF	MF	Total	SF	MF	Total	SF	MF	Total
Male									
Total adult males	101	95	248	105	105	255	206	200	503
Adult males employed	69	60	169	75	62	176	144	122	345
Average male workers per HH	3	2	2	3	3	3	3	3	3
Actual males employed per HH	1.7	1.5	1.7	1.9	1.6	1.8	1.8	1.5	1.7
Potential male mandays	687	646	675	714	714	694	700	680	684
Actual male mandays	469	408	460	510	422	479	490	415	469
Male employment gap	218	238	215	204	292	215	211	265	215
Female									
Total adult females	90	76	208	92	86	222	182	162	430
Females employed	15	34	52	22	31	53	37	65	105
Female workers per HH	2.3	1.9	2.1	2.3	2.2	2.2	2.275	2.025	2.15
Females employed per HH	0.4	0.9	0.5	0.6	0.8	0.5	0.4	0.8	0.5
Potential female mandays	612	517	566	626	585	604	619	551	585
Actual female mandays	102	231	141	150	211	144	126	221	143
Employment gap	510	286	424	476	374	460	493	330	442
Total									
Average adult workers per HH	5	4	5	5	5	5	5	5	5
Actual employed per HH	2	2	2	2	2	2	2	2	2
Potential mandays per HH	1299	1163	1240	1340	1299	1297	1319	1231	1269
Actual mandays per HH	571	639	601	660	632	623	615	636	612
Employment gap	728	524	639	680	666	675	704	595	657

Table 63: Awareness about Programmes : Bihar

	SGRY		SGSY		IAY	
	Aware	No. of family members benefited	Aware	No. of family members benefited	Aware	No.of family members benefited
Begusarai						
LF	11	01	03	0	05	0
SF	14	11	22	18	11	05
MF	17	23	09	03	21	09
Total	42	35	34	21	37	14
Kat						
LF	08	0	07	02	08	0
SF	21	19	19	11	17	02
MF	32	38	13	05	22	07
Total	61	57	39	18	47	09
Bih						
LF	19	01	10	02	13	0
SF	35	30	41	29	28	7
MF	49	61	22	08	43	16
Total	103	95	73	39	84	23

Impact of SGRY: Since SGRY is the main wage employment programme, its impact on household economy of the small and marginal farmers in terms of income and employment is assessed (Table 64). The following observations may be made from the Table: On an average, 36 mandays per beneficiary worker in the marginal farm household and 24 mandays per beneficiary worker in the small farm households were generated under the SGRY programme. On an household level, while 37 mandays per household were generated for the marginal household, it was just about nine mandays for the small farmer household. Taking the case of marginal farm households, the contribution of SGRY to the total household income was just 2.83 per cent. Similarly, only 14 per cent of the employment gap was covered by the SGRY programme. This itself reflects the very poor coverage of SGRY programme from the study area. This, however, does not mean that the programme did not make any dent in the poverty situation of the marginal farm households. Their contribution to the households from which the beneficiaries were selected was found to be 39 per cent of the potential

employment of the household and nine per cent of the total household income (Srivastava 1999).

Table 64: Impact of SGRY : Bihar

	No. of family members benefited	Average number of days of employment	Total man-days	Wages received	Mandays per household	Average wages received per household	SGRY wages per cent of average household income	Proportion of employment gap covered
Begu								
SF	11	27	297	16335	7.43	408	1.32	3.12
MF	23	34	782	43010	19.65	1075	4.13	9.14
Kati								
SF	19	23	437	24035	11	601	1.31	5.39
MF	38	37	1406	77330	35	1933	7.26	11.98
Bih								
SF	30	24	734	40370	9.18	506	0.66	4.35
MF	61	36	2188	120340	37.35	1504	2.83	14.09

Migration: Migration plays a key role in the household economy of Bihar. In fact, the State is known for migration in the country and the presence of people, specially labour migrated from Bihar can be felt in any part of the country. Twenty six per cent of the sample households have reported migration. The per centage of households reporting irrigation has not been very different for the three categories of the farmers. Twenty five per cent of large farmers, 24 per cent of small farmers and 29 per cent of marginal farmers households have reported migration. Although only 25 per cent of the large farmer households have reported migration, the rate of migration in terms of number of family members migrated has been higher in their case, as 10 households have reported 20 migrants from their families. Thus, on an average per household two members have migrated. The number of migrants has been more than one per household that reported migration in all categories of the farmers. No significant difference was found in terms of number of migrants from the two districts. Forty two persons migrated from 29 households in Begusarai and 39 persons migrated from 23 households

in Katihar. Thus, number of migrants per household was found to be higher from the developed district (Table 65). In other words, agricultural development is no guarantee for preventing migration. The reason is very clear when we look at the number of migrants according to reasons for migration.

***Reasons for Migration**:* Nineteen out of 39 migrants from the developed district Katihar, nearly 50 per cent left the village because of tension and 13 left the village either because of higher wages or better job opportunities or both. On the contrary, 29 out of 42 migrants (69 per cent) in Begusarai left the village because of higher wages or better job opportunities or both. Persuasion by others (who have already migrated) is the third most important reason for migration. Overall, we find that 52 per cent of the migration is because of higher wages/ better job opportunities or both, followed by another 28 per cent because of the tension in the village and rest of 20 per cent due to outright persuasion (Table 66).

Table 65: Farmers' Category-wise Migration in the Study Area- Bihar

Farmer type	Total house-holds	No. of house-holds reporting migration	Distribution of migrants according to nature of migration*		Total migrants
			Seasonal	Permanent	
Begusarai					
LF	20	5	9	2	11
SF	40	12	9	5	14
MF	40	12	9	8	17
Total	100	29	27	15	42
Katihar					
LF	20	5	2	7	9
SF	40	7	8	3	11
MF	40	11	9	10	19
Total	100	23	19	20	39
Overall					
LF	20	10	11	9	20
SF	40	19	17	8	25
MF	40	23	18	18	36
Total	100	52	46	35	81

* Migration up to six months or above as permanent migration.

Table 66: Distribution of Migrants According to Reasons for Migration : Bihar

	Begusarai	Katihar	Overall
Reasons for migration	Number of migrants	Number of migrants	
Higher wages	10(24)	7(18)	17(21)
More job opportunity	1(2)	5(13)	6(7)
Persuasion by others	9(21)	7(18)	16(20)
Tension in village	4(10)	19(49)	23(28)
Higher wages and better job opportunities	18(43)	1(2)	19(24)
Total	42(100)	39(100)	81(100)

Number of Days of Migration: Table 67 shows the distribution of the migrants according to number of days. Like reasons for migration, the duration of migration also shows a slightly different pattern of migration depending on the general level of development. For the purpose of analysis of the duration of migration, we have categorised the duration into three broad periods- up to one month (as no migration was found to be for less than one month), up to three months (which means the migrant was away from home for at least one agricultural season), and more than three months meaning that he has no contribution to make in the domestic agricultural operations.

Majority of the migrations in both the districts were of longer duration, more than three months. Sixty per cent in Begusarai and 49 per cent in Katihar are found to be permanent in nature, that is more than three months. The proportion of permanent migrants is lower in the developed district but the proportion of those migrating for one agricultural season is higher (31 per cent in Katihar compared to 26 per cent in Begusarai). This shows that under developed agricultural conditions, the overall absence of the migrants is of lesser duration and even migrants also have some role in the agricultural operations in the district depending on the nature of the crop. This is further confirmed by the fact that nearly 20 per cent of the migration in the agriculturally developed district is just of one month duration, an off-season activity. The same is though just 12 per cent in the underdeveloped district, is offset by the longer duration migration and hence no role or opportunity in the local agriculture sector.

Table 67 : Distribution of Migrants According to Range of Migration Days : Bihar

Duration	Begusarai Number of male migrants	Katihar Number of male migrants	Overall Number of male migrants
Less than 15 days	0	0	0
Up to one month	5(12)	8(20)	13(16)
Up to three months	11(26)	12(31)	23(28)
More than three months	26(62)	19(49)	45(56)
Total	42(100)	39(100)	81(100)

Place of Migration: The fact that migrants also play some role in agricultural operations is further confirmed by the fact that nearly negligible migration is in the direction of agriculturally developed states. Table 68 shows the direction-wise number of migrants from both the districts. Largest out-migration is to Delhi (61 per cent) followed by Kolkata (12 per cent, Mumbai and Pune (9 per cent each). Only six per cent of the migration is to the agricultural State of Haryana.

Table 68: Number and Place of Male Migrants : Bihar

	Begusarai	Katihar	Overall
Place of migration	Number of male migrants	Number of male migrants	Number of male migrants
Delhi	24(57)	25(64)	49(61)
Mumbai	1(2)	6(15)	7(9)
Kolkata	5(12)	5(13)	10(12)
Pune	6(14)	1(3)	7(9)
Haryana	4(10)	1(2.5)	5(6)
Guwahati	1(2)	1(2.5)	2(2)
Ghaziabad	1(2)	0	1(1)
Total	42(99)	39(100)	81(100)

***Migration and Household Economy**:* We have taken the share of remittances in the total household income of the migrants and purpose-wise utilisation of remittances as two key indicators to judge the role of migration in the household economy. Table 69 shows that migration contributes very little to the total household income of the large farmers in both the districts (1.02 per cent in Begusarai and less than one per cent in Katihar). The small farmers in backward agricultural conditions depend more on migration as source of livelihood (the proportion of remittances to total household income in Begusarai is more than four per cent compared to less than two per cent for small farmers in Katihar). The position of marginal farmers is the same whether agriculture is developed or underdeveloped. Regardless of the level of development, category-wise per migrant income is comparable and nearly the same in both the districts.

Table 69: Farmers' Category-wise Migration and Income : Bihar

Farmer type	LF	SF	MF	Total
Begusarai				
Total household income	1663746	1265744	981950	3911440
Remittances	16900(1.02)	52900(4.18)	53300(5.43)	123100(3.15)
Total members in household	209	401	357	967
Number of male migrants	11	14	17	42
PCI	7961	3156	2751	4045
PMI	1536	3779	3135	2931
Katihar				
Total household income	2123804	2124820	1124080	5372704
Remittances	14400(0.68)	42000(1.98)	61000(5.43)	117400(2.19)
Total members in household	194	417	426	1037
Number of male migrants	9	11	19	39
PCI	10947	5095	2639	5181
PMI	1600	3818	3211	3010

***Utilisation of Remittances**:* When we look at the distribution of households according to purpose-wise utilisation of remittances (Table 70), we find that-

a) Improvement in the house/ building of new house and improvement of land/purchase of new land are the two most important uses of migrants' income. Nearly 50 per cent of the households reporting migration spend the remittances on these two items.

b) Next in the importance is the maintenance of family as 27 per cent of the households spend their remittances on this if we include spending on sickness and occasional expenses on marriage etc.

Table 70: Distribution of Households According to Purpose-wise Use of Remittances : Bihar

Use of remittances	Begusarai	Katihar	Overall
Maintenance of family	8(27.59)	6(26.09)	14(26.92)
Repayment of debt	1(3.45)	3(13.04)	4(7.69)
Sickness	3(10.34)	0	3(5.77)
House construction	6(20.69)	6(26.07)	12(23.08)
Purchased land	6(20.69)	8(34.78)	14(26.92)
Marriage	1(3.45)	0	1(1.92)
Others	4(13.79)	0	4(7.69)
Total	29(100)	23(100)	52(100)

MAJOR FINDINGS

We may now summarise our discussion and major findings as below-

Sample Profile

i) Majority of the farmers in the study districts belong to the age group of 35-59 years.

ii) The proportion of young farmers engaged in cultivation was found to be higher in the developed districts.

iii) More than 53 per cent of sample farmers in Begusarai and 57 per cent in Katihar were found to be totally dependent on agriculture and had no

secondary occupation. The dependency on agriculture was found to be highest in case of large farmers and lowest in case of marginal farmers.

iv) The prevalence of wage work on others' field was more in the developed areas, nearly one-third of the marginal farmers also work as agricultural labourers in Katihar.

Household Profile

i) Total 2004 persons were covered by the 200 families with an average population of nearly ten persons per household.

ii) Fifty six per cent of the population are males and 44 per cent are females. Not much variation is found across the districts and among the farmers' categories with regard to average population per family.

iii) Thirty nine per cent of the population are below fourteen years of age and another 14 per cent are above 60 years. Thus, the dependency ratio is quite high in the State.

Land Ownership and Access to Land

i) Twenty per cent of the farmers belonging to large farmers' category owned more than 58 per cent of the total land but their access to irrigated land is relatively lower at 54 per cent of the total land.

ii) The difference between the land owned by small farmers (32 per cent) and by the marginal farmers is much wider than the difference between large farmers and small farmers. The access to irrigated land was found to be slightly better in case of small and marginal farmers as their share in total irrigated land was higher than their share in total land. This in other words means that large farmers have fairly good amount of dryland which was either leased out or left as fallow. The large farmers alone account for nearly 70 per cent of the dryland in Begusarai and 69 per cent in Katihar.

Land Market

A) Leasing Out :

i) The total leased out land as proportion of total owned land was below ten per cent and the per cent of land leased wetland with total wetland was

even lower. But the lease market was found to be active in both the districts though the nature of lease market differed depending on the level of agricultural development, cropping pattern and availability of irrigation. Overall, the proportion of wet leased out land outweighed the leased out dryland. More than 57 per cent of the total leased out land was irrigated land.

ii) Overall, 70 per cent of the large farmers, nine per cent of the marginal farmers and six per cent of small farmers reported leasing out of land. Of these 70 per cent, 40 per cent of the large farmers leased out their land on fixed rental basis and 30 per cent on share cropping basis. Leasing out by marginal farmers was totally on rental basis.

Irrigation Status and Leasing Out :

iii) Leasing out of land, both irrigated as well as dry, was more active in villages of the developed district (Katihar) compared to the lesser developed district. More than 90 per cent of total leased out dryland was found in one district (Katihar) alone. This was mainly due to commercialisation of cropping (especially of banana and jute).

iv) However, the leased out wetland as proportion of total leased out land was found to be higher in villages of Begusarai which had more traditional structure of agriculture and also larger area under irrigation. The proportion of leased out wetland to the total leased out land was found to be lower in Katihar where due to lower availability of land but higher returns, farmers prefer to keep it for self-cultivation.

v) Leasing out of dryland was found to be more prevalent in the developed areas. Under normal circumstances, farmers prefer to keep the dryland as fallow (as was found in Begusarai where only 12 per cent of the total dryland was leased out).

vi) Large farmers were the main suppliers of land followed by marginal farmers (as proportion to total owned land). Ninety two per cent of the total leased out land was supplied by the large farmers in the study districts. This proportion was nearly the same in both the districts.

vii) Due to uneconomical holding size, some proportion of the marginal farmers having wetland also leased out their land. Thus, the phenomenon of "reverse tenancy" was also found in the developed district. Although their

contribution to total leased out land was just five percent as per centage of total owned land, nearly four per cent of the land of the marginal farmers was leased out. The main takers of the land of the marginal farmers were belonging to the category of small farmers.

B) Leasing In

i) Eighteen per cent of the total farmers reported leasing in land. Of the 36 farmers who reported leasing in of land four belonged to the category of large farmers. However, these four farmers (11 per cent of total leasing in farmers) accounted for 17 per cent of the total leased in land. Small farmers accounted for 47 per cent of the leasing in farmers and 42 per cent of the leased in land. Similarly, marginal farmers accounted for 42 per cent of the farmers and nearly same proportion of leased in land. Thus, leasing in was most prevalent in the group of small and marginal farmers.

ii) These two categories of the farmers together constituted 20 per cent of the total sample households and were dependent on leased in land for their sustenance. The incidence of tenancy was thus found to be fairly high in the study area.

iii) The land market here also is quite dependent on the irrigation facilities as more than 76 per cent of the leased in land was irrigated land and more than 72 per cent of the farmers who leased in land had leased in the irrigated land.

Leased in Land in Net Sown Area :

i) The leased in land played a very crucial role in augmenting the productive resources of the small and marginal farmers. In case of small farmers the net sown area was found to be 104 per cent of the net owned area. Most importantly, in case of marginal farmers the area operated or cultivated was 121 per cent of the owned area.

ii) Village-wise and district-wise differences were observed in this regard. In Begusarai, the area operated by the marginal farmers as per cent of their owned area was as high as 150 per cent. The tenancy was therefore, much higher in the lesser developed district. On the other hand, in Katihar, the area operated by the marginal farmers was just 91 per cent of the owned area. This was mainly because of leasing out of land by the marginal farmers in Katihar.

iii) On an average, leased in land constituted about eight per cent of net cultivated area for all categories of the farmers in Begusarai and seven per cent in Katihar. However, the contribution of leased in land in net cultivated for marginal farmers was as high as 36 per cent in Begusarai. The tenancy among the marginal farmers was therefore, found to be very high in case of Begusarai. In Katihar, on the other hand the small farmers were more dependent on leased in land than the marginal farmers.

Sale of Land and Sold to Whom :

i) Only 13 per cent of the farmers (26 out of 200) reported open sale of land during the reference period (last five years). Forty two per cent of the farmers reporting sale of land belonged to the category of marginal farmers and another 38 per cent were small farmers.

ii) The number of farmers reporting sale of land over the last five years was more in the developed district, but the trend was the same in the lesser developed district also as majority of the farmers selling land were small and marginal farmers.

iii) Surprisingly, much of the land was sold to marginal farmers and marginal farmers cum migrant labour. Looking at the district-wise trends, it was found that land was sold mainly to small farmers in Begusarai and marginal farmers in Katihar. Four out of 20 farmers became marginal farmers after selling their land.

Purchase of Land and Purchased from Whom:

i) As against 26 farmers who sold land, only nine of the sample respondents sold their land during this period. Out of these nine, five belonged to the category of small farmers and two each to the category of large and marginal farmers. None of the sample respondents reported purchase of land in Begusarai.

ii) The main source of supply of land was again the small and marginal farmers rather than big farmers. Thus, sale of land appears to be largely a phenomenon of distress selling rather than a matter of open market price.

Agrarian Structure

Disparities in Net Cultivated Area :

i) The average holding size of the marginal farm households was found to be just 13 per cent of the large farmers in Begusarai and 11 per cent in Katihar.

ii) The relative average net sown area per household for the small farmers is found to be 32 per cent of the average net sown area of the large farmers in Begusarai and 40 per cent in Katihar. Thus, the difference in average net sown area in the developed district is found to be lower as far as the large and marginal farmers are concerned.

Composition of Net Sown Area :

i) Only three-fourths of the land owned by the large farmers was found to be used for self-cultivation. The owned land put to cultivation was more than 90 per cent for the other two categories of the farmers.

ii) The fact of non-utilisation of land for self-cultivation of land by the large farmers has policy implications and gives scope for redistribution of land, legalising of tenancy and settling the terms of leasing by the government.

iii) More than one-third of the net sown area of the marginal farmers in Begusarai and nearly 14 per cent of net sown area of marginal farmers in Katihar consists of leased in land alone giving scope for exploitation and control over labour at the hands of large farmers.

Cropping Pattern :

i) Cropping pattern indicated marginal differences across the two districts. By and large, paddy was found to be the main crop in Katihar and both wheat and paddy in Begusarai.

ii) The proportion of paddy area is higher in the underdeveloped villages.

iii) Despite larger proportion of area under paddy cropping pattern is more diversified in the underdeveloped villages and underdeveloped block as reflected by the crop diversification indices. The cropping pattern in the developed villages is though more commercialised, less diversified. Banana and jute were found to be the main commercial crops in Katihar whereas maize, sugarcane and vegetables were the main cash crops in Begusarai.

iv) While the proportion of gross sown area under paddy is nearly the same for large and small farmers, it is nearly ten per cent less in case of marginal farmers. Fifty one per cent of the area under paddy was concentrated in the hands of large farmers who constituted just 20 per cent of the farmers. Thus, due to small area for paddy cultivation and food insecurity, the marginal farmers prefer cash crops with lesser gestation period like vegetables and if possible plantation crops also like banana.

v) The large farmers on the other hand, preferred food crops like paddy, wheat, mustard and as an exception (in two villages only) go for banana. However, despite lower proportions of gross sown area put to crops like banana and mustard, the absolute area is much higher compared to marginal and small farmers and hence income level of the large farmers was found to be very high.

vi) Intensity of cropping when compared among the three categories of the farmers, is found to be highest among the marginal farmers followed by the small and large farmers. The lower cropping intensity of the large farmers also reflects sub-optimal use of land.

Productivity Levels:

1. Average yields of all the important crops like paddy, wheat, mustard, pulses, potato were found to be below the all India average in the village. No appreciable inter-village differences were found in the productivity of food crops.

2. Only in case of maize, inter-village productivity differences are witnessed and varied between 8.79 quintals per acre (Gangraho village in Begusarai) to 15.89 quintals per acre in Dhaboli village of the same district.

3. No significant difference was found in the productivity levels of crops among different categories of the farmers. The general trend of low productivity cuts across all the farmers.

