

# **Agrarian Transformation : A Study of Two Districts of Bihar**

**Dissertation submitted to the Jawaharlal Nehru University  
in partial fulfilment of the requirements  
for the award of the Degree of  
MASTER OF PHILOSOPHY**

**DINESH KUMAR SINGH**

**CENTRE FOR POLITICAL STUDIES  
SCHOOL OF SOCIAL SCIENCES  
JAWAHARLAL NEHRU UNIVERSITY  
NEW DELHI-110067  
1990**



जवाहरलाल नेहरु विश्वविद्यालय  
JAWAHARLAL NEHRU UNIVERSITY  
NEW DELHI - 110067

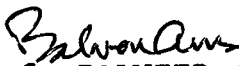
CENTRE FOR POLITICAL STUDIES  
SCHOOL OF SOCIAL SCIENCES


New Delhi,

DECLARATION

Certified that this dissertation titled "Agrarian Transformation: A study of Two Districts of Bihar", submitted by Dinesh Kumar Singh is in partial fulfilment of the requirement for the award of the degree of Master of Philosophy of this university. This dissertation has not been submitted for any other degree of this university or anywhere else and is his own work.

We recommend that this dissertation be placed before the examiners for evaluation.

  
Prof. BALVEER ARORA  
(Chairman)

  
Dr. SUDHA PAI  
(Supervisor)

Chairperson  
Centre for Political Studies  
School of Social Sciences  
Jawaharlal Nehru University  
New Delhi-110067

Dedicated To

Baba and Babuji

C O N T E N T S

	PAGES
ACKNOWLEDGEMENT	
CHAPTER I	1- 18
AGRARIAN TRANSFORMATION :	
THEORETICAL PERSPECTIVE	
CHAPTER II	19-46
AGRARIAN STRUCTURE OF BIHAR :	
A HISTORICAL BACKGROUND	
CHAPTER III	47-74
AGRARIAN CHANGE IN BIHAR :	
THE GREEN REVOLUTION	
CHAPTER IV	75-115
AGRARIAN TRANSFORMATION IN	
TWO DISTRICTS OF BIHAR	
A SUMMING UP	116-120
ANNEXTURE	121-134
BIBLIOGRAPHY	135-146

## ACKNOWLEDGEMENT

In the prosecution of this work I have received help and guidance from a large number of people and friends. Without their cooperation I would not have been able to complete and bring out the work the way it is.

I acknowledge my deepest sense of gratitude to my teacher and supervisor Dr. Sudha Pai without whose guidance and encouragement this could not have been completed. She inspired me to work and guided me with utmost patience and kindness at every step in the process of its completion. She very labouriously went through the draft and helped me to weed out the faults of language, logic and construction.

I am indebted to my friend Virendra Kumar Singh for his whole-hearted cooperation. He read the manuscript and provided valuable suggestions and comments. He helped me in reorienting my ideas and approach. I also thank my Senior Phulchand Singh for varied kind of help in the completion of this work.

P.D.Singh, Ravi Ranjan, Bindhyachal Ojha, Indu Shekar, Jainendra, Sanjay Srinet, Kaushal Kishore and other friends have been a constant source of inspiration and encouragement. I owe in many ways to them.

I owe a great deal to Jawaharlal Nehru University Library, New Delhi, Directorate of Statistics and Economics,

ICAR, Fertiliser Association of India, Central Secretariat  
Library, Central Statistical Organization, Ratan Tata Library,  
Indian Institute of Public Administration, Planning Commission  
and A.N.Sinha Institute of Social Studies, Patna and their  
staffs for cooperation in collecting materials.

21 July, 1990  
NEW DELHI

*D.K. Singh*  
DINESH KUMAR SINGH

CHAPTER-I

Agrarian Transformation: Theoretical  
Perspective

Indian agriculture under the yoke of British imperialism had hardly any incentive to prosper. It needs little repetition that high land revenue coupled with the reactionary and retrogressive interest of the "so-called" intermediaries in land had resulted not only in the 'stagnation of agriculture' but also in the creation of a social class that thrived on it without being necessarily compelled to show any genuine interest in its improvement. During the British Imperial Regime, no pervasive and conducive measures were taken to boost agriculture.