4. The primary reason cited by the farmers for the low productivity of these two crops was lack of appropriate doses of fertilisers and pesticides. In fact, according to them the fertiliser supply in the State was nearly at standstill due to very poor infrastructure and transportation conditions and suppliers from other states are not coming to Bihar.

5. The contribution of potato and vegetables in the gross value of agricultural produce was found to be significantly higher compared to the area under these crops in the case of marginal and small farmers. But due to very low area under these crops the share of these categories in total production and market was quite low. Thus, despite more diversified cropping structure, marginal farmers have to face stiff competition from the other two categories for market. Moreover, in the absence of any institutional support these farmers usually have to sell their produce in the local markets; whereas large farmers manage to sell their produce at a higher price in outside markets.

Marketable Surplus and Marketing:

1) The proportion of output of paddy sold in the market was found to be above 80 per cent in seven out of the eight villages.

2) Vegetables (84 per cent), banana (95 per cent) and jute (100 per cent) were the major marketed crops in the study area. Wheat (67 per cent), mustard (59 per cent) and maize (58 per cent) are other crops in case of which the marketed component is above 50 per cent. Vegetables included for the present analysis are perishable commodities like tomato, brinjal, and cauliflower, cabbage, pumpkin, bitter guard, ladyfingers, chilies etc. In case of pulses and potato, nearly 46 per cent each of the total production is marketed. However, inter-village variations were found in economic structure and these variations were reflected in the composition of marketed commodity.

Farmers' Category-wise Share in Production and Marketed Production*:*

i. While most of the crops grown by the small and marginal farmers enter the market, their share in total market is not much. More than half of the total output and marketed output in case of paddy came from the large farmers. The share of large farmers in the market was higher than their share in output for all the commodities. In case of paddy, wheat and pulses, large farmers dominate the market. Two of the three commodities have institutional procurement and the large farmers took maximum advantage. Despite high marketable surplus at the individual household, the share of marginal farmers was pathetically low for these crops.

ii. Maize, however, reflected slightly more balanced picture. Small and marginal farmers together accounted for two-thirds of the production and nearly 60 per cent of the market.

iii. The share of marginal farmers and small farmers in case of production and marketing was much more encouraging.

iv. Overall, while the production and market for foodgrains and non-perishable commodities was dominated by the large farmers, the production and marketing of perishable commodities remained the domain of marginal farmers and small farmers. Since the marginal farmers did not have much at stake, they may remain unaffected by any policy of minimum support price or other market development policies.

v. Since marginal farmers were actively engaged in the marketing of vegetables and potato, storage facilities, transportation and organised marketing may help them in much better way rather than the minimum support policy.

Income Distribution and Livelihood Sources

1) Significant differences were found in the source-wise distribution of household income among the three categories of the farmers. For the large farm household contribution of agriculture sector in total income was above 80 per cent for all the villages. The second main source of income for the large farm households (rentals) contributed just four per cent of the total income. Marginal farmers' dependency on agriculture as source of income was around 50 per cent. Thus, nearly half of the income of the marginal farmers came from non-agricultural sources.

2) Livestock and wage works contributed 19 per cent of the income of the small farmers in the lesser developed district.

3) Wage works were the second main source of income for the marginal farmers followed by small business in both the districts, though the share of small business was significantly different in the two districts.

4) The most significant dimension of income distribution across the different categories of the farmers was found to be the rentals. In fact, in both the districts, the share of large farmers and marginal farmers in total rental income was nearly the same which means the leasing out of land is equally practised by the large and marginal farmers (however, as proportion

of total land owned it is much higher among the marginal farmers). The phenomenon of "reverse tenancy" was found in both the districts. Income from rent as proportion to total income was higher in case of marginal farmers though in absolute sense it was much lower compared to large farmers. Rentals were highest in Katihar due to higher value of land and higher level of income.

5) Another significant difference in the sources of household income for different categories of the farmers was income from the implements. Marginal farmers, though owning much less land, had ownership over primary agricultural implements like bullocks (mostly financed under the rural development programme), bullock carts and even ploughs and earn by renting them out in Begusarai. In fact, the renting out was not independent of their labour. Thus, most of the marginal farmers who also worked as agricultural labourers used their own implements.

6) Livestock was another important activity in both the districts, especially for the small farmers. Livestock contributed more than 7.5 per cent in the total household income in Begusarai and almost 2.5 per cent in Katihar. However, the total income generated in the livestock sector is unevenly distributed among the three categories of the farmers.

7) Overall, while agriculture is the major source of income for large farmers in both the developed and lesser developed districts, same could not be said about the small and marginal farmers. The dependency of small farmers on agriculture as the main source of livelihood increases as agricultural development takes place. But the marginal farmers sustain by diversifying their livelihood sources.

Income Disparities :

a) The highest per capita income for the large farm in Gangaraho (Rs.9481) was just 51 per cent of the highest per capita income recorded for the large farm households in Digiri village of Katihar.

b) The share of the large farmers in both the districts, as expected, is highest in total agriculture produce, 46 per cent in Begusarai and 44 per cent in Katihar. The proportionately lower share of the large farmers in Katihar is mainly because of higher share of small farmers (39 per cent compared to 34 per cent in Begusarai). Marginal farmers account for only 17 per

cent of the total agricultural income in Katihar compared to nearly 20 per cent in Begusarai. The inequality between marginal farmers and small farmers is lower in underdeveloped conditions than in developed conditions.

Poverty

a) On an average, 76 per cent of the ,marginal farmers were below poverty line. No significant difference was found in the poverty incidence as far as marginal farmers were concerned. In two out of eight villages (Dhaboli in Begusarai and Tinpania in Katihar), all the households in the category of marginal farmers were below poverty line.

b) The proportion of the small farm households below poverty line was also fairly high- 65 per cent in Begusarai and nearly 53 per cent in Katihar. Thus, poverty was less pronounced among this category in the more developed district. In fact in the most developed village (Digiri), no farmer in this category was below poverty line.

c) The spread of poverty among different categories of the farmers clearly reflected that agricultural development has mainly affected the large farm households and the status of the small and marginal farmers remain to be vulnerable in both the districts with the exception of the Digiri village in Katihar (where no small farmer was found to be below poverty line) and Suja where only two households in this category were below poverty line. If we leave out these two villages the poverty ratio among the small farmers in the rest of the six villages would be around 80 per cent reflecting that small farmers were equally, if not more, vulnerable and poverty stricken as the marginal farmers. The situation of the marginal farmers in fact is marginally better in certain cases due to occupational diversity.

Employment Status

a) The absorption of manpower in self-cultivation of agriculture was maximum for large households followed by the small farm households. For the marginal households though the proportion of workers engaged in self-cultivation was below 50 per cent, when we take into account the employment in others' fields also, their dependency on agriculture was also above 75 per cent.

b) One very significant fact noticed was that under more developed agriculture conditions (Katihar), the dependency on the hired labour force increased as was reflected by the fact that 28 per cent of the marginal farmers in Katihar were working on others' field. Moreover, the proportion of labour force employed in agriculture for the large farm households was lower in the comparatively more developed villages.

c) From the marginal farmers' point of view, agriculture had limited capacity to absorb them as only 47 per cent of the marginal farmers were involved into self-cultivation. This proportion was even lower for the developed district.

Employment Gap

a) The male employment gap for the small and marginal farm households was calculated at the household level and against a potential 684 mandays per household, only 469 mandays are created leaving a gap of 250 mandays. The employment gap, by and large, was found to be nearly the same across the districts. The gap in case of females (442 female mandays per household) was found to be much higher indicating the gender bias in the labour market.

b) The overall picture reflected on an average that every household had nearly five workers of whom only two are employed. The overall employment gap at the household level was found to be more than the actual employment generated.

Awareness about Rural Development Programmes

i) Farmers' awareness about the three most important programmes was assessed during the survey. While more than 50 per cent of the households were aware of Sampurna Gram Rojgar Yojana (SGRY), only 37 per cent of the households were aware about Swarnajayanti Gram Swaraojgar Yojana (SGSY) and 42 per cent were aware about Indira Awaas Yojana (IAY).

ii) Farmers' category-wise differences were found about different schemes. The awareness level about the SGSY was found to be higher among the small farm households compared to large farm households and marginal farm households. On the other hand, awareness about SGRY was highest among the marginal farmers. The awareness about SGRY among the marginal farmers was higher in the developed district.

Impact of SGRY

i) Since SGRY is the main wage employment programme, its impact on household economy of the small and marginal farmers in terms of income and employment was assessed.

ii) On an average, 36 mandays per beneficiary worker in the marginal farm household and 24 mandays per beneficiary worker in the small farm households were generated under the SGRY programme.

iii) Contribution of SGRY to the total household income in case of marginal farm households was just 2.83 per cent. Similarly, only 14 per cent of the employment gap was covered by the SGRY programme. Thus, the coverage of SGRY was very poor in the study area.

Migration

i) Twenty six per cent of the sample households reported migration of one or more family members from the village. The per centage of households reporting irrigation has not been very different for the three categories of the farmers. The rate of migration, however was found to be higher for the large farm households. On an average, per household two members have migrated. The number of migrants has been more than one per household that reported migration in all categories of the farmers.

ii) No significant difference was found in terms of number of migrants from the two districts. The very fact that number of migrants per household was higher for the large farme households and no difference was found in the migration pattern between the develpped and lesser developed districts, indicated that agricultural development was no guarantee for preventing migration.

iii) The most important reason for migration from the developed villages (Katihar districts) was found to be tension in the village as nearly 50 per cent of the migrants left village because of this factor. On the contrary, 69 per cent of the migrants from lesser developed dstrict left village in search of better job avenues and higher wages outside.

iv) The duration of migration reflected slightly a different pattern of migration depending on the general level of development. Majority of the migrations in both the districts were of longer duration, more than three months. Sixty per cent in Begusarai and 49 per cent in Katihar were found to be

for more than three months duration. The proportion of migrating for one agricultural season was higher in the more developed area.

v) The largest out-migration was to Delhi, followed by Kolkata, Mumbai and Pune. Only six per cent of migration is to the agricultural State of Haryana.

Migration and Household Economy

i) The overall contribution of migration as measured in terms of remittances, to total household economy was not found to be very significant as it contributed to just about one per cent of the total household income.

ii) Despite its low contribution, differences according to social class and agricultural development level were found. The small farmers in backward agricultural conditions depended more on migration as source of livelihood than the small farmers in the developed villages. The dependency of marginal farmers on migration was found to be much higher regardless of the level of development.

Utilisation of Remittances

a) Improvement in the house/ building of new house and improvement of land/purchase of new land were the two most important uses of migrants' income. Nearly 50 per cent of the households reporting migration spend the remittances on these two items.

b) Next in the importance is the maintenance of family as 27 per cent of the households spent their remittances on this.

Chapter - IV

AGRARIAN RELATIONS AND RURAL POVERTY IN ORISSA

Sample Profile

Age Groups : Table 71 shows the distribution of sample farmers according to their age groups. Majority of the farmers in both the districts fall within the age group of 35-59 years. Eighty five per cent of the medium and large farmers are in this age group in Bargad whereas, 55 per cent in Kalahandi district come under this category. Majority of medium and large farmers in Khurmunda village of Bargad district migrated from Andhra at their young age at the time of construction of Hirakud dam and settled. They are now mostly in the age group of 35 to 59.The per cent of small and marginal farmers in the productive age group of 18 to 25 and 25 to 34 was more in Kalahandi district when compared to Bargad district. As we will see later, agriculture in Kalahandi was more diversified than Bargad for which one of the reasons may be the involvement of younger generation. Overall, we find that 57 per cent of the total sample farmers in the State are in the age group of 35 to 59, 25 per cent in the age group of 25 to 34 years, nine and seven per cent are in the age group of above 60 and 18-25 years, respectively.

Education Status : Table 72 shows the educational status of the sample farmers. Significant difference in the literacy rates of different categories of farmers was found in the two districts. Twenty nine per cent of the sample farmers in Bargad and 55 per cent in Kalahandi were totally illiterate. The educational status of farmers in Bargad district with the literacy rate of 71 per cent was found to be much better when compared to Kalahandi with a literacy rate of 45 per cent. The number of large and medium farmers who were educated up to primary level were more with a percentage of 45 in Kalahandi district, when compared to Bargad district with a percentage of 25. However, all these farmers have not gone up to secondary level of education in Kalahandi district. This is shown in the Table that the per cent of large and medium farmers who have gone up to middle school level was more in Bargad district when compared to Kalahandi district with a percentage of 45 and 15, respectively. While there was no large farmer who has not gone up to graduation level in Bargad district, there was one small farmer who has gone up to this level in Kalahandi district. The overall literacy rate for the State among the sample farmers was 58 per cent.

Table 71 : Distribution of Farmers According to Age Group : Orissa

Age-	Bargad				Kalahandi				Orissa			
Group	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
18-25	-	1	3	4	-	5	6	11	-	6	9	15
25 to 34	2	4	13	19	6	12	14	32	8	16	27	51
35 to 59	17	27	23	67	11	19	18	48	28	46	41	115
60	1	8	1	10	3	4	2	9	4	12	3	19
Total	20	40	40	100	20	40	40	100	40	80	80	200
Per cent Distribution												
18-25	-	2.5	7.5	4	-	12.5	15	11	-	7.5	11.25	7.5
25 to 34	10	10	32.5	19	30	30	35	32	20	20	33.75	25.5
35 to 59	85	67.5	57.5	67	55	47.5	45	48	70	57.5	51.25	57.5
60	5	20	2.5	10	15	10	5	9	10	15	3.75	9.5
Total	100	100	100	100	100	100	100	100	100	100	100	100

Table 72: Distribution of Farmers According to Educational Status : Orissa

Category	Bargad				Kalahandi				Orissa			
	LF	MF	SF	Total	LF	MF	SF	Total	LF	MF	SF	Total
Illiterate	2	12	15	29	8	19	28	55	10	31	43	84
Up to primary	5	20	21	46	9	13	9	31	14	33	30	77
Middle school	9	5	4	18	3	4	3	10	12	9	7	28
Secondary	3	3	-	6	-	3	-	3	3	6	-	9
Degree	1	-	-	1	-	1	-	1	1	1	-	
Post-graduate	-	-	-	-	-	-	-	-	-	-	-	2
Total	20	40	40	100	20	40	40	100	40	80	80	200
Literate	18	28	25	71	12	21	12	45	30	49	37	116
Per cent Distribution												
Illiterate	10	30	37.5	29	40	47.5	70	55	25	38.75	53.75	42
up to primary	25	50	52.5	46	45	32.5	22.5	31	35	41.25	37.5	38.5
Middle school	45	12.5	10	18	15	10	7.5	10	30	11.25	8.75	14
Secondary	15	7.5	-	6	-	7.5	-	3	7.5	7.5	-	4.5
Degree	5	-	-	1	-	2.5	-	1	2.5	1.25	-	1
Post-graduate	-	-	-	-	-	-	-	-	-	-	-	-
Total	100	100	100	100	100	100	100	100	100	100	100	100
Literacy rate (%)	90	70	62.5	71	60	52.5	30	45	75	61.25	46.25	58

Secondary Occupation: Sixty per cent of sample farmers in Bargad and 45 per cent in Kalahandi totally depend on agriculture and had no secondary occupation. The dependency on agriculture as a sole occupation was high among the large and medium farmers in both the districts when compared to the other two categories of farmers. The dependency fairly on agriculture was low in case of marginal farmers in both the districts when compared to the other two categories. However, while 30 per cent of the marginal farmers depend upon solely on agriculture in Bargad district, only five per cent of the marginal farmers depend on agriculture as the main occupation in Kalahandi district.

The proportion of small farmers working as agricultural labour was more in Bargad district when compared to Kalahandi district with a percentage of ten and fifteen, respectively. Similar was the case of marginal farmers with 60 and 90 per cent for Bargad and Kalahandi districts, respectively. That is, apart from agriculture, agricultural labour was also the main occupation for small and marginal farmers in the developed district when compared to the underdeveloped district. While 75 per cent of marginal farmers depend on agricultural labour, only 12 per cent of the small farmers depend on agricultural labour in the State.

Another area of significance from the point of view of secondary occupation was small business for medium and large farmers and migration for marginal farmers and agricultural labour. While five per cent of the large farmers were diverted to small business in Bargad district , 20 per cent of the large farmers were diverted to small business in case of Kalahandi district. The per, centage of small farmers who depend upon migration was more with five in Bargad district when compared to Kalahandi district. Similar is the case of marginal farmers who depend on migration, seven and five per cent respectively, for Bargad and Kalahandi districts. Small farmers in both the districts were also depending on other activities like artisan and services apart from agricultural labour and migration. However, the dependency on these activities was more in Kalahandi district than Bargad district in case of small farmers. This shows that the dependency on agriculture as sole occupation was more for large and medium farmers in both the districts. However, apart from agriculture, the dependency on other occupations was more for small and marginal farmers in the underdeveloped district when compared to the developed district.

Table 73: Distribution of Farmers According to Secondary Occupation Orissa

	None	Agrilab	Artisan	Sb	Mig	Ser	Total
Bargad							
LF	18	-	-	1	-	1	20
SF	30	4	1	2	2	1	40
MF	12	24	-	1	3	-	40
Total	60	28	1	4	5	2	100
Kalahandi							
LF	16	-	-	4	-	-	20
SF	27	6	2	2	1	2	40
MF	2	36	-	-	2	-	40
Total	45	42	2	6	3	2	100
Orissa							
LF	34	-	-	5	-	1	40
SF	57	10	3	4	3	3	80
MF	14	60	-	1	5	-	80
Total	105	70	3	10	8	4	200
Per cent Distribution							
Bargad							
LF	90	-	-	5	-	5	100
SF	75	10	25	5	5	2.5	100
MF	30	60	-	2.5	7.5	-	100
Total	60	28	1	4	5	2	100
Kalahandi							
LF	80	-	-	20	-	-	100
SF	67.5	15	5	5	2.5	5	100
MF	5	90	-	-	5	-	100
Total	45	42	2	6	3	2	100
Orissa							
LF	85	-	-	12.5	-	2.5	100
SF	71.25	12.5	3.75	5	3.75	3.75	100
MF	17.5	75	-	1.25	6.25	-	100
Total	52.5	35	1.5	5	4	2	100

Sb : Small Business
Ser : Service
Mig : Migration
Agrilab : Agricultural labour

Household Profile: The total members of the household were more in the developed district with 663 followed by the underdeveloped district with 639 (Table 74). Among the villages in the developed district the total household members were more for the developed block and also for the developed villages (Annexure 1). The per centage of male literacy was also more in the developed villages in the developed district. Whereas, female literacy was very less in all the villages of the developed district. The literacy rate of both males and females was very less in all the villages of the underdeveloped district. While, the male literacy was 32.5 per cent of the total male population in the developed district, it was very less with 19.8 per cent in the underdeveloped district. The percentage of literacy for the total members of sample households for the developed district was 13.4 and the same for the underdeveloped district was 8.3. Though the literacy rate of both the districts was very less when compared to the State average, the literacy rate of the underdeveloped district was much more less than the developed district. In both the districts, the literacy rate of medium and large farmers was significantly higher than the small and marginal farmers.

Table 74 : Household Profile and Literacy : Orissa

Category	Bargad				Kalahandi			
	Medium	MFAL	SF	Total	Medium	MFAL	SF	Total
Total male	48	84	74	206	35	50	46	131
Total male literate	25	17	25	67(32.5)	15	5	6	26(19.8)
Total female	40	79	70	189	38	44	55	137
Total female literate	9	4	9	22(11.6)	3	-	7	10(7.2)
Total HH members	127	271	265	663	148	252	239	639
Total literate members	34 (26.7)	21 (7.7)	34 (12.8)	89 (13.4)	18 (12)	5 (1.9)	13 (5.4)	53.5 (8.3)

The sample household profile reflects as direct proportion of development with population coincided with literacy rate. Though the literacy rate of the developed district is more than the underdeveloped district, and also large and medium farmers is higher than the small and marginal farmers, it is still very less.

Agrarian Relation and Land Markets

Land Ownership Pattern: In the developed district i.e. Bargad out of the total dryland both large and small farmers owned the same amount of dryland i.e., around 38 per cent. The dryland owned by the marginal farmers was around 22.3 per cent. Whereas, the wetland owned by the large farmers was more with 26.4 per cent and marginal farmers less with 3.6 per cent of the total land owned. In both the developed villages, large farmers owned around 73 per cent of the total wetland followed by around 24 per cent for marginal farmers and agricultural labour (Annexure 2). Whereas, the share of large farmers of both the developed villages was around 54 per cent of the total dryland owned, followed by small farmers with 29 per cent and marginal farmers with 17 per cent. Among the two underdeveloped villages, wetland was totally absent in one village and in another village also it was very meagre. In the underdeveloped district i.e., Kalahandi, the ratio of large farmers and small farmers who possess the wetland slightly varies with around 60:33 when compared to the developed district where it was 70:26 per cent of the total wetland possessed. That is, in the underdeveloped district large farmers were having slightly less of irrigated land and small farmers slightly more irrigated land when compared to the large and small farmers of the developed district. The irrigated land possessed by the marginal farmers and agricultural labour was almost same in both the districts. While, the per cent of dryland possessed by both large and small farmers was almost same with 38 per cent in the developed district, it was around 45 and 38 per cent in case of large and small farmers in the underdeveloped district. That is due to slightly less dryland owned by marginal farmers in this district when compared to the developed district.

Among the four villages in the underdeveloped district, relatively both the villages of the developed block i.e. Junagad were possessing more per centage of irrigated land when compared to the two villages of the underdeveloped block i.e. T Rampur. This is because T Rampur i.e., the underdeveloped block of the underdeveloped district is a tribal block and the two villages covered, the developed as well as the underdeveloped villages in this block were tribal villages virtually

uncovered by the government in terms of providing irrigation. The only system of irrigation available to them to their crops is streams passing through the hills. Another interesting observation is, the per centage of wetland owned by small farmers in both the underdeveloped villages in this under developed block was more than the large farmers. There was not much variation in the possession of per cent of dryland to total dryland by the large and small farmers except in one developed village. This shows that the condition of small farmers in terms of owning the irrigated land was better in areas which were underdeveloped than the areas developed.

Table 75 : Farmers' Category-wise Land Ownership and Distribution : Orissa

Developed district (Bargad)					
Category	Owned dryland	Owned wetland	CPR	Leased in dryland	Leased wetland
Mediun and large	106(39.5)	153.5(69.9)	-	-	14
Marginal farmers	60(22.3)	8(3.6)	16(57)	8	4
Small farmers	102(38.2)	58(26.4)	12(43)	16	17
Total	260	219.5	28	24	35
Underdeveloped district (Kalahandi)					
Category	Owned dryland	Owned wetland	CPR	Leased in dryland	Leased wetland
Mediun and large	140(45.4)	69(60.5)	18(15)	-	8
Marginal farmers	52(16.8)	7(6.1)	37(32)	4	-
Small farmers	116(37.6)	38(33.3)	56(48)	7	3
Total	308	114	116	11	11

Leasing Market:

Poth the mechanisms of leasing-in and leasing-out were observed in the developed district i.e., Bargad. Around 45 acres were leased-in, in this district among sample households of which 53 per cent was dryland and 46 per cent was wetland. Though there was not much variation in the amount of land leased- in between dryland and wetland, more number of farmers have leased-in wetland (21) when compared to dryland (74). This shows that given the chance, irrigated land is preferred to leasing-in than dryland. Among the four villages in this developed district more leasing-in was observed among the large farmers in the developed villages. Whereas, marginal and small farmers have leased-in the land in one underdeveloped village of the underdeveloped block i.e., Laudmal of Paikmal block. In this village small farmers have opted for leasing-in both the dryland and wetland whereas marginal farmers have leased- in only dryland. The phenomena of leasing-in was totally absent in the underdeveloped village of the developed block i.e, Rujanmal of Attabira block. It is a forest fringe village situated on the upper side of the Bargad dam. While, the land was leased- in through share cropping basis in the developed village of the developed block i.e, Khurmunda of Attabira block, it was leased-in on the basis of a fixed amount in other villages. This shows the areas where certain fixed crops like paddy is ensured because of the irrigation and price support policy is there, share cropping is prevailing and in the other areas where the crop is not ensured, leasing- in was on the basis of fixed amount.

While, more amount of wetland was leased-in in the developed district, the per centage of wetland and dryland leased-in to the total land leased-in is almost the same in the underdeveloped district. The number of farmers who leased- in dryland were more than the number of farmers who leased-in wetland in this district. The phenomenon of leased-in was totally absent in both the developed and the underdeveloped tribal villages of T Rampur block. While the small farmers have leased-in both wet as well as dryland, marginal farmers have preferred to lease-in dryland.

Table 76 : Land under Lease : Orissa

Leased-in land						
District	Leased-in dryland		Leased-in wetland		Total leased-in land	
	Number	Area (acs)	Number	Area (acs)	Number	Area (acs)
Bargad	14	24	11	21	25	45
Kalahandi	7	11	6	11	13	22
Total	21	35	17	33	28	67
Leased-out land						
District	Leased-out dryland		Leased-out wetland		Total leased-out land	
	Number	Area (acs)	Number	Area (acs)	Number	Area (acs)
Bargad	7	24	9	21	14	45
Kalahandi	4	11	7	11	11	22
Total	11	35	16	33	25	67

Sale and Purchase of Land

Land Sold: The total land sold among sample households within the last 5 years (2000-2005) in the developed district i.e., Bargad was around 23 acres of which marginal farmers and agricultural labour account for maximum with 43 per cent followed by small farmers and large farmers with 35 and 21 per cent, respectively. An interesting observation is, among the four villages the developed villages account for 100 per cent of selling of land by small farmers and 80 per cent selling of land under marginal farmers. Medium and large farmers have sold their land (100 per cent of total land sold by them) in an underdeveloped village of the underdeveloped block i.e. Laudmal of Paikmal. Whereas, in Kalahandi district i.e., the underdeveloped district the land sold by marginal farmers account for around 14 per cent which was less than the land sold by them in the developed district. The land sold by small and large farmers together account for 86 per cent of the land sold in the district. But among the four villages in this district i.e., the underdeveloped district no land was sold by the farmers in the two tribal villages of the underdeveloped block T Rampur. Among the other two villages of the developed, block similar situation like that of the developed district was observed. That is, in the developed village maximum land was sold by marginal and small farmers and in the underdeveloped village large farmers have sold their land.

Table 77: Category-wise Land Sold (within the last 5 years) : Orissa

Village	Medium and large		Small farmers		Marginal farmers and agricultural labour		Total	
	Number	Area	Number	Area	Number	Area	Number	Area
Khurmunda	-	-	3	5	4	4	7	9
Rujanmal	-	-	-	-	-	-	-	-
Laudmal	2	5	-	-	1	2	3	7
Mandosil	-	-	1	3	3	4	4	7
Bargad	**2**	**5(21)**	**4**	**8(35)**	**8**	**10(43)**	**14**	**23**
Chancharabatti	-	-	3	4	1	2	4	6
Bondaguda	2	6	1	2	-	-	3	8
Kumudbahal	-	-	-	-	-	-	-	-
Damanguda	-	-	-	-	-	-	-	-
Kalahandi	**2**	**6(43)**	**4**	**6(43)**	**1**	**2(14)**	**7**	**14**

Land Purchased: Out of the total land purchased in the developed district i.e., Bargad, the share of large farmers was maximum with 52 per cent followed by marginal farmers with 30 per cent and small farmers with 17 per cent, respectively. Medium and large farmers have purchased land in the developed villages. Whereas, most of the land in the underdeveloped village was purchased by marginal and small farmers. In the underdeveloped district i.e., Kalahandi, small farmers purchased most of the land which accounts for 43 per cent of the total land purchased, followed by large farmers with 36 per cent and marginal farmers with 21 per cent. Whereas medium and large farmers purchased the land in the developed village of the developed block i.e., Chancharabatti of Junagad block. Almost all the small farmers and most of the marginal farmers have purchased the land in the underdeveloped village of the developed block i.e., Bondaguda of Junagad block.

Table 78: Category-wise Land Purchased within the Last Five Years: Orissa

Village	Medium and large		Small farmers		Marginal farmers and agricultural labour		Total	
	Number	Area	Number	Area	Number	Area	Number	Area
Khurmunda	3	7	-	-	2	2	5	7
Rujanmal	-	-	-	-	-	-	-	-
Laudmal	-	-	3	4	3	3	6	7
Mandosil	2	5	-	-	2	2	4	7
Bargad	**5**	**12(52)**	**3**	**4(19)**	**7**	**7(30)**	**15**	**23**
Chancharabatti	2	5	-	-	1	1	3	6
Bondaguda	-	-	4	6	2	2	6	8
Kumudbahal	-	-	-	-	-	-	-	-
Damanguda	-	-	-	-	-	-	-	-
Kalahandi	**2**	**5(36)**	**4**	**6(43)**	**3**	**3(21)**	**9**	**14**

This shows that in general land was being sold by the small and marginal farmers in the developed villages which was being purchased gradually by the large farmers. Whereas, in the underdeveloped villages land was being sold by the large farmers which was purchased by small and medium farmers.

Common Property Resources

Around 28 acres of village community land was being cultivated by the farmers in the developed district i.e., Bargad, of which marginal farmers account for 57 per cent and small farmers account for 43 per cent. The medium and large farmers were not accessing the government land in the developed district. They were also accessing it in the underdeveloped district particularly in the underdeveloped block i.e. T Rampur. Most of the small farmers (48 per cent) and marginal farmers (32 per cent) were utilising the government land in the underdeveloped district. This shows that development in irrigation is weaning away utilising the CPR's from the farmers.

Agrarian Structure

Net Sown Area: The net sown area of both the districts was taken for studying cropping pattern. It was observed from Table 79 that the share of wetland is more in net sown area of medium and large farms in Bargad with 73.8 per cent followed by dryland with 36.5 per cent. Whereas, in Kalahandi it was reverse for medium and large farmers i.e., the share of dryland was more with 67.2 per cent followed by the share of wetland with 32.7 per cent of net sown area. In case of small farmers also the share of wetland in total sown area was more in Bargad with 20.7 per cent than in Kalahandi district where it was 18.6 per cent. Similar is the case of marginal farmers where the share of wetland in Bargad and Kalahandi districts was around 15 and 7 per cent respectively. That is, the share of dryland was more and wetland was less for all the categories of farmers in Kalahandi district when compared to the Bargad district. In the developed villages of Bargad district the share of wetland was more than dryland for medium and large farmers when compared to the other categories of farmers (Annexures).

Table 79 : Category-wise Net Sown Area : Orissa

Category	Bargad			Kalahandi		
	Dryland	Wetland	Total	Dryland	Wetland	Total
Medium & large farmers	106(36.5)	164(73.8)	270(52.7)	158(67.2)	77(32.7)	235
Marginal farmers	64(83.8)	12(5.40)	76(14.8)	93(93)	7(7)	100
Small farmers	120(72.2)	46(27.7)	166(32.4)	179(81.3)	41(18.6)	220
Total	290(56.6)	222(43.4)	512	430(77.4)	125(22.5)	555

Table 80 : Category-wise and Village-wise Net Sown Area : Orissa

Bargad

Cate-gory	Khurmunda			Rujanmal			Laudmal			Mandosil			Total		
	Dry	Wet	Total	Dry	Wet	Total	Dry	Wet	Total	Dry	Wet	Total	Dry	Wet	Total
Medium & large farmers	26	89	115	-	-	-	43	19.5	62.5	37	58	95	106	164	270
Marginal farmers	23	2	25	22	-	22	27	3	30	12	3	15	84	8	92
Small & semi-medium	27	28	55	45	-	45	44	21	65	19	16	35	135	65	200
Total	76	120	196	67	-	67	114	43.5	157.5	68	77	145	325	2405	565.5

Kalahandi

Cate-gory	Chancharabatti			Bondaguda			Kumudbahal			Damanguda			Total		
	Dry	Wet	Total	Dry	Wet	Total	Dry	Wet	Total	Dry	Wet	Total	Dry	Wet	Total
Medium & large farmers	35.5	37	72.5	37.5	20	57.5	45	7.5	52.5	50	12.5	62.5	168	77	245
Marginal farmers	18	2	20	8	-	8	27	3	30	28	2	30	81	7	88
Small & semi-medium	21	9	30	36	11	47	61	9	70	46	9	55	164	38	202
Total	74.5	48	122.5	81.5	31	112.5	133	19.5	152.5	124	23.5	147.5	413	122	535

Cropping Pattern: Cropping pattern of the two districts based on net sown area was also taken up to study the production and marketable surplus of the crops in those areas. In the developed district i.e., Bargad paddy occupies major area with 496 acres which is 60.5 per cent of the gross cropped area. It was the major crop in this district particularly in the developed villages of Khurmunda and Mandosil with 76.7 and 69.3 per cent of the total area under paddy among the sample farmers in this district. Though it was the major crop in the other two underdeveloped villages in this district, it was grown in these villages mainly as rainfed crop or dryland crop in uplands without any supplemental irrigation. In all the four villages, almost the entire area under paddy was under high-yielding variety. The next major crop followed by paddy was groundnut with 14.8 per cent of the gross cropped area in the district. It is the major crop next to paddy in villages. However, it occupies more share in gross cropped area (GCA) in the underdeveloped villages when compared to the developed villages in the district. The other major crops in the district were sunflower, mustard, pulses and vegetables. The per cent share of area under these crops also was more in the underdeveloped villages when compared to the developed villages in the district. While paddy occupies more area for medium and large farmers with 60.7 per cent in the total area under paddy in the district, the per cent share of area of other crops like groundnut, sunflower, mustard and vegetables except pulses was more for small and marginal farmers. The degree of diversification by the various categories of farmers was also studied through diversification index. The diversification index of medium and large farmers in Bargad district was 37.3 whereas, it was 25.7 and 21.06 for small and marginal farmers, respectively. This shows that marginal farmers were more diversified in their cropping pattern followed by small and large farmers. The diversification index for the villages of Khurmunda and Mandosil was 42.3 and 40.2 whereas it was 22.8 and 21.15 per cent for Rujanmal and Laudmal, respectively. This shows that the developed villages were less diversified when compared to the underdeveloped villages, in the developed district.

Table 81 : Village-wise Cropping Pattern (area in acres) : Orissa

Crop	Bargad					Kalahandi				
	Khurm-unda	Rujan-mal	Laud-mal	Mando-sil	Total	Chancha-rabatti	Bonda-guda	Kumud-bahal	Daman-guda	Total
Paddy	241	63	65.5	154	496.5	113.5	59	42	50	264.5
Groundnut	32	25	40	25	122	-	-	-	-	-
Sunflower	14	16	28	10	68	-	-	-	-	
Mustard	10	6	13	14	43	4	8	15	11	38
Pulses	10	5	14	2	31	15	7	13	8	43
Vegetables	10-	14	19	17	60	7	10	18	17	52
Cotton	-	-	-	-	-	19	20.5	-	-	39.5
Maize	-	-	-	-	-	-	-	41.5	40.5	82
Ragi	-	-	-	-	-	10	11	23	21	65
GSA	317	129	179.5	222	820	168.5	115.5	152.5	147.5	584
NSA	196	67	157.5	145	565.5	122.5	112.5	152.5	147.5	535
CI	161	192	113	153	145	137	102	100	100	109
Per cent Distribution										
Paddy	76	48.8	36.4	69.3	60.5	67.3	51.08	27.5	33.8	45.2
Groundnut	11	19.3	22.2	11.2	14.8	-	-	-	-	-
Sunflower	4.8	2.4	15.5	4.5	8.2	-	-	-	-	-
Mustard	3.5	4.6	7.2	6.3	5.2	2.3	6.9	9.8	7.4	38
Pulses	3.4	3.8	7.7	0.9	3.7	8.9	6.06	8.5	5.4	43
Vegetables	3.4	10.8	10.5	7.6	7.3	4.15	8.6	11.8	11.5	52
Cotton	-	-	-	-	-	11.2	17.7	-	-	6.7
Maize	-	-	-	-	-	-	-	27.2	27.4	14.04
Ragi	-	-	-	-	-	5.9	9.5	15.08	14.2	11.1
GSA	100	100	100	100	100	168.5	115.5	152.5	147.5	584
CDI	42.3	22.8	21.15	40.2	37.6	39.25	34.39	20.39	21.72	23.4

Table 82 : Farmers' Category- wise Cropping Pattern (area in acres) : Orissa

Farmer type	Bargad				Kalahandi			
	Medium & large	Small & semi-medium	Marginal & Agri. labour	Total	Medium &large	Small semi-medium	Marginal & Agri. labour	Total
Paddy	164	46	4	214	154	116	25	295
Groundnut	38	52	32	122	-	-	-	-
Sunflower	17	32	19	68	-	-	-	-
Mustard	24	11	8	43	15	14	9	38
Pulses	15	8	8	31	23	13	7	43
Vegetables	12	31	17	60	8	31	13	52
Cotton	-	-	-	-	8.5	16	5	29.5
Maize	-	-	-	-	31	29	22	82
Ragi	-	-	-	-	26	27	12	65
GSA	270	180	88	538	265.5	246	93	604.5
NSA	270	166	76	512	245	202	88	535
CI	100	108	115	105	108	121	105	112
Per cent distribution								
Paddy	60.7	4.5	25.5	39.7	58	26.8	47.15	48.8
Groundnut	14.07	36.3	28.8	22.6	-	-	-	-
Sunflower	6.2	21.5	17.7	12.6	-	-	-	-
Mustard	8.8	9.09	16.1	7.9	5.6	9.6	5.6	6.2
Pulses	5.5	9.09	4.4	5.7	8.6	7.5	5.2	7.1
Vegetables	4.4	19.3	17.2	11.15	3.01	13.9	12.6	8.6
Cotton	-	-	-	-	3.2	5.3	6.5	4.8
Maize	-	-	-	-	11.6	23.6	11.7	13.5
Ragi	-	-	-	-	9.7	12.9	10.9	10.7
GSA	100	100	100	100	100	100	100	100
CDI	37.3	21.06	25.7	21.51	34.8	20.5	19.3	24.3

In the underdeveloped district i.e., Kalahandi also paddy was the major crop which occupies about 45 per cent of the gross cropped area followed by maize with 14 per cent of the GCA. The scenario under paddy in the villages of this district was slightly different than the developed district as a whole. It was the major crop in both the developed and the underdeveloped villages of the developed block i.e., Junagarh which occupies around 67 and 51 per cent of gross sown area, respectively. Whereas, in the other two villages of the underdeveloped block i.e., T Rampur, paddy, maize and ragi were the main crops. The share of other crops like cotton, mustard, pulses and vegetables in gross sown area was very high in these two underdeveloped tribal villages. The diversification index of these two villages is 20.39 and 21.72 i.e., more diversified when compared to other two villages in Junagarh block where it was 39.25 and 34.39. This shows that the farmers in the villages of the underdeveloped block were more diversified than the farmers in the villages of the developed block. This shows that non-availability of irrigation is the major reason for diversification in these villages. Paddy occupies a major share in this district also with 58 per cent of GSA for large farmers followed by marginal farmers with 47 per cent and small farmers with 26.8 per cent. The other major crops after paddy were maize and ragi for all the categories of farmers. The diversification index is 34.8 per cent for medium and large farmers, 19.3 and 20.5 for small and marginal farmers, respectively. This shows that small and marginal farmers were more diversified than large farmers in the underdeveloped district. The diversification index calculated for both the developed and the underdeveloped districts indicated the fact that less is the development in terms of irrigation, resource endowment and also land holding more is the diversification. This shows that small and marginal farmers in all the villages and also the farmers in the underdeveloped villages are reducing the risks in production by going for crop diversification.

Crop Production

In order to reduce the risk in production, the less resource endowed farmers are following crop diversification. To assess how far these diversified crops are helping them to sustain as well as able to market their produce, production of these crops was also studied by taking into consideration productivity levels. It was observed that in the developed district even in highly developed village like Khurmunda, in which the source of irrigation is Hirakud dam, the productivity levels of all the crops including paddy was very less when

compared to the national average productivity. With the yield of around 21 q/acr the entire area under paddy in the developed district i.e., Bargad was covered under high-yielding variety even in the areas which are grown under rainfed conditions. The high-yielding varieties of paddy were grown in the developed block of Kalahandi district and in the underdeveloped block i.e., T Rampur of Kalahandi district only the local varieties of paddy were seen growing. It is observed from the Table that out of the total production of paddy in the developed district the production from the developed villages alone was 89.4 per cent. Whereas, the production from the underdeveloped villages was a mere 10.4 per cent of the total production. The main varieties of paddy growing in the district are swarna-1001, puja, konark, mahanadi, lalat, MTU-7029, surendra, konark gajapati and sona masuri. While, the government is distributing the seeds of puja, konark, surendra and gajapati on a subsidy programme, the varieties like lalat and swarna are already popular in the district. The share of medium and large farmers is 77.3 per cent of the total paddy production among the farmers in the district, followed by small and semi-medium farmers and marginal farmers with 20.7 and 1.8 per cent, respectively. Though the yield level of paddy in the developed district was far less than the national average yield level, there was wide variation between the villages also. The yield levels of the developed villages was higher than the underdeveloped villages. In the groundnut, the HYV like gaint chobbis, ekabar and kisan were grown in all the villages in the district. The per cent share of production of groundnut for small farmers was more with 42.6 followed by large and marginal farmers in the district with 31.1 and 26.2, respectively. The production of sunflower was less in the developed villages when compared to the underdeveloped villages in the district. It was mostly grown by small farmers followed by marginal and large farmers with 47.05, 27.9 and 25 per cent of the total area under this crop, respectively. Though mustard was grown in all the villages in Bargad district during Rabi, its share of production was more in the villages of the underdeveloped block i.e, Paikmal. Not much variation in the yield of oilseed crops was observed between the villages of the developed district. Pulses are grown in all the villages mainly after paddy to use the residual moisture. The main pulse crops were greengram and blackgram. The per cent share of production of pulse crops was more for large farmers with 48.3 per cent of the total pulse production, followed by the share of small farmers with 20 per cent, respectively. There was wide variation in the yield level of pulse crops between the developed and the underdeveloped villages in the developed district i.e.Bargad. Vegetables are the main crops grown particularly in the

underdeveloped villages and also in the developed village of the underdeveloped block. The production of vegetables was relatively less in the developed village i.e, Khurmunda (with 16.6 per cent of the total vegetable production) when compared to the other villages. The share of small farmers was more in vegetable production with 51.6 per cent followed by marginal farmers and large farmers with 28.3 and 20 per cent, respectively out of the total vegetable production in the district. The main vegetables grown in the district are tomato, brinjal, beans, cabbage and cauliflower. While cabbage and cauliflower need certain amount of irrigation, the other vegetables are grown mostly under rainfed conditions in the Bargad district. While, the share of medium and large farmers was more in the total production of paddy and pulses in the Bargad district, the share of small and marginal farmers was more in the production of oilseeds crops like groundnut, mustard,sunflower and also vegetables.