The Indian agrarian economy on the eve of independence was in a bad shape. It could be characterized as primitive, deteriorative and turbulent. Even after independence, the problem was deplorable and grave. A country which was for over a century an exporter of agricultural products, had now no alternative but to resort to heavy imports of foodstuff especially, vegetable oils. The financial strain on import of foodgrains had a menacing effect on the national economy. Table 1 show the gravity of the situation.

Table 1

Import of Foodgrains in India during 1947 - 48 to 1951 - 52

Year	Quantity (Lakh tonnes)	Value (Rs. in Lakhs)
1947-48	23.0	93.7
1948-49	28.0	129.5
1949-50	27.0	148.0
1950-51	21.0	80.0
1951-52	47.0	216.0



Source: R.K.Lekhi, Agricultural Development in India, classical Publishing Company, New Delhi, 1986, P.6

India is predominantly a peasant economy where even at present , about 69 percent of her working population is engaged in agriculture. Being the largest economic activity, agriculture serves as the index of country's economic health. All the other sources of economy are so dependent on the performance of the agricultural sector that they cannot afford to escape the impact of fluctuating fortunes in this sector. The agricultural sector ranks first in providing work and jobs to the people. This sector contributed about 41 percent to domestic product in 1981-82 whereas the manufacturing sector contributed only 22 percent. Despite these factors, India has some of the lowest field rates in the world for many important crops like wheat, rice, maize, sugarcane, cotton and groundnut. Recent statistics from Indian agriculture in Brief' conform this point!

This has been considered to be a basic sector characterized, as it is, by severe unemployment and poverty. Besides, resource survey have clearly brought that the levels of agricultural development in India is highly disproportionable to the potentials. It may be due to under-utilization or mis-utilization of the resources that agriculture has failed to be an engine of growth. The other features of Indian agriculture are low productivity and backwardness which are explained with the help of the small size of holdings, technical constraints, institutional drawback, poor extension services, etc. Small and marginal farmers are, therefore, the predominant feature of Indian agriculture.

The average size of a holding is so small (0.42 hectares) that it can rightly be called uneconomic.<sup>2</sup> Farmers of such holdings are still operating with traditional technology.

The irrational economic activity is reflected in agricultural sector through the behaviour of Share-croppers. There is marked tendency among landless rural people to go for leasing in land for changing their status. In fact, such farmers are disguised agricultural labourers, who keep a bullock even it is uneconomical.<sup>3</sup>

In addition to this, another staggering feature of the Indian agriculture is its uneven growth over the region/state. Some regions have shown significantly high rate of growth during 60's and early 70's while others are lagging behind.

It was in this situation that the Indian planners had to develop its agriculture. Here it is imperative to mention the debate that is going on among intellectuals for the quotation 'what is the optimal path of development?'. This question has been bothering the political economists for the last few decades. Theoriticians in this area have worked-out trajectories leading to fulfillment of socio-economic objectives of the given economy. A school of economist has asserted that the highest rate of growth of an economy can be ensured only if optimally proportionality are realized.<sup>4</sup> Without entangling in mathematical formalisation, Nurkse<sup>5</sup> and Roden<sup>6</sup> have advocated for balanced development approach. According to them heavy investment needs to be made in all sectors of the economy.

Another group of scholars have, on other hand, discovered the imbalanced approach to the development.<sup>7</sup>

They have argued that these are the basic imbalances that generate the dynamism in the system. They have suggested that only when disproportionality is brought about in the system through massive investment in isolated pockets of an economy, the economy gets impetus for rapid development. The leading sector theory apparently emerges from this approach.

The balanced or unbalanced approach to development has relevance when the discussion is confined to the development of one individual sector. It is only a sector that comprises of a number of economic activities. Following the optimum-proportionality approach one would argue that there should be balance not only among different sectors but among different dimensions of each sector themselves.

It was under this situation that agricultural sector was to develop. It was not without reason that 'agrarian reform' was accorded a very high priority on national agenda during national struggle and thereafter. In an agricultural situation where there exists not only poverty but also institutionalized socio-legal inequality in the form of caste, land reform was naturally expected to involve the principle not only of economic development but of social change as well. Of various reasons attributable to the failure of land reform to come-up to expectations its total reliance on bureaucratic machinery to the exclusion of the people for

implementation seems to be a fundamental one. However, as a programme of economic development, it was not a total failure.