In the underdeveloped district i.e., Kalahandi most of the paddy production (92.6 per cent) was from the villages both the developed and the underdeveloped of the developed block i.e., Junagarh. It is grown under HYV. Whereas, the paddy production of the other two tribal villages was very less with 7.2 per cent of the total paddy production. The varieties that are grown in these villages under paddy were only local varieties.Therefore, the yield levels of paddy were also very less in these villages compared to the other two developed villages. Cotton was the other main crop in Junagarh block and maize was the main crop in T Rampur block. The share of production for cotton crop was mainly from small farmers with 54.2 per cent of the total cotton production followed by large farmers with 28.8 and 16.9 per cent, respectively. Whereas, the share of maize production was almost equal among all the three categories. The other main crops other than the maize in the villages of the underdeveloped block are mustard and vegetables. The share of small and marginal farmers was more in vegetable production out of total vegetable production in the district. The productivity or yield levels of mustard crop were more in the tribal villages when compared to the other two villages of the developed block. While the share of large farmers was more in the total production of paddy in the underdeveloped district, the share of small and marginal farmers was more in the total production of cotton, mustard and vegetables. The share of maize production was almost same for all the three categories of farmers.

Table 83: Village-wise Productivity Levels : Orissa (Area: Acres; Production and Yield: Quintals)

Village		Bargad					Kalahandi				
		Khurm-unda	Rujan-mal	Laud-mal	Mando-sil	Total	Chanch-arabatti	Bonda-guda	Kumud-bahal	Daman-guda	Total
Paddy	A	214	63	65.5	154	496.5	113.5	59	42	50	264.5
	P	3975	252	491	2368	7043	1751	1081.5	312.75	460.8	3606
	Y	18.5	4	7.4	15.3	14.2	15.4	18.3	7.4	9.2	13.6
Groundnut	A	32	25	40	25	122	-	-	-	-	-
	P	96	75	120	75	366	-	-	-	-	-
	Y	3	3	3	3	3	-	-	-	-	-
Sunflower	A	14	16	28	10	68	-	-	-	-	-
	P	42	48	84	30	204	-	-	-	-	-
	Y	3	3	3	3	3	-	-	-	-	-
Mustard	A	10	6	13	14	43	4	8	15	11	38
	P	64	39	83.2	90	276.2	19.2	25.6	96	70.4	211.2
	Y	6.4	6.5	6.4	6.4	6.4	4.8	3.2	6.4	6.4	5.5
Pulses	A	10	5	14	2	31	15	7	13	8	43
	P	25	7.5	35	5	72.5	45	21	39	24	129
	Y	2.5	1.5	2.5	2.5	2.5	3	3	3	3	3

(Contd....)

Table 83: *(Contd....)*

Village		Bargad					Kalahandi				
		Khurm-unda	Rujan-mal	Laud-mal	Mando-sil	Total	Chanch-arabatti	Bonda-guda	Kumud-bahal	Daman-guda	Total
Vegetables	A	10	14	19	17	60	7	10	18	17	52
	P	500	100	950	850	3000	175	250	450	425	1300
	Y	50	7.4	50	50	50	25	25	25	25	25
Cotton	A	-	-	-	-	-	19	20.5	-	-	39.5
	P	-	-	-	-	-	76	61.5	-	-	62
	Y	-	-	-	-	-	4	3	-	-	1.56
Maize	A	-	-	-	-	-	-	-	41.5	40.5	82
	P	-	-	-	-	-	-	-	124.5	141.75	266
	Y	-	-	-	-	-	-	-	3	3.5	3.24
Ragi	A	-	-	-	-	-	10	11	23	21	65
	P	-	-	-	-	-	40	44	92	84	260
	Y	-	-	-	-	-	4	4	4	4	4

Table 84 : Farmers' Category-wise Area, Production and Yield Levels : Orissa

Farmer type		Bargad				Kalahandi			
		Medium & large	Small & semi-medium	Marginal & Agri. labour	Total	Medium & large	Small semi-medium	Marginal & Agri. labour	Total
Paddy	A	307	146.5	42.5	496.5	200.5	116	25	341.5
	P	5756.25	2586.6	796.8	9185	2947.5	1639	318.75	4905
	Y	18.75	17.9	18.75	18.5	14.7	14.12	12.75	14.36
Groundnut	A	38	52	32	122	-	-	-	-
	P	114	15	96	366	-	-	-	-
	P	3	3	3	3	-	-	-	-
Sunflower	A	17	32	19	68	-	-	-	-
	P	51	96	57	204	-	-	-	-
	Y	3	3	3	3	-	-	-	-
Mustard	A	24	11	8	43	15	14	9	38
	P	153.6	70.4	51.2	275.	96	89.6	57.6	243.2
	Y	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Pulses	A	15	8	8	31	23	13	7	43
	P	37.5	20	20	77.5	69	39	21	129
	Y	2.5	2.5	2.5	2.5	3	3	3	3

(Contd....)

Table 84 : *(Contd....)*

Farmer type		Bargad				Kalahandi			
		Medium & large	Small & semi-medium	Marginal & Agri. labour	Total	Medium & large	Small semi-medium	Marginal & Agri. labour	Total
Vegetables	A	12	31	17	60	8	31	13	52
	P	240	620	340	1200	200	775	325	1300
	Y	20	20	20	20	25	25	25	25
Cotton	A	-	-	-	-	8.5	16	5	29.5
	P	-	-	-	-	34	64	20	118
	Y	-	-	-	-	4	4	4	4
Maize	A	-	-	-	-	31	29	22	82
	P	-	-	-	-	93	87	66	246
	Y	-	-	-	-	3	3	3	3
Ragi	**A**	-	-	-	-	26	27	12	65
	P	-	-	-	-	104	108	48	260
	Y	-	-	-	-	4	4	4	4

Gross Value of Agricultural Produce and Crop Contribution: Table 85 shows per acre gross values of crops district-wise as well as village-wise. While per acre gross value of produce (PAGVP) was Rs. 6477 for the developed district, it was slightly less for the underdeveloped district with Rs. 6102. The PAGVP of both the developed villages was more than the underdeveloped villages in the developed district. Whereas, in the underdeveloped district i.e. Kalahandi the PAGVP of tribal villages i.e. the villages in the underdeveloped block was less than the villages of the developed block. In both the districts the PAGVP of mustard and vegetables was more than the paddy crop. An interesting observation is, the PAGVP of mustard, pulses and vegetables of the underdeveloped district was more than the developed district.

Table 85 : Total and per acre Gross Values of Agricultural Produce : Orissa

Crop	Bargad					Kalahandi				
	Khur-munda	Rujan-mal	Laud-mal	Mand-osil	Total	Chanc-hara-batti	Bond-aguda	Kum-dba hal	Dama-nguda	Total
Paddy	8360.5	1800	3373	6921	6423.6	6945.5	8249	3350	4147	6136
Groundnut	4500	4500	4500	4500	4500	-	-	-	-	-
Sunflower	4800	4800	4800	4800	4800	-	-	-	-	-
Mustard	11450	11700	11520	11571	11541	8640	5760	14400	4168.5	11974.8
Pulses	4500	4500	4500	4500	4500	5400	5400	5400	1005	5400
Vegetables	12000	4243	12000	12000	10190	15000	15000	15000	4904	15000
Cotton	-	-	-	-	-	8000	6000	-	-	6962
Maize	-	-	-	-	-	-	-	1500	247	1006
Ragi	-	-	-	-	-	600	2000	2000	646	1784.7
PAGVP	7191	3526	5438	7213	6477	6961	7494	5280	4924	6102

Table 86 : Commodity-wise Share in Area and Gross Value : Orissa

Village		Bargad					Kalahandi				
		Khurm-unda	Rujan-mal	Laud-mal	Mando-sil	Total	Chanch-arabatti	Bonda-guda	Kumud-bahal	Daman-guda	Total
Paddy	A	76.1	48.8	36.4	69.3	60.5	67.3	51.08	27.5	33.8	45.2
	V	56.1	3.5	6.9	33.4	60.04	48.5	29.98	8.66	12.77	45.5
Groundnut	A	11	19.3	22.2	11.2	14.8	-	-	-	-	-
	V	26.2	20.5	32.8	20.5	10.3	-	-	-	-	-
Sunflower	A	14	2.4	15.5	4.5	8.2	-	-	-	-	-
	V	20.5	23.5	41.17	14.7	6.14	-	-	-	-	-
Mustard	A	3.4	4.6	7.2	6.3	5.2	2.3	6.9	9.8	7.4	6.5
	V	23	14.14	30.17	32.6	9.3	7.5	10.12	47.5	34.8	12.7
Pulses	A	3.4	3.8	7.7	0.9	3.7	8.9	6.06	8.5	5.4	7.3
	V	32.2	16.12	45.16	6.5	2.6	34.8	16.2	30.2	18.6	6.5
Vegetables	A	3.4	10.8	10.5	7.6	7.3	4.15	8.6	11.8	11.5	8.9
	V	19.6	9.7	37.2	33.3	11.5	13.5	19.2	34.6	32.6	21.8
Cotton	A	-	-	-	-	-	11.2	17.7	-	-	6.7
	V	-	-	-	-	-	55.2	44.7	-	-	7.7
Maize	A	-	-	-	-	-	-	-	27.2	27.4	14.04
	V	-	-	-	-	-	-	-	75.45	24.5	2.3
Ragi	A	-	-	-	-	-	5.9	9.5	15.08	14.2	11.1
	V	-	-	-	-	-	5.17	18.9	39.6	36.2	3.2
GSA											
GVAP											

Table 86 shows the per centage distribution of area under different crops and share in the total value of agricultural produce. Paddy occupies the largest area and its contribution in gross value of agricultural produce is also more and almost same to that of share area at district level. Whereas, in all the villages the share of paddy in gross value of agricultural production is very less compared to the area under gross sown area. The decrease in share is more glaring in the underdeveloped villages. The share in GVAP of oilseed crops like groundnut and sunflower was less when compared to the area in gross sown area in Bargad district. However, the value of crops like mustard and vegetables was more when compared to their share in area under gross sown area, in both the districts. The value share of crops like maize and ragi was very much less when compared to their share in area in the Kalahandi district. This shows that the price realisation of other crops was not profitable when compared to their share in gross sown area. Though the price realisation of paddy crop is not on par with mustard and vegetables, farmers especially medium and large farmers are preferring it because of its assured market.

Table 87 : Farmers' Category-wise per acre Value of Agricultural Produce : Orissa

Crop	Bargad				Kalahandi			
	LF	SF	MF	Total	LF	SF	MF	Total
Paddy	8437	7945	8436	8333	4693	3918	3942	4443.3
Groundnut	4500	4240	4921	4500	-	-	-	-
Sunflower	4800	4500	3425	4800	-	-	-	-
Mustard	11550	12649	9990	11540	12000	12021	11840	11970
Pulses	4500	4425	4325	4500	5400	5400	5400	5400
Vegetables	12000	8680	11664	10190	15500	15000	15000	15076
Cotton	-	-	-	-	15411	6750	7200	9322
Maize	-	-	-	-	733	1284	1022	1006
Ragi	-	-	-	-	2000	1888	1583	1877
GVAP/Acre	11179.7	8869.5	7918.8	9873	5932.3	5505	5791.7	5739

Similar observations can be made from Table 87 about the farmers' category-wise per acre value of agricultural produce. It is seen from the Table that for all the categories of farmers in both the districts, the per acre value of mustard and vegetables was higher when compared to other crops. However, the per acre GVAP of large and medium farmers was higher than small and semi-medium farmers followed by marginal farmers in the developed district. In the underdeveloped district, though the per acre GVAP of large farmers was higher followed by marginal farmers and by small and semi-medium farmers.

Though for some crops like mustard and vegetables, the farmers in the underdeveloped district were able to fetch better price than the farmers in the developed district, because of quality consciousness and range of crops they were growing, in general it is observed that the price realisation or per acre GVAP in the underdeveloped district was less than the developed district. Though the PAGVAP of large farmers in both the districts is higher than the small and marginal farmers, the PAGVAP of large farmers in the developed district was higher than the underdeveloped district. Similar is the case of small and marginal farmers in both the districts. An interesting observation is the that PAGVAP of an underdeveloped village (Rujanmal) in the developed district was lower than the PAGVAP of the underdeveloped villages (tribal villages) of the underdeveloped district. This fringe village was suffering in both the ways with loss of forest due to the construction of Hirakud dam on one hand and no developmental activities on the other hand.

Access to Market:

The marketed surplus of the commodities was studied in order to find out access to market and also income generation capacity of the farmers. It was observed from Table 85 that in the Bargad district the marketed surplus of paddy was 68.1 per cent out of the total production of paddy among sample farmers. Among the four villages the marketed surplus of paddy was high for developed villages like Khurmunda with 58.8 per cent of the total marketed surplus of the district, followed by Mandosil and Laudmal with 32.5 and 8.6 per cent, respectively. It was observed that (Table 88) among the different categories of farmers the marketed surplus of paddy for medium and large farmers was more with 74 per cent of production followed by small and marginal farmers with 65 and 37.3 per cent of production, respectively. The marketed surplus of oilseed crops like groundnut, sunflower and mustard was 83.6, 100 and 96.3 per cent,

respectively out of total production. Out of the total paddy marketed, the share of medium and large farmers was more with 80.1 per cent followed by small and semi-medium farmers and marginal farmers with 18.8 and 0.98 per cent, respectively. Whereas, for the crops like groundnut, the share of small farmers was more with 43.1 per cent followed by large and marginal farmers with 33.3 and 23.5 per cent, respectively. Similar is the case of sunflower crop and also vegetables with the share of 47.05 and 51.6 per cent, respectively for small farmers followed by large farmers with 25 and 20 per cent followed by marginal farmers with 27.9 and 28.3 per cent, respectively. The share of mustard and pulses was more for large farmers with 56.9 and 100 per cent of the total quantity marketed followed by the share of small and marginal farmers for mustard. The share of marginal farmers in pulses was almost nil. That is, in the developed district, in general, the marketed surplus of paddy was more from the developed villages. For the other crops, the marketed surplus was more from the underdeveloped villages. Among the different categories of farmers, the share of quantity marketed was more for paddy, mustard and pulses for large farmers. For all the other crops including vegetables it was more for small farmers.

In case of under developed district i.e, Kalahandi, the marketed surplus for paddy was more from the villages in the developed block i.e., Junagarh than the villages of the underdeveloped block. Among the different categories of farmers, the share of marketed surplus of paddy crop was more from medium and large farmers with 61.6 per cent followed by small and semi-medium farmers with 32.7 per cent and marginal farmers with 5.6 per cent. The marketed surplus of cotton crop was more from the villages of the developed block. The share of cotton crop for small farmers was 54.2 per cent followed by large farmers with 28.8 per cent and marginal farmers with 16.9 per cent. The total quantity marketed for maize and ragi was more from the villages of the underdeveloped block i.e, T Rampur and the share of these crops was more for large farmers with 42.3 and 81.8 per cent followed by small farmers with 34.1 and 18.18 per cent and marginal farmers with 23.4 per cent for maize crop. The share of mustard crop of large farmers was also more. The share of pulses was also more for medium and large farmers with 82.6 per cent of the total quantity marketed and it was nil for the small farmers. The share of vegetables was more for small farmers followed by marginal and large farmers. That is, in the underdeveloped district also the quantity marketed was more for large farmers for the crops paddy, mustard, pulses and also for maize and ragi crops. For the crops cotton and vegetables it was more for small farmers. Though the small and marginal farmers

Table 88 : Village-wise Agricultural Produce Marketed (Q) : Orissa

	Bargad					Kalahandi				
Crop	Khur-mun-da	Ruj-an-mal	Laud-mal-	Man-dosil	Total	Chan-char-abatti	Bond-agu-da	Kum-udb-ahal	Dam-ang-uda	Total
Paddy	2840 (71.40)	-	417.5 (84.9)	1570 (66.3)	4827 (68.1)	1260 (71.9)	739.5 (68.3)	80.4 (25.7)	141 (30.5)	2079 (61.5)
Groundnut	81 (84.3)	60 (80)	105 (87.5)	60 (19.6)	306 (83.6)	-	-	-	-	-
Sunflower	42 (100)	48 (100)	84 (100)	30 (100)	204 (100)	-	-	-	-	-
Mustard	62 (96.8)	37 (94.8)	81 (97.3)	87 (96.6)	267 (96.3)	23.6 (92.1)	49.2 (96)	94 (97.9)	67.4 (95.7)	234.2 (96.2)
Pulses	10 (40)	0	20 (57.1)	0	30 (38.7)	30 (66.6)	6 (28.5)	24 (61.5)	9 (37.5)	69 (53.4)
Vegetables	200 (100)	280 (100)	380 (100)	340 (100)	1200 (100)	175 (100)	250 (100)	450 (100)	425 (100)	1300 (100)
Cotton	-	-	-	-	-	76 (100)	61.5 (100)	-	-	137.5 (100)
Maize	-	-	-	-	-	-	-	100 (80.3)	97 (39.3)	197 (80)
Ragi	-	-	-	-	-	-	-	32 (34.7)	24 (28.5)	56 (21.5)

- Figures in parentheses indicate per cent of production.

Table 89 : Category-wise Agricultural Produce Marketed (Q) : Orissa

Crop	Bargad				Kalahandi			
	Medium & large	Small & semi-medium	Marginal & Agri. labour	Total	Medium & large	Small semi-medium	Marginal & Agri. labour	Total
Paddy	2276(74)	536(65)	28(37.3)	2840(71.4)	2021.25(68.5)	1076(65.6)	183.75(57.5)	3281(66.8)
Groundnut	102(89.4)	132(84.6)	72(75)	306(83.6)	-	-	-	-
Sunflower	51(100)	96(100)	57(100)	204(100)	-	-	-	-
Mustard	152(98.9)	67.2(95.4)	48(93.7)	267(97.2)	94(97.9)	87(97.7)	55(96.4)	236(97.1)
Pulses	255(68)	0	0	255(38.06)	57(82.6)	15(38.4)	0	72(55.8)
Vegetables	300(100)	775(100)	425(100)	1500(100)	200(100)	775(100)	325(100)	1300(100)
Cotton	-	-	-	-	34(100)	64(100)	20(100)	118(100)
Maize	-	-	-	-	83(42.3)	67(77.01)	46(23.4)	196(79.6)
Ragi	-	-	-	-	54(51.9)	12(11.1)	0	66(25.3)

Table 90 : Village-wise Share in Total Crops Marketed (%) : Orissa

	Bargad					Kalahandi				
Crop	Khur-munda	Ruj-an-mal	Laud-mal-	Man-dosil	Total	Chan-char-abatti	Bond-agu-da	Kum-udb-ahal	Dam-ang-uda	Total
Paddy	58.8	0	8.6	32.5	100	60.5	35.5	3.8	6.7	100
Groundnut	26.4	19.6	34.3	19.6	100	-	-	-	-	-
Sunflower	20.5	23.5	41.1	14.7	100	-	-	-	-	-
Mustard	23.2	13.8	30.3	32.5	100	10.07	21	40.2	28.7	100
Pulses	33.3	0	66.6	0	100	43.47	8.6	34.78	13.04	100
Vegetables	100	100	100	100	100	13.4	19.2	34.6	32.6	100
Cotton	-	-	-	-	-	55.2	44.7	-	-	100
Maize	-	-	-	-	-	-	-	50.7	49.2	80
Ragi	-	-	-	-	-	-	-	57.1	42.8	21.5

have diversified their crops more than the large farmers, most of their production was used for consumption. Therefore, for any crop holding size has been determining the marketed surplus.

The total per household income from agriculture in the developed villages of the underdeveloped block was more (Rs. 1,60,132) than the developed village of the developed block. Among the different categories of farmers between these two villages the income of large and small farmers of the developed village in the developed block was more and marginal farmers was less than the developed village in the underdeveloped block.

The total per household income from agriculture in the underdeveloped villages of the developed block was less than the underdeveloped villages of underdeveloped block. And the income of small farmers was more and marginal farmers was less for the underdeveloped village of the developed block than the underdeveloped block. This shows that the income from agriculture was more from the villages of the underdeveloped than the developed villages and in the

developed villages also it is more in favour of medium and large farmers. The income from agriculture of small, semi-medium and marginal farmers was better in the underdeveloped villages when compared to the developed villages.

***Underdeveloped District**:* The total per household income from agriculture in the developed villages of the developed block is more than the underdeveloped village of the underdeveloped block. Similar is the case with all the categories of farmers where the income from agriculture of the developed villages of the developed block is more than the developed villages of the underdeveloped block.

The total per household income from agriculture of the underdeveloped villages of the underdeveloped block was less than the underdeveloped villages of the developed block. Among the different categories of farmers, the income of large and marginal farmers of the underdeveloped villages of the underdeveloped block was less and small farmers was more than the income of the underdeveloped villages of the developed block.

This shows that in the underdeveloped district the income from agriculture was more from the developed villages than the underdeveloped villages and it is in favour of medium and large farmers in the developed villages. Whereas, the same was in favour of small farmers in the underdeveloped villages.

Total Income: In the developed district the major source of income for all the categories of farmers was income from agriculture, followed by income from small business, remittances, wages and livestock in the order. Whereas in the underdeveloped district the major sources of income were income from agriculture followed by wages, livestock, remittance etc. In both the districts the contribution of income from agriculture for large farmers was around 93 per cent followed by the income from small business whose contribution was 4.16 per cent in the developed district and 2.4 per cent in the underdeveloped district. For small and semi-medium farmers, apart from agriculture, the other major source of income was livestock in the developed district and wages in the underdeveloped district. The income from agriculture was more (89.5 per cent) in case of marginal farmers of the underdeveloped district than the developed district (83.5 per cent). Though wages is the second major source of income in both the villages for marginal farmers, their contribution to total income was more in the developed district (6.4 per cent) than the underdeveloped district (3.7 per cent). The contribution of livestock income was more for marginal farmers in the underdeveloped district (2.6 per cent) than the developed district (1.2 per cent).

Table 91 : Farmers' Category-wise and Village-wise Sources of Income (Rs) : Orissa

Village: Khurmunda	Block: Attabira		District: Bargad	
Farmer type	Medium and large	Small farmers	Marginal farmers	Total
1	**2**	**3**	**4**	**5**
Income from agriculture	1538166	540450	201030	2279646
Income from rent of land	-	16500	-	16500
Income from agricultural implements	20000	3000	-	
Income from livestock	9500	6000	5500	21000
Wage earnings	-	-	24000	24000
Like small business etc.	20000	-	-	20000
Remittances	-	10000	20000	30000
Total income	1587666	575950	250530	2414146
Income per household	317533	57595	25053	96565
Total members in household	51	71	69	191
Income per capita	31130	8111	3630	12639
Village: Rujanmal	**Block: Attabira**		**District: Bargad**	
Income from agriculture	-	290400	164400	454800
Income from rent of land	-	-	-	-
Income from agricultural implements	-	-	-	-
Income from livestock	-	-	-	-
Wage earnings	-	19200	28800	48000
Like small business etc.	-	-	-	
Remittances	-	25000	20000	45000
Total household income	-	334600	213200	547800
Total members in household	-	89	81	170
Income per household	-	33460	21320	27390
Income per capita	-	3759	2632	3222

(Contd....)

Table 91 : *(Contd....)*

Village: Laudmal	Block: Paikmal		District: Bargadh	
1	2	3	4	5
Income from agriculture	390810	383115	202185	976110
Income from rent of land	19000	5000	-	24000
Income from agricultural implements	5500	-	-	5500
Income from livestock	15000	12000	5500	32500
Wage earnings	-	14400	20000	34400
Like small business etc.	55000	-	-	55000
Remittances	-	20000	25000	45000
Total household income	485310	434515	252685	1172510
Total members in household	37	67	54	158
Income per household	97062	43451	25268	46900
Income per capita	13116	6485	4679	7421
Village: Mandosil	**Block: Paikmal**		**District: Bargadh**	
Income from agriculture	1089540	129240	382545	1601325
Income from rent of land	-	22050	11025	33075
Income from agricultural implements	7600	-	-	7600
Income from livestock	12000	8000	3500	23500
Wage earnings	-	-	-	-
Like small business etc.	60000	-	24000	84000
Remittances	-	9600	-	9600
Total household income	1169140	168890	421070	1759100
Total members in household	39	38	67	144
Income per household	23382	16889	42107	70364
Income Per capita	29977	4444	6284	12215

(Contd....)

Table 91 : *(Contd....)*

Village : Chancharbatti	Block : Junagarh		District :Kalahandi	
1	2	3	4	5
Income from agriculture	781055	166875	318230	1266160
Income from rent of land	-	-	16000	16000
Income from agricultural implements	-	-	3000	13500
Income from livestock	15500	6000	12000	33500
Wage earnings	-	33600	14400	48000
Like small business etc.	30000	-	15000	45000
Remittances	-	-	-	-
Total household income	837055	206475	378630	1422160
Total members in household	33	64	59	156
Income per household	167411	20647	37863	56886
Income per capita	25365	3226	6417	9116
Village: Bondagauda	**Block: Junagarh**		**District :Kalahandi**	
Income from agriculture	488050	98845	408530	995425
Income from rent of land	9000	-	2000	11000
Income from agricultural implements	3000	-	2000	5000
Income from livestock	5000	7000	9000	21000
Wage earnings	9800	32000	26000	67800
Like small business etc.	15000	-	-	15000
Remittances	-	30000	15000	45000
Total household income	529850	167845	462530	1160225
Total members in household	35	82	63	180
Income per household	105970	16784	46253	46409
Income per capita	15138	2047	7342	6446

(Contd....)

Table 91 : *(Contd....)*

Village: Kumudbahal	Block : T.Rampur		District: Kalahandi	
1	2	3	4	5
Income from agriculture	220080	150900	371890	742870
Income from rent of land	-	-	-	-
Income from agricultural implements	-	-	-	-
Income from livestock	6000	8000	9000	23000
Wage earnings	5000	12000	10000	27000
Like small business etc.	-	-	-	-
Remittances	-	15000	10000	25000
Total household income	231080	185900	400890	817870
Total members in household	39	43	68	150
Income per household	46216	18590	40089	32714
Income per capita	5925	4323	5895	5452
Village: Damanguda	**Block : Th Rampur**		**District: Kalahandi**	
Income from agriculture	247035	160550	298375	705960
Income from rent of land-	-	-	-	-
Income from agricultural implements	-	-	-	-
Income from livestock	8000	10000	12000	30000
Wage earnings	4000	8000	8000	20000
Like small business etc.	-	-	-	-
Remittances	-	-	-	-
Total household income	259035	178550	318375	755960
Total members in household	41	63	49	153
Income per household	51807	17855	31837	30238
Income per capita	6317	2834	6497	4940

Table 92 : Farmers' Category-wise and District-wise Sources of Income (Rs) : Orissa

Farmer type	Bargad				Kalahandi			
	Medium and large	Small and semi-medium	Marginal farmers and agricul-tural labourers	Total	Medium and large	Small and semi-medium	Marginal farmers and agricul-tural labourers	Total
Agriculture	3018516	1343205	950160	5311881	1736220	577170	1397025	3710415
Rentals	19000	43550	11025	73575	9000	-	18000	27000
Agricultural implements	33100	3000	-	36100	13500	-	5000	18500
Livestock	36500	26000	14500	77000	34500	31000	42000	107500
Wages	-	14400	72800	87200	18800	85600	58400	162800
Small business etc.	135000	-	24000	159000	45000	-	15000	60000
Remittances	-	64600	65000	129600	-	45000	25000	70000
Total household income	3242116	1494755	1137485	5874356	1857020	738770	1560425	4156215
Total members in household	127	265	271	663	148	239	252	639
Income per household	162106	37369	28437	58743	92851	18469	39010	41562

(Contd....)

Table 92 : *(Contd....)*

Farmer type	Bargad				Kalahandi			
	Medium and large	Small and semi-medium	Marginal farmers and agricul-tural labourers	Total	Medium and large	Small and semi-medium	Marginal farmers and agricul-tural labourers	Total
Income per capita	25528	5640	4197	8860	12547	3091	6192	6504
Source-wise per cent contribution to total household income								
Agriculture	93	89	83.5	90.4	93.4	78.1	89.5	89.2
Rentals	0.5	.9	0.9	1.2	0.4	-	1.15	0.6
Agricultural implements	1.02	0.2	-	0.6	0.7	-	0.3	0.4
Livestock	1.1	1.7	1.2	1.3	1.8	4.1	2.6	2.5
Wages	-	0.9	6.4	1.4	1.01	11.5	3.7	3.9
Small business etc.	4.16	-	2.1	2.7	2.4	-	0.9	1.4
Remittances	-	4.3	5.7	2.2	-	6.09	1.6	1.6
THI								
PHI								
PCI								

Per Capita Income Disparities: Very significant differences in the per capita income level among the villages and among different categories of farmers were found in the study area. As against the average per capita income of Rs. 7703 for the State as a whole, the same was found to be Rs. 8860 in Bargad and Rs. 6504 in Kalahandi districts. Thus, the per capita income in Kalahandi is below average and is lower by Rs.2356 when compared with the developed district Bargad. The difference is quite glaring among the different categories of farmers between the two districts. The average per capita income from all sources for large farmers is Rs.25,528 in Bragad which was higher by Rs. 12981 than that of Kalahandi (Rs. 12547). This difference is appreciably apparent in case of small farmers also with Rs.2549. However, it is surprising to observe that the per capita income of marginal farmers of the underdeveloped district Kalahandi was higher than the PCI of the developed district Bargad by Rs. 1995. This can be attributed mostly by the type of diversified cropping pattern adopted by these farmers in the underdeveloped district.

Table 93 : Category-wise and Village-wise Per Capita Income : Orissa

Village	Medium & large farmers	Small farmers	Marginal farmers	Total
Khurmunda	31130	8347	3528	12639
Rujanmal	—	3759	2632	3222
Laudmal	13116	6485	4679	7421
Mandosil	29977	4444	6285	12215
Bargad	**25528**	**5640**	**4197**	**8890**
Chancharbatti	25365	3226	6417	9116
Bondaguda	15138	2047	7342	6446
Kumudhahal	5925	4323	5895	5452
Damanguda	6317	5834	6497	6940
Kalahandi	**12547**	**3091**	**6192**	**6504**

It is also observed that within the developed district, income disparity was not observed between the developed villages. But it was observed between the two developed villages of the underdeveloped district. This is mostly because of the type of cropping pattern and marketing support to these crops. For ex: in Chancharabatti the main crop was paddy which was enjoying the benefits of market support. Whereas, in the other developed village Bondaguda, though the large farmers were well-off with the type of cropping pattern they adopt, their per capita income was far less than the large farmers of Chancharabatti (by Rs.19, 048). The crops they grow including paddy are mainly with local varieties which do not fetch higher market price. The institutional support system like agricultural extension in this village is totally absent when compared to the other developed village. Similar is the case of other two categories of farmers between the two developed villages.

Poverty:

The per capita consumption expenditure or the poverty line of Orissa State was Rs.323 per month and it is Rs. 3887 per year. Table 94 shows the number of households below poverty line in each category of the farmers and their share in total poverty in the village and districts. Similarly, Table 95 shows farmers' categories-wise poverty incidence.The incidence of poverty among all the categories of farmers was 38 per cent for Orissa State. The maximum number of households below poverty line were more in the developed district i.e. Bargad when compared to the underdeveloped district i.e. Kalahandi. Among the large farmers, the developed district has less number of households below poverty line with 5 per cent when compared to the underdeveloped Kalahandi district with 20 per cent. Among the small farmers' category the number of households below poverty line was less in the developed district with 42.5 per cent. Whereas, in the underdeveloped district it was 52.5 per cent. Surprisingly, the situation of marginal farmers with number of households below poverty line was more in the developed Bargad district with 24, when compared to the underdeveloped district with 9. The incidence of poverty among marginal farmers was 60 per cent for the developed district and 22.5 per cent for the underdeveloped district. Another interesting observation, the number of households as well as the incidence of poverty in Orissa State for marginal farmers was less than small farmers with 41.25 and 47.5 per cent, respectively, which shows that small farmers are more vulnerable and poverty stricken when compared to marginal farmers. The situation of the marginal farmers was slightly better due to occupational diversity such as labour work and migration.

Table 94 : Category-wise Distribution of BPL Households : Orissa

Village	LF	SF	MF	Total
Khurmunda	-	4	8	12
Rujanmal	-	7	9	16
Laudmal	1	2	5	8
Mandosil	-	4	2	6
Bargad	**1**	**17**	**24**	**42**
Chancharabatti	-	6	3	9
Bondaguda	1	7	2	10
Kumudbahal	2	3	2	7
Damanguda	1	5	2	8
Kalahandi	**4**	**21**	**9**	**34**
Orissa	5	38	33	76

Table 95 : Per cent Households Below Poverty Line : Orissa

Village	LF	SF	MF	Total
Khurmunda	-	40	80	48
Rujanmal	-	70	90	80
Laudmal	25	20	50	32
Mandosil	-	40	20	60
Bargad	**5**	**42.5**	**60**	**42**
Chancharabatti	-	60	30	90
Bondaguda	10	70	20	40
Kumudbahal	40	30	20	28
Damanguda	20	50	20	32
Kalahandi	**20**	**52.5**	**22.5**	**34**
Orissa	**12.5**	**47.5**	**41.25**	**38**

Employment Status:

Table 96 shows the break-up of total population into adult male and female population, and male and female workers per household. The Table also shows total potential employment (in terms of mandays) in the two districts. There was not much difference in the availability of workers per household among the different categories of farmers. As expected, the availability of female workers per household was less than the male workers per household. The potential male as well as female employment among the small and marginal farmers of the developed Bargad was more than the underdeveloped Kalahandi district.

Table 96 : Adult Population and Potential Mandays : Orissa

Category	Bargad				Kalahandi				Orissa			
	LF	SF	MF	Total	LF	SF	MF	Total	LF	SF	MF	Total
Total adult population	88	144	163	395	73	101	94	268	161	245	257	663
Total adult males	48	74	84	206	35	46	50	131	83	120	134	337
Total adult females	40	70	79	189	38	55	44	137	78	125	123	326
Male workers per HH	1.5	1.8	1.9	1.7	1.5	1.2	1.2	1.3	1.2	1.5	1.6	1.5
Female workers per HH	1	1.75	1.6	1.8	1.2	1	1.2	1.2	1	1.4	1.75	1.75
Potential male employment	405	486	513	459	405	324	324	351	324	405	432	405
Potential female employment	270	473	432	486	324	270	324	324	270	378	473	473

Sectoral Distribution of Employment: Table 97 shows the proportion of adult population employed in different sectors. The employed adult population as a per cent of total adult population was around 73 for the Orissa State as a whole. Similarly, the proportion of marginal farmers employed was more (81.3 per cent) followed by small farmers (77.2 per cent) and large farmers (33.4 per cent).

Table 97 : Sector-wise Employment Status : Orissa

Farmer' type	Total adult members in the family	Own culti-vation	Others' field	Wage workers	HH labour	Small busi-ness	Other activi-ties	Migrants	Total	Per cent adults emplo-yed
Bargad										
LF	88	41	-	-	-	7	-	-	48	54.5
SF	144	45	28	24	-	2	-	7	99	68.7
MF	163	44	21	46	6	-	-	10	118	72.3
Total	395	130	39	70	6	9	-	17	271	68.6
Kalahandi										
LF	73	35	-	-	-	3	-	-	38	52
SF	101	49	16	25	-	-	-	3	93	92
MF	94	36	14	22	3	-	-	7	82	87
Total	268	120	30	47	3	3	-	10	213	79.4
Orissa										
LF	161	76	-	-	-	10	-	-	86	53.4
SF	245	94	34	49	-	2	-	10	189	77.2
MF	257	80	35	68	9	-	-	17	209	81.3
Total	663	250	69	117	9	12	-	27	484	73

The large farmers employed in own cultivation as well as small business were more in the developed (Bargad) district than the Kalahandi district. The number of small farmers engaged in own cultivation was more in Kalahandi (49) when compared to Bargad district (45). Though in absolute numbers, the number of marginal farmers engaged in own cultivation was less for Kahahandi district with 36 when compared to Bargad district with 45, in real terms it was 43.9 and 37.2 per cent, respectively. The actual employment of adult population (percentage) among large and small farmers' category was more in the developed Bargad district when compared to the underdeveloped Kalahandi district. Whereas, for marginal farmers it was more in Kalahandi district than Bargad district.

Employment Gap

It is seen from Table 98 that the male employment gap for Orissa State was 93, whereas, it was 116 for female workers, both the genders and both the categories of farmers together it was 209 days for each and every household. Among the small farmers' category the employment gap was more in Kalahandi district with 241 days when compared to Bargad district with 24 days. Whereas, in case of marginal farmers' category the employment gap was less in Kalahandi district with 115 days when compared to Bargad district with 212 days. This might be the reason due to which the incidence of poverty was less among the marginal farmers of Kalahandi district when compared to Bargad district. The employment gap of marginal farmers was less than the small farmers for Orissa State, due to which the number of households below poverty line among marginal farmers was less in Kalahandi district when compared to the Bargad district.

Table 98 : Employment Gap : Orissa

Farmer	Bargad			Kalahandi			Orissa		
category	SF	MF	Total	SF	MF	Total	SF	MF	Total
Males									
Total adult population	144	163	307	101	94	195	245	257	502
Total adult males employed	74	84	158	46	50	96	120	134	254
Average males workers per HH	1.8	1.9	1.7	1.2	1.2	1.3	1.5	1.6	1.5
Actual males employed per HH	1.2	1.3	1.2	1.1	1.05	1.07	1.15	1.2	1.09
Potential male mandays	486	513	459	324	324	351	405	432	405
Actual male mandays	294	356	318	251	273	283	303	318	312
Male employment gap	192	157	141	73	51	68	102	114	93
Females									
Total adult females	70	79	149	55	44	99	125	123	248
Average female workers per HH	1.75	1.6	1.8	1	1.2	1.2	1.4	1.75	1.75
Actual females employed per HH	1.2	1.15	1.2	0.92	1.04	95.2	1.06	1.09	1.07
Potential female mandays	473	432	486	270	324	324	378	473	473
Actual female mandays	382	377	397	102	260	251	225	363	357
Female employment gap	91	55	89	168	64	73	153	110	116
Total Potential mandays per HH	959	788	945	594	648	675	783	905	878
Actual mandays per HH	676	576	715	353	533	534	558	654	669
Employment status	224	212	230	241	115	141	255	224	209

Migration : Migration of labour was observed in all the villages except the two villages of the underdeveloped block of the underdeveloped district i.e. Damanguda and Kumudbahal villages of T Rampur block of Kalahandi district (Table 99). In these two villages almost all the households were cultivating the land. Their source of livelihood is only agriculture. Apart from their own land they also cultivate the land around the village which belongs to CPR and also part of the forest land. This shows that apart from regular agriculture they were also involved in shifting cultivation. Migration was not observed in these two villages. Whereas, in the other villages, both seasonal migration for agricultural operations and temporary or short-term migration was observed for specialised operations like brick making etc. For seasonal migration, the place of migration is short distance i.e. within the district or the neighbouring district. Whereas, for specialised operations, the migration was for other States like MP, AP and UP. The remittances were used mainly to pay back the loans taken for health or marriage purposes followed by creating assets like land and house, etc.

Farmers' Category-wise Migration: As mentioned earlier, no significant migration was seen in the villages of the underdeveloped block i.e. T Rampur block. Table 100 shows the farmers' categorw-wise migration status. The number of households reporting migration was found to be higher in the developed district (17) compared to the underdeveloped district (10).