With the population increasing at the rate of 2.5 percent per annum, the prospects of achieving self-sufficiency in food in the 60's were extremely dim. A Ford Foundation sponsored team of American experts was invited to review the situation, and to suggest steps 'to meet India's food crisis'. On the basis of its recommendations several remedial steps were taken. One of the highlights of the new strategy was the Intensive Agricultural District Programme (IADP) popularly known as the "package programme"<sup>8</sup>

Unlike community Development Programme, the IADP favoured concentrated efforts in only one district, each state selected on the basis of its high level of development as well as generous natural endowment. All the necessary inputs for rapid modernization of agriculture were to be provided to these districts on priority basis. It was hoped that by applying scarce resources to area that could benefit the most, rapid increase in food production might be achieved. Also it was expected that the example of these districts would stimulate the less fortunate areas towards accelerated growth.

The new agricultural strategy attempted to make a new technological breakthrough in India through the introduction of HYVS of improved seeds, increased application of the recommended dose of fertilisers, extension of the use of

pesticides and assured irrigation facility. This has brought about spectacular changes in the agricultural production of our country. The large increase in production of food-grains recorded after 1966-67 has been described as the "Green Revolution".

The Green Revolution was probably frivolously coined by a Journalist trying to have his story pointed on the front page: Not knowing who exactly was its author, we tend to attribute the term to a Journalist or a politician because of its nature as a catchy slogan. The term has such an appeal that even those who decry its appropriateness also use it for want of a better alternative. Whatever the origin of the term Green Revolution and regardless of who might have coined it, the fact remains that the term has gained remarkable respectability and currency in a very short span of time.

There has been proliferation of literature on the Green Revolution in India. A survey of this literature shows that most authors have been more concerned with its observed or imagined consequences rather than the Green Revolution itself. Scholars have studied the impact of Green Revolution on labour and wages,<sup>9</sup> on mechanization,<sup>10</sup> on differential income distribution<sup>11</sup> in rural areas, on class conflicts,<sup>12</sup> and tensions, and on the aesthetic appearance<sup>13</sup> of a village.

A popular view associates the Green Revolution with the adoption of HYV wheat by the Indian farmer. A great deal of credit is naturally given to Norman Borlaug for developing several varieties of dwarf wheat. The most dominant

view concerning the Green Revolution is that it is a euphemistic label for the particular agricultural strategy embodied in the IADP. Hiremath expands its definitional list of necessary inputs and adds (a) supportive prices for farm produce, (b) availability of credit facilities, and (c) better extension for farmers.<sup>14</sup> Parthasarthy<sup>15</sup> argues that the use of the term 'Green' rather than 'agrarian' conveys technocratic approach to change. This term ignores the social efforts of the past two decades and focuses on the HYV seed.

The HYV program brought about a major change - affecting almost every aspect of Indian Agriculture. In the words of Dantwala, "wide-spread adoption of HYV has helped to step up cereal production, stimulated investment and substantially increased use of modern inputs".<sup>16</sup> The Pearson Commission Report hailed it as 'one of the authentic marvels of our time'.<sup>17</sup> Its most important effect was to be seen in the attainment of self-sufficiency in cereals<sup>18</sup> which enabled us to have a break from the ship-to-mouth situation and to move forward ahead of population.<sup>19</sup>

Accentuation of inequality in rural area, widening gulf between the rich and the poor, concentration of the means of agricultural production in a few hands, the phenomenal increase in the number of agricultural labourers, increase in agricultural wage but not in comparison with living conditions, the improvements in agricultural production and joining of small farmers into ranks of agricultural labourers are the result of Green Revolution and this fact has been confirmed by several studies, as it would be seen from our analysis.

Regarding the distribution of the gain of the Green Revolution, J. Byres says that three opinions have been in force. Firstly, one section maintains that, in spite of some problems, it has successfully benefitted all sections of society. Secondly, some scholars argue that Green Revolution has been successful, while other scholars argue that it has benefitted rich section leading to deprivation of poor section.<sup>20</sup>

Evaluating its impact on income distribution among cultivating households in Punjab, G.S. Bhalla and G.K. Chadha<sup>21</sup> point out that the gains have been distributed in proportion to land holding position. An inevitable consequence of the Green Revolution is that it has accentuated inequality in rural Punjab.<sup>22</sup> P.K. Bardhan,<sup>23</sup> Byres,<sup>24</sup> K.S. Upadhyay and G. Parthasarthy<sup>25</sup> have reached similar conclusions.