Table 99 : Migration : Orissa

Villages	Type of migration	Place & distance of migration	Reasons	Duration	Remittances are used for
Khurmunda	Seasonal	Short distance	Agrl. operations	120 (days)	Creating assets like houses, except land & credit
Rajanmal	Seasonal & temporary	Short distance	Agrl. operations	120 (days)	Livelihood
Laudmal	Temporary	Ayodhya, AP, UP, Bargad	Brick making	360 days	Livelihood,assets like house and land
Mandosil	Seasonal	Short distance	Agrl. operations	120 days	Credit/expenditure
Bargad					
Chancharabatti	No migration	-	-	-	Credit
Bondaguda	Seasonal	Short distance	Agrl. operations	100 day	
Kumudbaha	No	No	No	No	No
Dhamanguda	No	No	No	No	No
Kalahandi					

Table 100: Farmers' Category-wise Migration : Orissa

Category	Total households	No. of persons reporting migration
Developed district (Bargad)		
Medium and large farmers	20	0
Marginal farmers	40	10(25)
Semi-medium and small farmers	40	7(17.5)
Total	100	17
Underdeveloped district (Kalahandi)		
Medium and large farmers	20	0
Marginal farmers	40	7(17.5)
Semi-medium and small farmers	40	3(7.5)
Total	100	10
Overall		
Medium and large farmers	40	0
Marginal farmers	80	17(21.2)
Semi-medium and small farmers	80	10(12.5)
Total	200	27

From the developed district the number of marginal farmers migrated were around 10 and the number of small farmers were 7. Among the four villages of the developed district the number of marginal farmers migrated were more from the developed villages and the number of small farmers migrated was more from the underdeveloped villages. In the developed village Khurmunda both out-migration and in-migration was observed. Out-migration was a temporary migration mostly by marginal farmers and agricultural labour for the operations like sugarcane cutting, road laying etc. in the nearby villages. The in-migration in the developed villages was from the other neighbouring villages for the regular agricultural operations where the hiring was mostly on contract basis. In the underdeveloped villages of Bargad district, small farmers also migrated along with marginal farmers. The migration was both temporary and permanent. Mostly it was for specialised purposes like brick making to neighburing states like

Andhra Pradesh, Maharasthra etc. In the underdeveloped district marginal farmers migrated more than the small farmers. But the migration was observed in the developed block i.e. Junagarh than in the villages of the underdeveloped block i.e. T Rampur block. It was also mostly seasonal migration.

Use of Remittances: Table 101 shows the purpose-wise utilisation of the remittances sent by the migrant family members. In the underdeveloped district almost all the households or family members of the migrated persons have felt that maintenance of family (100 per cent) was the major reason for migration followed by repayment of debt (51.8 per cent), sickness (40.7 per cent) and land purchasing (40 per cent). Whereas, major reasons in the developed district for migration apart from maintenance of family was repayment of debt (18.1 per cent), land purchasing (13.6 per cent) and other social responsibilities like daughter's marriage.

Table 101 : Use of Remittances : Orissa

Use of Remittances	Bargad	Kalahandi	Overall
Maintenance of family	17(38.6)	10(100)	27(100)
Repayment of debt	8(18.1)	6(60)	14(51.8)
Sickness	4(9.09)	7(70)	11(40.7)
House construction	2(4.5)	2(20)	4(14.8)
Land purchased	6(13.6)	4(40)	10(37)
Marriage	3(6.8)	2(20)	5(18.5)
Others	4(9.09)	3(30)	7(25.9)
Total	44	34	77

MAJOR FINDINGS

Profile

- The total members of household were more in the developed district, block and villages when compared to the underdeveloped villages, block and district.
- Majority of the sample farmers in both the districts fall within the age group of 35-59 years. The per cent of small and marginal farmers in the productive age group of 18 to 25 and 25 to 34 was more in the underdeveloped district when compared to the developed district.

Literacy

a) Household :

- The per centage of male literacy was more and female literacy was less in the developed villages and the per centage of both male and female literacy was very less in the underdeveloped villages.
- Though the literacy rate of both the districts was very less when compared to the State average, the literacy rate of the underdeveloped district was much more less than the developed district.
- In both the districts the literacy rate of medium and large farmers was significantly higher than the small and marginal farmers.

b)Sample Farmers :

- Twenty nine per cent of the sample farmers in the developed district and 55 per cent in the underdeveloped district were totally illiterate.
- The educational status of farmers in the developed district with the literacy rate of 71 per cent was found to be much better when compared to the underdeveloped district with a literacy rate of 45 per cent.
- The per cent of large and medium farmers who have gone up to middle school level was more in the developed district when compared to the underdeveloped district.
- The overall literacy rate for the State among the sample farmers was 58 per cent.

Employment/Occupation

a)Household :

- The employment among the total adult members was 89 per cent among the sample farmers in the developed district.
- Whereas, it was about 114 per cent among the sample farmers in the underdeveloped district. That is, secondary source of employment was also more in this district. In both the districts, it was highest for small farmers followed by marginal farmers and large farmers. The females employed in own cultivation was more in small farmers' category and the females employed in others' field was more in marginal farmers' category.

b)Sample Farmers :

- Sixty per cent of sample farmers in the developed district and 45 per cent in the underdeveloped district are totally dependent on agriculture and had no secondary occupation.
- The dependency on agriculture as a sole occupation was high among the large and medium farmers in both the districts when compared to the other two categories of farmers. The dependency fairly on agriculture was low in case of marginal farmers in both the districts when compared to the other two categories. That is, apart from agriculture, agricultural labour was also the main occupation for small and marginal farmers in the developed district when compared to the underdeveloped district.
- Another area of significance from the point of view of secondary occupation for medium and large farmers was small business and migration for marginal farmers and agricultural labour.

Agrarian Relation and Land Markets

Land Ownership Pattern :

- In the underdeveloped district large farmers were having slightly less of irrigated land and small farmers were having slightly more irrigated land (60:33) when compared to the large and small farmers of the developed district where the ratio was 70 : 26.
- The irrigated land possessed by marginal farmers was almost same in both the districts. While the per cent of dryland owned by both large and

small farmers was almost same with 38 per cent in the developed district, it was around 45 and 38 per cent in case of large and small farmers respectively, in the underdeveloped district.

Leasing-in and Leasing-out of Land:

- The mechanism of leasing-in and leasing-out were seen in both the developed and the underdeveloped districts. Irrigated land was preferred to dryland in the developed district. Whereas, both the lands were equally preferred for leasing-in in the underdeveloped district.
- More number of large farmers were leasing-in the land in the developed areas. Whereas, small and marginal farmers were also involved in leasing-in the underdeveloped areas. This shows that development in irrigation is more oriented towards large farms.
- While the phenomenon of leasing-in was seen even among small and marginal farmers in the underdeveloped village of the underdeveloped block of the developed district, it was totally absent among all the categories of farmers in the underdeveloped village of the developed block of the developed district, which is a forest fringe village, situated on the upper side of the Bargad dam. This shows that the situation of those villages which have lost their forest land due to dam and also which do not have access to irrigation is worse-off than the situation of those plain land villages which have no irrigation facilities.

Land Sold and Purchased:

- In the developed villages, out of the total land sold in the last five years , marginal farmers account maximum followed by small and large farmers. Whereas, in the underdeveloped district the land sold by marginal farmers accounts for only 14 per cent and the land sold by small and large farmers accounts for 86 per cent.
- The land that was sold away by the small and marginal farmers was purchased by large farmers in the developed district and the land that was sold away by the large farmers was purchased by the small and marginal farmers in the underdeveloped district. Similar trend was observed in the developed as well as the underdeveloped villages also.

Common Property Resources:

- Most of the CPRs are being utilised or cultivated by small and marginal farmers in both the underdeveloped district and the developed districts. Whereas, medium and large farmers were not accessing the government land. This shows that development in irrigation is weaning away utilising the CPRs by the farmers.

Agrarian Structure

Net Sown Area:

- The per cent share of wetland in net sown area was more than dryland in the developed district and the per cent share of dryland was more than wetland in the underdeveloped district for all the categories of farmers.

Cropping Pattern:

- Paddy is the major crop in the developed villages for all the categories of farmers. Whereas, the crops like sunflower, groundnut, mustard and vegetables are the major crops in the underdeveloped villages especially for small and marginal farmers. The crop diversification index shows that marginal and small farmers were more diversified than large farmers and the underdeveloped villages were more diversified than the developed villages. This shows the fact that less is the development in terms of irrigation, resource endowment and also landholding, more is the diversification.

Crop Production:

- The major crop in the developed district was paddy. Almost all the varieties under paddy are HYV. The government was giving subsidy for those paddy varieties which need to get popularised. Yield of this crop was very less compared to the national average yield. The other major crop in the developed villages after paddy was pulses, whereas groundnut and vegetables are the major crops in the underdeveloped villages especially for small and marginal farmers.
- In the underdeveloped district, cotton was the major crop in the developed block and maize was the major crop in the underdeveloped block. However, major production of both these crops was by small farmers followed by large farmers. The other main crops in these villages were mustard and

vegetables. The share of small and marginal farmers was more in vegetable production out of total vegetable production.

- Out of the total production of paddy, the production of the developed villages was 89.4 per cent and the production from the underdeveloped was 10.4 per cent. There was wide variation in the yield levels between the developed and the underdeveloped villages also.
- Though not much variation was observed between the yield levels of oilseeds among the villages in the developed district, variation in the yield of pulses and vegetables was observed between the developed and the underdeveloped villages of the developed district.

Gross value of Agricultural Produce

- In both the districts the PAGVP of mustard and vegetables was more than the paddy crop. The PAGVP of mustard, pulses and vegetables in the underdeveloped district was more than the developed district.
- In all the villages, the share of paddy in gross value of agricultural production is very less compared to the area under gross sown area. The decrease in share is more glaring in the underdeveloped villages.
- The value of crops like mustard and vegetables was more when compared to their share in gross sown area in both the districts.
- The per acre value of mustard and vegetables was higher when compared to other crops for all the categories of farmers.
- In the developed district, the per acre GVAP of small farmers was more than the marginal farmers. Whereas, in the underdeveloped district, the per acre GVAP of marginal farmers was more than the small farmers.

Access to Market:

- In the developed district the quantity of paddy marketed was more in the developed villages and the quantity of crops like sunflowers, groundnut, mustard and vegetables marketed was more from the underdeveloped villages. Among the different categories of farmers the marketed share of paddy, mustard and pulses was more for large farmers and groundnut, sunflower, and vegetables was more for small and semi-medium farmers.

- In the case of the underdeveloped district, among the different categories of farmers the marketed share of paddy, mustard, pulses, maize and ragi was more for large farmers and cotton and vegetables was more for small and marginal farmers.

Income from Agriculture

- In the developed district, the income from agriculture was more from the developed villages of the underdeveloped block than the developed villages of the developed block and in the developed villages it was in favour of medium and large farmers. The income from agriculture of small, semi-medium and marginal farmers was better in the underdeveloped villages when compared to the developed villages due to their crop diversification.
- In the underdeveloped district, the income from agriculture was more from the developed villages than the underdeveloped villages and it was in favour of medium and large farmers in the developed villages. Whereas, the same was in favour of small farmers in the underdeveloped villages.

Total income:

- In the developed district, apart from agriculture the other major sources of income were small business, remittances from migration , wages and livestock. Whereas, in the underdeveloped district the other major sources of income apart from agriculture were wages, livestock and remittances etc. in that order. This shows that income from wages and livestock were the second major sources in the underdeveloped district and income from migration was the second major source in the developed district.
- The secondary source of income for medium and large farmers was small business in both the districts. The same for small farmers was livestock in the developed district and wages in the underdeveloped district. It was wages for marginal farmers but the contribution from wages to marginal farmers was more in case of the developed district than the underdeveloped district.

Per Capita Income

- The per capita income of the underdeveloped district was below State average. Whereas, the per capita income of the developed district was above the State average.

- Income disparity was not much observed between the developed villages of a developed district. Whereas, it was observed between the developed villages of the underdeveloped district which signifies the Kuznets theory.

Poverty

- The incidence of poverty among all the categories in Orissa was 38 per cent. Maximum number of households below poverty line were more in the developed district when compared to the underdeveloped district.
- The incidence of poverty among small, medium and large farmers was less in developed district and more in the underdeveloped district. Whereas, the situation is reverse in case of marginal farmers.
- Another interesting observation is that the incidence of poverty for marginal farmers was less than small farmers due to their occupational diversity such as labour work and migration.

Employment

- The per centage of marginal farmers employed was more followed by small and large farmers.
- Among the small farmers' category the employment gap was more in underdeveloped district and less in the developed district.. The situation was reverse in case of marginal farmers' category.

Migration

- More number of persons migrated among the sample household farmers from the developed district when compared to the underdeveloped district. In the underdeveloped district also out-migration was observed only in the developed block. This shows that the development in irrigation ia also linked with migration and migration was normally a temporary one for specialised operations like brick making, road laying etc. Due to shortage of labour in the developed villages due to out migration, in-migration has also been encouraged at the time of seasonal agricultural operations where the labour was engaged mostly on contract basis. The remittances from migration was used mostly for the maintenance of family, repayment of debt and also purchasing the assets like land etc.

Annexures

Table 1 : Village-wise and Farmers' Category-wise Household Profile: Kalahandi

Category	Village Bondaguda	Block Junagadh	District Kalahandi	
Farmer type	Medium and large (5)	MFAL(10)	Small(10)	Total(25)
Total male population	12	16	15	43
Total male literates	8	2	3	13
Total female population	9	13	16	38
Total female literates	2	-	1	2
Total members in household	35	82	63	180
Total literate members in household	10	2	4	16 (8.8)
	Chanch-arbatti (5)	**Juna-gadh (10)**	**Kalah-andi (10)**	
Total male population	9	11	8	28
Total male literates	4	2	3	9
Total female population	11	8	17	36
Total female literates	1	-	4	5
Total members in household	33	64	59	156
Total literate members in household	5	2	7	14 (8.9)
	Dhaman-guda	**TH Rampur**	**Kalahandi**	
Total male population	7	15	11	33
Total male literates	1	-	-	1
Total female population	6	12	14	32
Total female literates	-	-	2	2
Total members in household	41	63	49	153
Total literate members in household	1	-	2	3 (1.96)
	Kumud-bahal (5)	**TH Ram-pur (10)**	**Kalah-andi (10)**	
Total male population	7	8	12	27
Total male literates	8	1	-	3
Total female population	12	11	8	31
Total female literates	-	-	-	-
Total members in household	39	43	68	150
Total literate members in household	2	1	-	3 (2)

Table 2: Village-wise and Farmers' Category-wise Household Profile – Bargad

Category	Village Khurm-unda	Block Attabera	District Bargad	
Farmer type	Medium and Large (5)	MFAL(10)	Small(10)	Total(25)
Total male population	3	23	17	53
Total male literates	6	6	11	23
Total female population	16	16	14	46
Total female literates	4	2	3	11
Total members in household	51	69	71	191
Total literate members in household	10	8	14	32 (16.7)
	Rujanmal	**Attanera**	**Bargad**	
Total male population		17	21	38
Total male literates		2	3	5
Total female population		23	17	40
Total female literates		-	-	-
Total members in household		81	89	170
Total literate members in household		2	3	5 (2.94)
	Mandosil	**Paikmal**	**Bargad**	
Total male population	18	26	17	61
Total male literates	9	5	7	21
Total female population	2	19	23	44
Total female literates	2	3	4	9
Total members in household	39	67	38	144
Total literate members in household	11	8	11	30 (20.8)
	Laudmal	**Paikmal**	**Bargad**	
Total male population	17	18	19	54
Total male literates	10	4	4	54
Total female population	14	21	16	51
Total female literates	3	1	2	6
Total members in household	37	54	67	158
Total literate members in household	13	5	6	24 (15%)

Table 3: Village-wise and Category-wise Land Ownership and Distribution – Bargad District

Sum	Village	Block	District				
	Khurmunda	Attabera	Bargad				
Farmer type	Cultivated owned wetland	Community/ /village/ government land	Cultivated leased-in dryland	Cultivated leased-in wetland	Cultivated leased-in wetland	Net-sown area	Per house-hold cultivated land
Medium and Large	26(50)	82(73.2)	—	—	8	116	23.2
Marginal farmers and agricultural labourers	19(21.1)	2(1.78)	12	—	0	25	2.5
Small and semi-medium	15(28.8)	28(25)	12	—	0	55	5.5
Total	52	112	24				
	Rujanmal	**Attabera**	**Bargad**				
Medium and large	—	—	—	—	—	—	—
Marginal farmers and agricultural labourers	22(32.8)	—	—	—	—	22	2.2
Small and semi-medium	45(67.1)	—	—	—	—	45	4.5
Total	67						
	Laudmal	**Paikmal**	**Bargad**				
Medium and large	43(47.7)	19.5(53.4)	—	—	—	62.5	12.5
Marginal farmers and agricultural labourers	19(21.1)	3(8.2)	—	8	—	30	30

(Contd....)

Table – 3: *(Contd....)*

Sum	Village	Block	District				
	Khurmunda	Attabera	Bargad				
Farmer type	Cultivated owned wetland	Community/ /village/ government land	Cultivated leased-in dryland	Cultivated leased-in wetland	Cultivated leased-in wetland	Net-sown area	Per house-hold cultivated land
Small and semi-medium	28(31.1)	14(38.3)	—	8	—	30	30
Total	90	36.5					
	Mandosil	**Paikmal**	**Bargad**				
Medium and Large	37(57.8)	52(73.2)	—	—	6	95	19
Marginal farmers and agricultural labourers	8(12.5)	3(4.2)	4	—	—	15	1.5
Small and semi-medium	19(29.6)	16(22.5)	—	—	—	35	3.5
Total	64	71					
			Total				
Medium and large	106	153.5	—	—	14	273.5	13.6
Marginal farmers and Agricultural labourers	60	8	16	8	4	92	2.3
Small and semi-medium	107	58	12	-	-	165	3.4
Total	273	219.5	28	8	18	530.5	2.6

Table 4: Village-wise and Category-wise Land Ownership and Distribution –Kalahandi District

Sum	Village	Block		District			
	Chancharbatti	Junagadh		Kalahandi			
Farmer type	Owned dryland	Owned wetland	Community/ village/ government land	Leased-in in dryland	Leased-in wet-land	Net sown area	Per house-hold holding
Medium and large	35.5(55)	29(72.5)	—	—	8	72.5	14.5
Marginal farmers and agricultural labourers	12(18.6)	2(5)	6	—	—	20	2.0
Small and semi-medium	17(26.3)	9(22.5)	4	—	—	30	3.0
Total	**64.5**	**40**					
	Bondugauda	**Junagadh**	**Kalahandi**				
Medium and large	37.5(46)	20(64.5)	—	—	—	57.5	11.5
Marginal farmers and agricultural labourers	8(9.8)	—	3	4	—	15	1.5
Small and semim-medium	36(14.1)	11(35.4)	8	7	3	65	6.5
Total	**81.5**	**31**					
	Kumudbahal	**Th Rampur**	**Kalahandi**				
Medium and large	32.5(39.3)	7.5(38.4)	12.5	—	—	52.5	10.5
Marginal farmers and agricultural labourers	15(18.18)	3(15.3)	12	—	—	30	3.0

(Contd....)