The Green Revolution has increased the number of agricultural labourers.<sup>26</sup> Vimal Shah and C.H. Shah point out that small farmers have joined the rank of landless agricultural labourers.<sup>27</sup> Wages have increased where there has been peasant movement as in Kerala and Punjab where there is scarcity of labour but there has been stagnation on all India level.<sup>28</sup> The new technology has also radically changed ownership position of land among the various classes. In relation to economic resources other than land, a highly unequal situation exists among the peasantry.<sup>29</sup>

Analysing the social impact of the new technology

A. Beteille<sup>30</sup> says that it has given birth to a new class which he calls the ambidexterous class. There has been change, according to him, from the cumulative to dispersed inequality. One scholar has described it as a policy of 'betting on the strong'.<sup>31</sup> The credit market is very disadvantageous to poor people in the area where new technology was introduced. The source of conflict inherent in the Green Revolution has also been exposed by social scientists.<sup>32</sup>

Against this general background of agricultural sector, we shall try to map out the trends of agrarian transformation. We wish to emphasize at the outset itself that in this present study, agrarian transformation would be analysed, to the extent possible, both as an aspect of economic development and social change. An attempt will be made to highlight their interlinkage in the process of agrarian transformation. In the present study agrarian transformation will be measured in four dimensions, viz, productivity, technological, institutional and social change.

Measuring the levels of transformation of the various regions in the context of developmental planning is becoming increasingly important. Attempts to quantify the complex phenomenon of agrarian transformation in terms of single indicator are inadequate and unsatisfactory. This makes the problem of choice of indicators to operationalize the concept of transformation an important one. The proper choice of



indicators constituted the crux of the methodology, for it is through this that pertinent questions that need to be asked of the data are identified.<sup>33</sup> The indicators to be chosen have to be kept in consonance with the analytical framework developed and the aims of the study. Only then blind tools of statistics will give meaningful results. It is only through proper choice of indicators that one can approximate reality. A large number of empirical studies have been carried out during the past years involving constructions and application of socio-economic indicators.<sup>34</sup>

It is also necessary to make a distinction between variables and indicators<sup>35</sup> for further understanding. The statistical handbooks provide the data relating to variables which generally do not indicate the phenomena in which we are interested. On the other hand indicators are constructed with the help of the data. Indicators, therefore, are capable of exhibiting relative positions of the countries/regions/states/districts. On the other hand, variables may give only absolute figures and thus fail in analysing the comparative progress.<sup>35</sup>

Productivity is considered the most important indicator as it has often been taken as a sole measure of total agrarian transformation in a region. For measuring productivity in this study indicators such as increase in the area sown, yield per acre, cropping intensity etc have been selected. Technological change has been examined taking into

consideration, increase in the irrigated area, use of new agricultural implements, adoption of HYV seeds, chemical fertilisers etc. Regarding social change, class-based changes occurring within the agrarian hierarchy such as rise of a capitalist class, changes in tenancy, and proletarianization of agricultural labourers have been studied.

The area of the study is agrarian transformation in two districts of Bihar. We have selected Bhojpur<sup>36</sup> and Purnia<sup>37</sup> district to analyse the transformation in the agricultural sector from the 1960's to 1981. Before going into rationale behind selecting these two districts, it is imperative to know the reasons that led planners to introduce IADP in Shahabad district. It was agreed that in each of these states, the state government would select a district that would fulfill the following conditions:<sup>38</sup>

- (a) The district should, as far as possible, have assured water supply,
- (b) It should have a minimum of natural hazards, i.e there should not be problems requiring long-term attention, such as, susceptibility to floods, drainage problems, acute soil conservation problems, etc,
- (c) It should, as far as possible, have well developed village institutions like cooperatives and panchayats, and
- (d) It should have maximum potentialities for increasing

agricultural production within a comparatively short time.