Table 4: *(Contd....)*

Sum	Village	Block		District			
	Chancharbatti	Junagadh		Kalahandi			
Farmer type	Owned dryland	Owned wetland	Community/ village/ government land	Leased-in in dryland	Leased-in wet-land	Net sown area	Per house-hold holding
Small and semi-medium	35(42.4)	9(46.1)	26	—	—	70	7.0
Total	**82.5**	**19.5**					
	Dhamanguda	**Th Rampur**	**Kalahandi**				
Medium and large	34.5(43.3)	12.5(53.1)	15.5	—	—	62.5	12.5
Marginal farmers and agricultural labourers	1.7(21.3)	2(8.5)	11	—	—	30	3.0
Small and semi-medium	28(35.2)	9(38.2)	18	—	—	55	5.5
Total	**79.5**	**23.5**					
			Kalahandi				
Medium and large	140	69	28	—	8	245	12.25
Marginal farmers and agricultural labourers	52	7	32	4	—	95	2.3
Small and semi-medium	116	38	56	7	3	220	4.4
Total	**308**	**114**	**116**	**11**	**11**	**560**	**5.6**

Table 5 : Village-wise Leasing- in Land in Kalahandi District

Village and farmer type	Leased-in dryland		Leased-in wetland		Total leased-in land		Net sown area
Chancharbatti							
Large farmers	-	-	3	8	3	8	72.5
Marginal farmers	-	-	-	-	-	-	-
Small farmers	-	-	-	-	-	-	-
Total							
Bondagauda							
Large farmers	-	-	-	-	-	-	-
Marginal farmers	4	4	-	-	4	4	15
Small farmers	3	7	3	3	6	10	65
Total							
Kumudbahal							
Large farmers	-	-	-	-	-	-	-
Marginal farmers	-	-	-	-	-	-	-
Small farmers	-	-	-	-	-	-	-
Total							
Dhamanguda							
Large farmers	-	-	-	-	-	-	-
Marginal farmers	-	-	-	-	-	-	-
Small farmers	-	-	-	-	-	-	-
Total							
Overall district	7	11	6	11	13	22	

Table 6: Village-wise Leasing-in Land in Bargad District

Village and farmer type	Leased-in dryland		Leased-in wetland		Total leased-in land		Net sown area
Khurmunda							
Large farmers	-	-	1	8	1	8	16
Marginal farmers	-	-	0	0	0	0	25
Small farmers	-	-	0	0	0	0	55
Total							
Rujanmal							
Large farmers	-	-	-	-	-	-	-
Marginal farmers	-	-	-	-	-	-	-
Small farmers	-	-	-	-	-	-	-
Total							
Laudmal							
Large farmers	-	-	-	-	-	-	-
Marginal farmers	6	8	-	-	6	8	30
Small farmers	8	16	6	7	14	23	65
Total							
Mandosil							
Large farmers	-	-	4	6	4	6	95
Marginal farmers	-	-	-	-	-	-	-
Small farmers	-	-	-	-	-	-	-
Total							
Overall district	14	24	11	21	25	45	

Table 7 : Leasing-out of Land in Kalahandi District

Village and farmer type	Leased-out dryland		Leased-out wetland		Total leased-out land		Total land owned (cultiv-ated+ leased out)
Chancharbatti							
Large farmers	-	-	-	-	-	-	
Marginal farmers	-	-	-	-	-	-	
Small farmers	-	-	6	8	6	8	
Total							
Bondagauda							
Large farmers	3	9	1	3	4	12	
Marginal farmers	-	-	-	-	-	-	
Small farmers	1	2	-	-	1	2	
Total							
Kumudbahal							
Large farmers	-	-	-	-	-	-	-
Marginal farmers	-	-	-	-	-	-	-
Small farmers	-	-	-	-	-	-	-
Total							
Damanguda							
Large farmers	-	-	-	-	-	-	-
Marginal farmers	-	-	-	-	-	-	-
Small farmers	-	-	-	-	-	-	-
Overall district	4	11	7	11	11	22	-

Table 8 : Village-wise Leasing-out Land in Bargad District

Village and farmer type	Leased-out dryland		Leased-out wetland		Total leased-out land		Total land owned (cultiv-ated+ leased out)
Khurmunda							
Large farmers	-	-	-	-	-	-	-
Marginal farmers	-	-	-	-	-	-	-
Small farmers	-	-	3	8	3	8	
Total							
Rujanmal							
Large farmers	-	-	-	-	-	-	-
Marginal farmers	-	-	-	-	-	-	-
Small farmers	-	-	-	-	-	-	-
Total							
Laudmal							
Large farmers	4	19	2	7	6	26	
Marginal farmers	-	-	-	-	-	-	-
Small farmers	3	5	-	-	3	5	
Total							
Mandosil							
Large farmers	-	-	-	-	-	-	
Marginal farmers	-	-	2	2	2	2	
Small farmers	-	-	2	4	2	4	
Overall district	7	24	5	15	12	39	-

Chapter - V

OVERVIEW AND CONCLUSIONS

Objectives of the Study

- To analyse the trends in agricultural growth, landholding structure, and poverty trends in the study states in post-reforms period at the State level.
- To assess the nature of land markets, especially, leased land market and accessibility of land and market to the different categories of farmers with special focus on marginal and small farmers.
- To analyse the structure of agriculture, production and productivity levels and marketable surplus at the grassroots level and small and marginal farmers' participation in the market economy,
- To assess and analyse the livelihood systems of different categories of farmers, employment status and poverty among the farm households and analyse the role of labour market including migration in household economy of the small and marginal farmers, and
- To identify policy variables, especially from the point of land reforms increasing opportunities for livelihood enhancement for the poor.

Hypotheses

- Whether agrarian growth leads to changes in agrarian relations in general and improves accessibility to land and market by the poor;
- Whether such changes lead to structural changes in the rural economy in terms of i) agricultural diversification and ii) market accessibility, and
- Whether SGRY as a major rural development programme has been able to alter the migration patterns and poverty levels.

Study Area

Eight villages, four each from Bihar and Orissa from the four districts (Begusarai and Katihar districts in Bihar and Bargad and Kalahandi districts in Orissa).

Sample Size: Four hundred households from eight villages, 80 large farm households, 160 small farm households and 160 marginal farm households.

Sample Profile

- Majority of the farmers in the study districts belong to the age group of 35-59 years.
- The proportion of young farmers engaged in cultivation was found to be higher in the agriculturally progressive areas of both the states. The per cent of small and marginal farmers in the productive age group of 18 to 25 and 25 to 34 was more in the underdeveloped district when compared to the developed district in case of Orissa.
- Thirty per cent of the sample farmers in Begusarai, 16 per cent in Katihar, 29 per cent in Bargad and 55 per cent in Kalahandi were totally illiterate. Thirty per cent of the farmers in Katihar are educated up to secondary level followed by 19 per cent up to middle level and 13 per cent up to graduation level. Ten per cent of the total farmers in the district are just literate. Thus, educational status of the farmers is found to be much better in Katihar compared to Begusarai where 21 per cent of the total farmers are just literate, 18 per cent are educated up to secondary level and 17 per cent up to middle level. Only eight per cent of the farmers were found to be educated beyond secondary level.
- The educational status of farmers in the developed district with the literacy rate of 71 per cent was found to be much better when compared to the underdeveloped district with a literacy rate of 45 per cent in case of Orissa. The per cent of large and medium farmers who have gone up to middle school level was more in the developed district when compared to the underdeveloped district. The overall literacy rate for the State among the sample farmers was 58 per cent.
- Sixty six per cent of the sample farmers in Bargad and 45 per cent in Kalahandi district of Orissa were totally dependent on agriculture. The pattern of dependency on agriculture was similar in Bihar. 53 per cent in Begusarai (less developed) and 57 per cent in Katihar (developed district) were solely dependent on agriculture. Thus, developed agriculture has

greater absorption capacity as far as occupation is concerned. The high dependency on agriculture among the large and medium farmers was witnessed uniformly across the study area in both the states.

Household Profile

- Total 2004 persons covered by 200 families (with an average population of nearly ten persons per household) in Bihar and 1303 persons in 200 households in Orissa (with average population of nearly seven persons per household). were covered under the study.
- Fifty six per cent of the population in Bihar and only 33 per cent in Orissa males. Not much variation is found across the districts and among the farmers' categories with regard to average population per family in Bihar but in Orissa larger family size was noticed in the developed district.
- Nearly 39 per cent of the population were below fourteen years of age and another 14 per cent are above 60 years. Thus, the dependency ratio was quite high in both the states.
- Both male and female literacy rate was higher in agriculturally progressive areas but huge inter-class gap was found in both the states. Similarly, male-female literacy gaps were also found.
- In all the districts the literacy rate of medium and large farmers was significantly higher than the small and marginal farmers.

Growth, Agrarian Relations and Rural Poverty in Post-Reforms Period

- As against overall upsurge in the growth rate in the country in the post-reforms period, it has decelerated in Bihar and Orissa. The divergence between all India average and the two states has increased during this period. The growth rate of per capita state domestic product in case of Orissa slumped to even less than half of the national average.
- The growth rate of agriculture sector in the post-reforms period slumped down to just about 0.6 per cent in Orissa compared to 2.89 per cent per annum for India as a whole. The growth rate of agriculture sector in Bihar was also marginally lower than the national average.
- The average size of holding in Bihar has followed the national trend and declined further during the post-reforms period. The average holding size in Bihar was smaller than the national average. On the other hand, the

average holding size in Orissa slightly improved during this period. Both the number and area under small and marginal holdings as per cent of the respective totals increased in the period. The reduced size of holding is indicative of reduced access to land to the small and marginal farmers.

- Compared to the national average, the rate of decline in poverty in Bihar was faster during the post-reforms period, but the proportion of population living below poverty line went up in Orissa.

Land Ownership and Access to Land

- Twenty per cent of the farmers belonging to large farmers' category owned more than 58 per cent of the total land in Bihar and 52 per cent in Orissa. Thus, though average landholding of the large farmers in the two states was nearly the same, their access to irrigated land was relatively lower at 54 and 51 per cent, respectively in the two States.
- The difference between the land owned by small farmers (32 per cent) and by the marginal farmers is much wider than the difference between large farmers and small farmers in Bihar. The difference in the land owned by the small and marginal farmers was comparatively lower in Orissa. The access to irrigated land was found to be slightly better in case of small and marginal farmers in case of Bihar but it was highly discouraging in case of Orissa.
- The large farmers had sizeable proportion of dryland which was either leased out or left as fallow. The large farmers alone account for nearly 70 per cent of the dryland in Begusarai and 69 per cent in Katihar (Bihar).
- The ratio of large farmers and small farmers who possess the wetland slightly varied with around 60:33 in the underdeveloped district of Orissa when compared to the developed district where it was 70:26 per cent of the total wetland possessed. This means that in the underdeveloped district, large farmers were having slightly less of irrigated land and small farmers were having slightly more of irrigated land when compared to the large and small farmers of the developed district.
- While the proportion of dryland possessed by both large and small farmers in Orissa was almost same with 38 per cent in the developed district, it was around 45 and 38 per cent in case of large and small farmers in the underdeveloped district. That is due to slightly less dryland owned by marginal farmers in this district when compared to the developed district.

Land Market: Leasing Out

- In case of Bihar, the total leased out land as proportion of total owned land was below ten per cent and the per cent of land leased out wetland was even lower. The lease market was found to be active in both the districts though the nature of lease market differed depending on the level of agricultural development, cropping pattern and availability of irrigation. The overall proportion of wetland leased out outweighed the leased out dryland. More than 57 per cent of the total leased out land was irrigated land.
- The phenomenon of leasing in of land in Orissa was seen in the non-tribal villages but by and large was not witnessed in the tribal villages. The situation of those villages which lost their forest land due to dam and also not having access to irrigation was worse-off compared to the plain and, non-tribal villages which had no irrigation facilities.
- Overall 70 per cent of the sample large farmers, nine per cent of the marginal farmers and six per cent of small farmers reported leasing out of land in Bihar. Forty seven per cent of the large farmers who leased out their land leased out on fixed rental basis and 30 per cent on share cropping basis. Leasing out by marginal farmers was totally on rental basis. Nearly 14 per cent of the total farmers in Orissa reported leasing out of land.
- Leasing out of land, both irrigated as well as dry, was more active in villages of the developed district of Bihar (Katihar) compared to the lesser developed district. More than 90 per cent of total leased out dryland was found in one district (Katihar) alone.
- The leased out wetland as proportion of total leased out land was found to be higher in the villages of Begusarai which had more traditional structure of agriculture and also larger area under irrigation. The proportion of leased out wetland to the total leased land was found to be lower in Katihar where due to lower availability of land but higher returns, farmers prefer to keep it for self-cultivation.
- Leasing out of dryland was found to be more prevalent in the developed areas. Under normal circumstances farmers prefer to keep the dryland as fallow (as was found in Begusarai where only 12 per cent of the total dryland was leased out).

- Large farmers were the main suppliers of land followed by marginal farmers (as proportion to total owned land). Ninety two per cent of the total leased out land was supplied by the large farmers in the study districts. This proportion was nearly the same in all the districts.
- Due to uneconomical holding size, some proportion of the marginal farmers having wetland also leased out their land. Thus, the phenomenon of "reverse tenancy" was also found in the developed district. Although their contribution to total leased out land was just five per cent, as percentage of total owned land, nearly four per cent of the land of the marginal farmers was leased out. The main takers of the land of the marginal farmers were belonging to the category of small farmers.

Leasing-in

- Eighteen per cent of the total farmers in Bihar and 27 per cent in Orissa reported leasing-in of land. Of the 36 farmers in Bihar who reported leasing-in of land four belonged to the category of large farmers. However, these four farmers (11 per cent of total leasing-in farmers) accounted for 17 per cent of the total leased in land. Small farmers accounted for 47 per cent of the leasing-in farmers and 42 per cent of the leased in land. Similarly, marginal farmers accounted for 42 per cent of the farmers and nearly same proportion of leased-in land. Thus, leasing-in was most prevalent in the group of small and marginal farmers.
- Twenty per cent of the total sample households belonging to small and marginal farmers in Bihar were dependent on leased-in land for their sustenance. The dependency on leased land on the part of marginal farmers was very acute in the agriculturally underdeveloped district as leased land constituted nearly 37 per cent of their net sown area. The incidence of tenancy was thus found to be fairly high in the study area.
- The land market was quite dependent on the irrigation facilities as more than 76 per cent of the leased-in land-in Bihar and nearly 50 per cent of leased-in land in Orissa was irrigated land and more than 72 per cent of the farmers (in Bihar) who leased in land had leased in the irrigated land.
- The leased-in land played a very crucial role in augmenting the productive resources of the small and marginal farmers. In case of small farmers the net sown area was found to be 104 per cent of the net owned area. Most importantly, in case of marginal farmers the area operated or cultivated

was 121 per cent of the owned area in Bihar. In Begusarai (Bihar), the area operated by the marginal farmers as per cent of their owned land was as high as 150 per cent. The tenancy was therefore, much higher in the lesser developed district. On the other hand, in Katihar, the area operated by the marginal farmers was just 91 per cent of the owned area. This was mainly because of leasing out of land by the marginal farmers in Katihar. This was a remarkable difference in the two categories of the districts. While in the underdeveloped district marginal farmers were subjected to acute tenancy conditions and depended on leased-in land for their survival, in the developed districts, marginal farmers leased out part of their land (mostly on rental basis).

- On an average, leased-in land constituted about eight per cent of the net cultivated area for all categories of the farmers in Begusarai, seven per cent in Katihar (both in Bihar), nine per cent in Bargad and seven per cent in Kalahandi (both in Orissa). Leased-in land contributed nearly 16 per cent of the net cultivated area for small farmers in Bargad. The dependency of small and marginal farmers in Kalahandi on leased-in land was negligible. However, large farmers also were involved in leasing in Orissa, especially in the developed villages, whereas in Bihar it was confined mainly to the small and marginal farmers.
- Contrary to the situation in Orissa, the contribution of leased-in land in the net cultivated area for marginal farmers was as high as 36 per cent in Begusarai in Bihar. The tenancy among the marginal farmers was therefore, found to be very high in case of Begusarai. In Katihar, on the other hand, the small farmers were more dependent on leased-in land than the marginal farmers.
- Irrigation was found to be a crucial factor in determining the lease market and settling the terms of leasing. Irrigated land was usually leased on rental basis whereas dryland was taken on crop sharing basis. Area-wise, irrigated land was preferred to dryland in the developed district. Whereas, both the lands were equally preferred for leasing-in in the underdeveloped district. These trends were observed in the entire study area. While, more amount of wetland was leased-in in the developed district of Orissa, it was slightly reverse in the developed district of Bihar for the reasons mentioned above. The percentage of wetland and dryland leased-in to the total land leased-in was almost the same in the

underdeveloped district of Orissa. The number of farmers who leased- in dryland were more than the number of farmers who leased-in wetland in Bargad. However, the leasing-in of irrigated land in Bargad district was mainly by the large farmers. The phenomen on of leasing was totally absent in both the developed and the underdeveloped tribal villages. While the small farmers have leased-in both wet as well as dryland, marginal farmers have preferred to lease-in dryland.

Sale and Purchase of Land

- Only 13 per cent of the farmers (26 out of 200) in Bihar and 11 per cent of the farmers in Orissa (11 out of 200) reported open sale of land during the reference period (last five years). The sale of land in Orissa was mainly confined to the developed districts. Category-wise 42 per cent of the farmers reporting sale of land belonged to the category of marginal farmers and another 38 per cent were small farmers. Similalry, 43 per cent of the farmers reporting land sale were marginal farmers in Orissa and 19 per cent were small farmers. Thus, mainly small and marginal farmers sold their land in both the states. However, while in Bihar land selling was confined to small and marginal farmers only in all the areas, in Orissa even big farmers also sold their land and their proportion was similar to that of small farmers.
- The number of farmers reporting sale of land over last five years was more in the developed district, but the trend was the same in the lesser developed district also as majority of the farmers selling land were small and marginal farmers.
- The most significant difference found in the two states was however, regarding the category of the buyers. While in Bihar, though surprisingly, much of the land was sold to marginal farmers and marginal farmers-cum migrant labour, in Orissa land was sold mostly to large farmers in the developed areas and to small and marginal farmers in the underdeveloped areas. Looking at the district-wise trends in Bihar, it was found that land was sold mainly to small farmers in Begusarai and marginal farmers in Katihar. Four out of 20 farmers became marginal farmers after selling their land. In Orissa, on the other hand, land was slod by the small and marginal farmers in the developed district and purchased by the large farmers, whereas in the underdeveloped district it was sold by the large farmers and also purchased by large farmers mainly.

- As against 26 farmers who sold land in Bihar, only nine of the sample respondents purchased land during this period. Out of these nine, five belonged to the category of small farmers and two each to the category of large farmers and marginal farmers. None of the sample respondents reported purchase of land in Begusarai.
- The main source of supply of land was again the small and marginal farmers rather than big farmers. Thus, sale of land appears to be largely a phenomenon of distress selling rather than a matter of open market price. Although large farmers also sold their land in Orissa, it was mainly because of underdeveloped agriculture and thus, was because of low productivity and distress. In other words, land sale was mainly a distress phenomenon in both the states and not a matter of open market price.

Agrarian Structure

Net Cultivated Area:

- The average holding size of the marginal farm households (1.81 acres) was found to be just 13 per cent of the large farmers (13.66 acres) in Begusarai. This was even small for the agriculturally progressive district Katihar with 12.71 acres and 1.34 acres for large and marginal farmers, respectively. The trends were similar for Orissa, but the average holding per household in Orissa was larger for both the small as well as marginal farmers and hence the inequalities were lesser. Per household average holding for marginal farmers (2.4 acres) in Bargad, agriculturally progressive district was 20 per cent of the average holdings of large farmers (11.87 acres). Similarly, per household average holding of 2.5 acres (marginal farmers) was 21 per cent of the average holding size of large farmers (11.75 acres). Average agricultural holdings of large, small and marginal farmers in Bragad (agriculturally progressive district) was found to be 11.87 acres, 5.13 acres and 2.4 acres, respectively. The same for agriculturally backward district (Kalahandi) was 11.75 acres, 5.5 acres and 2.5 acres, respectively.
- The relative average net sown area per household for the small farmers (4.38 acres) was found to be 32 per cent of the average net sown area of the large farmers in Begusarai and 40 per cent (4.71) in Katihar. Thus, the difference in average net sown area in the developed district is found to be lower as far as the large and marginal farmers are concerned. Similarly, the relative net area sown per small household (5.13 acres) in

Bargad was 43 per cent of the large farm household and 46 per cent in Kalahandi (5.5 acres).

- Only three-fourths of the land owned by the large farmers was found to be used for self-cultivation in Bihar. The owned land put to cultivation was more than 90 per cent for the other two categories of the farmers.
- The fact of non-utilisation of land for self-cultivation of land by the large farmers has policy implications and gives the scope for redistribution of land, legalising of tenancy and settling the terms of leasing by the government.
- More than one-third of the net sown area of the marginal farmers in Begusarai and nearly 14 per cent of net sown area of marginal farmers in Katihar consists of leased-in land alone giving scope for exploitation and control over labour at the hands of large farmers. These trends of tenancy or dependency on leased land was not so acute in Orissa as only eight per cent of net sown area of small farmers and four per cent of marginal farmers in Bargad consisted of leased-in land.

Irrigation:

- While on an average 82 per cent of the net cultivated area in Begusarai and 80 per cent of net cultivated area in Katihar was under irrigation, the access, however, was not equally distributed. Only 58 per cent of the net cultivated area with marginal farmers was under irrigation in Begusarai. But the proportion of net cultivated area under irrigation was quite high in Katihar at 85 per cent. However, the proportion of net cultivated area under irrigation in Katihar for large and small farmers was much lower at 74 and 80 per cent respectively, when compared to the agriculturally backward areas.
- The per cent share of wetland in the net sown area was more than dryland in the developed district and the per cent share of dryland was more than wetland in the underdeveloped district for all the categories of farmers in Orissa. Only 44 per cent of net sown area in Bargad and 40 per cent of net sown area in Kalahandi was found under irrigation.
- Just 12 per cent of the net cultivated land of marginal farmers in Bargad and nearly seven per cent in Kalahandi was irrigated land. The position of marginal farmers, thus despite having larger holding size in Orissa when compared to Bihar was very precarious in Orissa.

- Sixty one per cent of the net cultivated area of the large farmers in Bargad and 31 per cent in Katihar was under irrigation. Thus, unlike Bihar, where agriculturally underdeveloped district was having better access to irrigation, in Orissa the underdevelopment is more acute and it is largely rainfed.

Cropping Pattern :

- Cropping pattern indicated marginal differences across the two districts in Bihar. By and large, paddy was found to be the main crop in Katihar and both wheat and paddy in Begusarai. In Orissa, paddy was the main crop across all the villages in both the districts, but the proportionate area under paddy in the underdeveloped villages was much below 50 per cent. Reverse was found in Bihar where proportionate area under paddy was higher in the underdeveloped villages.
- Despite larger proportion of area under paddy, cropping pattern is more diversified in the underdeveloped villages as reflected by the crop diversification indices. The cropping pattern in the developed villages is though more commercialised is less diversified. Banana and jute were found to be main commercial crops in Katihar whereas maize, sugarcane and vegetables were the main cash crops in Begusarai. Groundnut and sunflower were found to be the main cash crops in Orissa.
- However, large variations were found in the farmers' category-wise cropping pattern across the study area. While the proportion of gross sown area under paddy was nearly the same for large and small farmers in Bihar, it was nearly ten per cent less in case of marginal farmers. Fifty one per cent of the area under paddy was concentrated in the hands of large farmers who constituted just 20 per cent of the farmers. Thus, due to small area for paddy cultivation and food insecurity, the marginal farmers prefer cash crops with lesser gestation period like vegetables and if possible plantation crops also like banana. The large farmers on the other hand, preferred food crops like paddy, wheat, mustard and as an exception (in two villages only) go for banana. However, despite lower proportions of gross sown area put to crops like banana and mustard, the absolute area is much higher compared to marginal and small farmers and hence income level of the large farmers was found to be very high.
- In case of Orissa the inter-class variations in cropping pattern were much more sharper, especially in the agriculturally progressive district (Bargad)

where the preference was for groundnut, sunflower and vegetables for both the small as well as marginal farmers. The crop diversification index showed a very positive picture for marginal farmers (who appeared to be most diversified) followed by small farmers. Very little diversification was seen in case of large farmers. The trends were quite different n the backward district of Orissa as paddy dominated the cropping pattern. But the diversification index followed the same pattern.

- Intensity of cropping when compared among the three categories of the farmers, is found to be highest among the marginal farmers in all the four districts of the two States followed by the small and large farmers. The lower cropping intensity of the large farmers also reflects sub-optimal use of land.

Productivity Levels :

- Average yields of all the important crops like paddy, wheat, mustard, pulses, potato were below the all India average in all the villages of Bihar. Same was true about the crops in Orissa as the yield levels for all the crops grown were below the national average. No appreciable inter-villages differences were found in the productivity of food crops. The general trend of low productivity cuts across all the farmers.
- Only in case of maize (in Bihar) inter-village productivity differences were witnessed and varied between 8.79 quintals per acre (Gangaraho village in Begusarai) to 15.89 quintals per acre in Dhaboli village of the same district.
- The primary reason cited by the farmers for the low productivity of paddy and wheat were lack of appropriate doses of fertilisers and pesticides. In fact, according to them the fertiliser supply in the State was dismal due to very poor infrastructure and transportation conditions and suppliers from other states are not coming to Bihar.
- The contribution of potato and vegetables (in Bihar) in the gross value of agricultural produce was significantly higher as compared to the area under these crops in the case of marginal and small farmers. But due to very low area under these crops, the share of these categories in total production and market was quite low. Thus, despite more diversified cropping structure, marginal farmers have to face stiff competition from the other two categories for market. Moreover, in the absence of any

institutional support these farmers usually have to sell their produce in the local markets; whereas large farmers manage to sell their produce at a higher price in outside markets.

- The major crop in the developed district in Orissa was paddy. Almost all the varieties under paddy are HYV. The government subsidy was available for popularising these varieties. The yield of this variety was very less compared to the national average yield. The other major crop in the developed village was pulses. Groundnut and vegetables were the major crops in underdeveloped villages especially for small and marginal farmers.
- In the underdeveloped district cotton was the major crop in progressive block and maize was the major crop in the underdeveloped block. However, small farmers followed by the large farmers were the major producers of these crops. The other main crops in these villages were mustard and vegetables. The share of small and marginal farmers was more in vegetable production out of total vegetable production.

Marketable Surplus and Access to Market

- The proportion of output of paddy sold in the market was found to be above 80 per cent of the output in seven out of the eight villages in Bihar. The proportion of the paddy output marketed was about 68 per cent in the progressive district of Orissa (Bargad) and 71 per cent in the underdeveloped district. Paddy therefore, did not have any marketing problems.
- Vegetables, banana and jute were the major cash crops in the study area of Bihar. Wheat, mustard and maize were the other crops in case of which the marketed proportion was found to be much above 50 per cent in Bihar. In case of pulses and potato, nearly 46 per cent each, of the total production was marketed. However, inter-village variations were found in the economic structure and these variations were reflected in the composition of marketed commodity.
- Groundnut, sunflower and oilseeds were grown in Orissa mainly for meeting the market needs as the marketed component of production in case of all these commodities were above 80 per cent in both the progressive districts and backward district.

- While most of the crops grown by small and marginal farmers enter the market, their share in total market is not much. More than half of the total output and marketed output in case of paddy came from the large farmers. The share of large farmers in the market was higher than their share in output for all the commodities. In case of paddy, wheat and pulses, large farmers dominate the market. Two of the three commodities have institutional procurement and the large farmers took maximum advantage. Despite high marketable surplus at the individual household, the share of marginal farmers was pathetically low at below ten per cent level for these crops.
- Maize, however, reflected slightly more balanced picture. Small and marginal farmers together accounted for two-thirds of the production and nearly 60 per cent of the market.
- The share of marginal farmers and small farmers in case of production and marketing of vegetables (in Bihar) and cotton and vegetables (in Orissa) was much more encouraging as they dominated the market.
- Overall, while the production and market for foodgrains and non-perishable commodities was dominated by the large farmers, the production and marketing of perishable commodities remained the domain of marginal and small farmers. Since the marginal farmers did not have much at stake, they may remain unaffected by any policy of minimum support price or other market development policies.
- Since marginal farmers were actively engaged in the marketing of vegetables and potato, storage facilities, transportation and organised marketing may help them in much better way rather than the price support policy.

Income and Livelihood Sources

- Significant differences were found in the source-wise distribution of household income in the three categories of the farmers in Bihar. For the large farm household, contribution of agriculture sector in total income was above 80 per cent in 17 out of the 18 study villages in the two states. The same proportion was about 90 per cent in Orissa.
- The main difference in the two states was found in the subsidiary sources of income. In case of Bihar, rentals was the second important source of

income for large farmers, but in Orissa small business was the second main source in the progressive district, whereas wage labour was important source in the backward district. In fact, the participation of large farmers in labour market in Kalahandi itself shows the poor conditions of farming in Orissa. However, all these secondary sources contributed less than five per cent of the total income of the large farmers.

- Marginal farmers' dependency on agriculture as source of income was around 50 per cent. Thus, nearly half of the income of the marginal farmers in Bihar came from non-agricultural sources. The trend in Orissa was totally reverse and more than 90 per cent of the income of the marginal farmers came from agriculture alone reflecting very little opportunities for occupational diversification in Orissa.
- Above observation was further confirmed by the contribution of wages to the household economy of the marginal farmers. In Bihar, in fact wages were found to be very important of household income as it contributed nearly 15 per cent of the income of the marginal farmers in the underdeveloped district and ten per cent of the income in the progressive district of Bihar. In Orissa, on the other hand, this was just six and four per cent, respectively. Besides wages, small business, 14 per cent in backward district and 13 per cent in progressive district was another major source of income for the marginal farmers. This contribution was less than two per cent in Orissa. Thus, the household economy of marginal farmers in Bihar was much more diversified with more than one source of income.
- Livestock is an important source of income, especially in the underdeveloped areas for the small farmers, other than agriculture in Bihar but practically played no role in the household economy of Orissa. Livestock contributed more than 7.5 per cent in the total household income in Begusarai and almost 2.5 per cent in Katihar. However, the total income generated in the livestock sector was unevenly distributed among the three categories of the farmers.
- In Orissa, however, small farmers had participation in the labour market, especially in the underdeveloped district as nearly 12 per cent of the household income originated from the wage works in Kalahandi. The trend of lesser dependency on the wage work was found in the progressive

districts, though the reasons in the two States were different. While in Bihar this was mainly due to larger dependency on livestock and small business, in Orissa this was mainly because of lack of opportunity.

- The most significant dimension of income distribution across the different categories of the farmers was found to be the rentals (in Bihar). In fact, in both the districts the share of large farmers and marginal farmers in total rental income was nearly the same which means the leasing out of land is equally practised by the large and marginal farmers (however, as proportion of total land owned it is much higher among the marginal farmers). The phenomenon of "reverse tenancy" was found in both the districts. Income from rent as proportion to total income was higher in case of marginal farmers though in absolute sense it was much lower compared to large farmers. Rentals were highest in Katihar due to higher value of land and higher level of income.
- Another significant difference in the sources of household income for different categories of the farmers in Bihar was income from the implements. Marginal farmers, though owning much less land, had ownership over primary agricultural implements like bullocks (mostly financed under the rural development programme), bullock carts and even ploughs and earn by renting them out in Begusarai. In fact, the renting out was not independent of their labour. Thus, most of the marginal farmers who also worked as agricultural labourers used their own implements.
- Overall, while agriculture is the major source of income for large farmers in both the developed and lesser developed districts, same could not be said about the small farmers and marginal farmers. The dependency of small farmers on agriculture as the main source of livelihood increases as agricultural development takes place. But the marginal farmers sustain by diversifying their livelihood sources.
- In the developed district of Orissa, apart from agriculture the other major sources of income were small business (large farmers), remittances from migration (small and marginal farmers) and wages (marginal farmers). In the underdeveloped district, on the other hand, other major sources of income apart from agriculture were wages (small and marginal farmers), livestock (small farmers) and remittances (small farmers), etc. This shows that income from wages and livestock are the second major sources in

the underdeveloped district and income from migration is the second major source in the developed district as far as small and marginal farmers are concerned.

Income Disparities

- The highest per capita income for the large farmers in Gangaraho (Rs.9481) was just 51 per cent of the highest per income recorded for the large farm households in Digiri village of Katihar district of Bihar.
- The share of the large farmers in both the districts, as expected, is highest in total agriculture income, 46 per cent in Begusarai and 44 per cent in Katihar. The proportionately lower share of the large farmers in Katihar is mainly because of higher share of small farmers (39 per cent compared to 34 per cent in Begusarai). Marginal farmers account for only 17 per cent of the total agricultural income in Katihar compared to nearly 20 per cent in Begusarai. The inequality between marginal farmers and small farmers is lower in underdeveloped conditions than in developed conditions.
- Significant intra-class income differences were found in Orissa with regard to large farmers. The average per capita income of large farmers in Bargad was more than double of that of large farmers in Kalahandi.

Poverty

a) On an average, 76 per cent of the marginal farmers in Bihar were below poverty line. No significant inter-village and inter –district difference was found in the poverty incidence as far as marginal farmers were concerned. In two out of eight villages (Dhaboli in Begusarai and Tinpania in Katihar) all the households in the category of marginal farmers were below poverty line. Poverty amomg the marginal farmers and landless labourers was found to be less acute in Oirssa as only 41 per cent of the marginal farmers were found to be below poverty line.

b) The proportion of the small farm households below poverty line was also fairly high- 65 per cent in Begusarai and nearly 53 per cent in Katihar. Thus, poverty was less pronounced among this category in the more developed district. In fact, in the most developed village (Digiri) no farmer in this category was below poverty line. On the contrary, poverty was more pronounced among the small farmers in Orissa when compared with the marginal farmers in the same State. Nearly 48 per cent of the

small farmers were found to be below poverty line. Significantly, nearly 13 per cent of the large farm households were also found to be below poverty line in Orissa. Thus, though overall poverty was found to be less pronounced in Orissa, it was more evenly spread.

c) The spread of poverty among different categories of the farmers clearly indicates that agriculture development has mainly affected the large farm households and the status of small and marginal farmers remain to be vulnerable in both the districts with the exception of the Digiri village in Katihar (where no small farmers was found to be below poverty line) and Suja where only two households in this category were below poverty line. If we leave out these two villages, the poverty ratio among the small farmers in the rest of the six villages would be around 80 per cent reflecting that small farmers were equally, if not more, vulnerable and poverty stricken as the marginal farmers. The situation of the marginal farmers in fact is marginally better in certain cases due to occupational diversity.

Employment Status

a) The absorption of manpower in self-cultivation agriculture was maximum for large households followed by the small farm households in Bihar. For the marginal households though the proportion of workers engaged in self-cultivation was below 50 per cent, when we take into account the employment in others' fields also, their dependency on agriculture was also above 75 per cent. Similar trends were witnessed in case of Orissa also with the difference that the absorption of manpower from the large farm household in self-agriculture was much lower (less than 40 per cent). This may be mainly because of general agricultural backwardness in the State with very little capacity to employ manpower in this sector.

b) One very significant fact noticed was that under more developed agriculture conditions (Katihar), the dependency on the hired labour force increased as was reflected by the fact that 28 per cent of the marginal farmers in Katihar were working on others' field. Moreover, the proportion of labour force employed in agriculture for the large farm households was lower in the comparatively more developed villages. The proportion of workforce employed in others' field was high in the backward district in Orissa for the small and marginal farmers when compared to the agriculturally progressive district.

c) From the marginal farmers' point of view, agriculture had limited capacity to absorb them as only 47 per cent of the marginal farmers were involved in self-cultivation. This proportion was even lower for the developed district and much lower for the districts in Orissa.

Employment Gap

a) The male employment gap for the small and marginal farm households was calculated at the household level. Against a potential 684 mandays available per household, only 469 mandays were utilised leaving a gap of 250 mandays. The employment gap by and large, was found to be nearly the same across the districts. The employment gap in case of females (442 female mandays per household) was found to be much higher.

b) The overall picture reflected that on an average every household had nearly five workers of whom only two were employed. The overall employment gap at the household level was found to be more than the actual employment generated.

c) The employment gap in case of Orissa was found to be quite lower when compared with Bihar. As against a gap of 250 mandays in case of Bihar, it was just 93 in Orissa. However, while the employment gap was found to be nearly same in the entire study area of Bihar, it was found significantly higher in case of the developed district in Orissa when compared to the underdeveloped district.

Awareness about Rural Development Programmes

i) Farmers' awareness about three most important programmes was assessed during the survey. While more than 50 per cent of the households were aware of Sampoorna Gram Rojgar Yojana (SGRY), only 37 per cent of the households were aware about Swarnajayanti Gram Swarojgar Yojana (SGSY) and 42 per cent were aware about Indira Awaas Yojana (IAY).

ii) Farmers' category-wise differences were found about different schemes. The awareness level about the SGSY was found to be higher among the small farm households compared to large farm households and marginal farm households. On the other hand, awareness about SGRY was highest among the marginal farmers. The awareness about SGRY among the marginal farmers was higher in the developed district.

Impact of SGRY

i) Since SGRY is the main wage employment programme, its impact on household economy of the small and marginal farmers in terms of income and employment was assessed.

ii) On an average, 36 mandays per beneficiary worker from marginal farm household and 24 mandays per beneficiary worker in the small farm households were generated under the SGRY programme.

iii) Contribution of SGRY to the total household income in case of marginal farm households was just 2.83 per cent. Similarly, only 14 per cent of the employment gap was covered by the SGRY programme. Thus, the coverage of SGRY was very poor in the study area.

Migration

- Twenty six per cent of the sample households in Bihar reported migration of one or more family members from the village. The per centage of households reporting migration was similar among the categories of the farmers, though the rate of migration was slightly higher for the large farm households. On an average, per household nearly two members migrated from the households reporting migration. That no significant difference was found in terms of number of migrants from the two districts and among different categories of the farmers indicates that agricultural development was no guarantee for preventing migration. In Orissa also more number of persons migrated among the sample household farmers from the developed district when compared to the underdeveloped district. In the underdeveloped district also out-migration was observed only in the developed block. Migration in Orissa was normally a temporary one for specialised operations like brick making, road laying etc. Due to shortage of labour in the developed villages due to out-migration, there was in-migration at the time of seasonal agricultural operations where the labour was engaged mostly on contract basis.

- The most important reason for migration reported from the developed villages (Katihar districts) was 'tension in the village' as nearly 50 per cent of the migrants left village because of this factor. On the contrary, 69 per cent of the migrants from the lesser developed district left village in search of better job avenues and higher wages outside.

- The duration of migration reflected a slightly different pattern depending on the general level of development. Majority of the migrations in both the districts was of longer duration, more than three months. Sixty per cent in Begusarai and 49 per cent in Katihar were found to be for more than three months duration. The proportion of migrating for one agricultural season was higher in the more developed area.
- The largest out-migration was to Delhi, followed by Kolkata, Mumbai and Pune. Only six per cent of the migration was to Haryana.
- The small farmers in backward agricultural conditions depended more on migration as source of livelihood than the small farmers in the developed villages. The dependency of marginal farmers on migration was found to be much higher regardless of the level of development.
- Improvement in the house/ building of new house and improvement of land/purchase of new land were the two most important uses of migrants' income. Nearly 50 per cent of the households reporting migration spend the remittances on these two items.
- Next in the importance is the maintenance of family as 27 per cent of the households spent their remittances on this item.
- In Orissa, the most important item of expenditure was the maintenance of family followed by repayment of debt and also purchasing the assets like land etc.

Policy Implications

- As more than 30 per cent of the small and marginal farmers are dependent on leased-in land to augment their land resources, recognising and recording tenancy is needed not only to regulate tenancy but also to fix the terms of the tenancy.
- The second important finding of the study is sub-optimal use of land resources by the large farmers in Bihar. Less than 80 per cent of the land is put to self-cultivation by the large farmers. Considering the fact that while large farmers are not able to utilise their land and more than 30 per cent of the net sown area of the marginal farmers does not belong to them gives ample scope for reorganising the land relations (in Bihar), and if needed even redistribution of land.

- Agriculture in Orissa is largely rainfed. However, groundwater situation in most of the villages was reported to be fairly optimistic but was not being used due to electricity problem. As diesel operated pumps are uneconomical, subsidies on inputs may be considered.
- Extension services were not seen anywhere in all the villages. Considering the small holding size of marginal farmers in both the States, especially in Orissa, it would be better to organise the farmers on Self-Help Group pattern and service delivery mechanism must be oriented on group basis rather than individually. The unused land of the large farmers may be made available to these groups on rental basis.
- Looking into the participation rate of small and marginal farmers in the market, institutional arrangements may be oriented towards them. For example, in Kalahandi district the paddy sale to the mill owners is through the Panchayati Raj Institutions. The farmers sell their paddy through the Panchayats and payment schedules are fixed according to the quantity sold. This arrangement may be generalised to reduce the transportation costs and distress selling for small and marginal farmers.
- Poverty is rampant in most of the villages among the category of marginal farmers and to a large extent among the small farmers also regardless of the development level of agriculture. Agriculture development has practically left these categories untouched except for few exceptional cases. The concept of agricultural development is therefore, conditioned by the development of medium and large farmers. Therefore, there is a need to orient the agricultural policies towards the small and marginal farmers in consonance with the rural development programmes.
- The awareness level for the rural development programmes, especially for SGSY has confined mainly to the level of small farmers. However, even among this category of the farmers, the benefits do not seem to be commensurate with the expenditure. Since livestock is an important source of income to small farmers and in some instances for marginal farmers also, SGSY can play a big role in organising small and marginal farmers initially for dairy but may be extended in scope to cover the marketing of agricultural produce also in view of the fact that these farmers have the main role in production and marketing of vegetables and other cash crops.

- Wage employment programmes (SGRY) have been instrumental in economic upliftment in a limited way and the benefits are confined to very limited number of farmers. While it has made an impact on the income level of the beneficiary household, due to very poor coverage, no perceptible impact was felt by the families below poverty line. Hence, the scale of operations need to be enhanced to cover more and more marginal farm households. This may be used in big way to create village level infrastructure.
- The public investment in infrastructure like storage facilities, transportation and irrigation can be highly rewarding. For example, in case of one village in Katihar, it was reported that due to transportation bottlenecks the huge loss of banana crop occurred. Poor road conditions also result in untimely supplies of fertilisers and other important agricultural inputs.
- It was noticed in case of Orissa in general and some of the villages in Begusarai that access to irrigation usually alters the cropping pattern in favour of paddy alone. In view of this tendency it would be more appropriate to extend irrigation facilities on conditional basis so that water leads to diversification and not to mono-cropping system. The watershed projects can play a very crucial role in Orissa. In Bihar, perhaps the watershed projects may be used to reorganise the land and farmers.
- As good number of commercial and cash crops like banana, jute and vegetables in Bihar and sunflower, cotton, groundnut and maize in Orissa are being grown by the small and marginal farmers, access to storage and credit will help the farmers in getting better prices for their produce. It was found that vegetable and other cash crops grown by the large and medium farmers were usually sold outside the village and sometimes exported but the same crops grown by the small and marginal farmers had to be sold in the local market due to poor storing and waiting capacity as well as poor infrastructure.
- As a government support mechanism, production of some of the crops already grown by the small and marginal farmers but faced with stiff market competition from the large farmers may either exclusively be reserved for the small and marginal farmers or differential subsidy system may be introduced.

- Migration is a very important coping strategy adopted by the poor farmers to augment household income and also helpful in acquiring assets. The village Panchayat must maintain a record of the out-migration and in-migration so that a roster of potential manpower is available in case investment infrastructure building is undertaken.