On the basis of above mentioned conditions, seven districts (from seven states) were selected for the implementation of IADP. Shahabad district was one of them. Shahabad district (Bihar) was a predominantly rice-growing district. Here the package programme is confined to 20 out of 41 blocks. In pre-package period, the district was growing, on an average, about 9.0 quintals per acre rice, wheat is an increasingly important rabi crop holding out excellent possibilities of increased production. That is why we have taken into account the average yield (per acre) of rice and wheat only.

The following reasons have led to the selection of the two districts, namely Bhojpur and Purnia: the former can be considered a developed district in terms of parameters of development while the second backward. Bhojpur district is regarded as Haryana of Bihar. The HYV program<sup>me</sup> was introduced in Bhojpur and not in Purnia. Besides, there are differences of soil-type, rainfall, pattern of land holdings and of agricultural practices.

In a sense, these two districts can be taken as representatives of central and North Bihar respectively. This study based, as it is, on comparative analysis of agrarian economy of two districts, will bring out elements of both similarities and dissimilarities between the two.

Furthermore, such a study will make it more convenient to locate the causative factors involved in the process of agrarian transformation.

#### Notes and References

1. Indian Agriculture in Brief, Directorate of Economics and statistics, Ministry of Agriculture, New Delhi 1986.
2. Government of India, All India Report on Agricultural Census, 1970-71, P. 26.
3. M.N.Srinivas, The Remembered villages, Oxford University Press, 1979, P.113.  
K.Bharadwaj, Production conditions in Indian Agriculture, Cambridge Univ. Press, 1974, PP. 32-34.  
A.M.Khusro, "Farm size and Land Tenure in India", Indian Economic Review, Vol 14, 1979.
4. P.M.Mathur, "Output and Investment for potential Growth in consumption- an alternative formulation of their technological upper limits". Review of Economic Studies, Jan, 1976.
5. Nurkse, Problem of capital Formation in Underdeveloped countries, Oxford, Blackwell, 1953.
5. Roden, P.N.Rosenstein, Notes on the Theory of the Big Push MIT, CIS, March, 1957.
7. Hirschman, A.O, The strategy of Economic Development, Yale

University Press, 1958.

8. Integrated Agricultural District Programme, Ministry of Food and Agriculture, Government of India, New Delhi, 1963.
9. Wills, Ian R, "Green Revolutions and Employment and incomes in Western Uttar Pradesh," EPW, Review of Agriculture, Vol 6:A, 1971.  
P.K.Bardhan, "Green Revolution and Agriculture Labour", EPW, Vol 5, 1970.  
T.K.Oommen, "Green Revolution and Agrarian conflict" EPW, Review of Agriculture, Vol 6, 1971.  
B.F.Johnston, and John Cownie, "The seed Fertiliser Revolution and Labour Force Absorptions," American Economic Review, Vol 59. (4), 1969.
- 10.M.H.Billings, and A, Singh, "Labour and Green Revolution: An Experience in Punjab", EPW, Review of Agriculture, Vol. 4:A, 1969.  
G.C.Mandal, "Observations on Agricultural technology in a Developing Economy", EPW, Review of Agriculture, Vol. 7:A, 1972.
- 11.P.K.Bardhan, and T.N.Srinivas, "Income Distribution : Patterns, Trends and Policies", EPW Vol.6, 1971.  
U.K.Srivastava, Robert W.Crown, and Mendy Earlo, "Green Revolution and Farm Income Distribution," EPW, Review of Agriculture, Vol.6:A, 1971.

12. Wolf. Lad<sup>e</sup>jinsky, "The Green Revolution in Punjab: A Field Trip", EPW, Vol.4:A, 1969.  
 -"Green Revolution in Bihar: The Kosi Area, A Field Trip", EPW, Vol.4:A, 1969.  
 -"Ironies of India's Green Revolution", Foreign Affairs, Vol.48(4), 1970.  
 F.R.Frankel, "Agricultural Modernization and Social change" Mainstream, Vol.8, 1969.  
 -India's Green Revolution: Economic Gains and Political Costs, New Delhi, OUP, 1971.  
 P.K.Bardhan, "Green Revolution and Agricultural labour", EPW, Vol.5, 1970.
13. Ashok Thapar, "Warning from Tanjore: New Tensions in Rural Areas", Times of India, Jan 20, 1969.
14. N.B.Hiremath, "New Tasks imposed by Green Revolution", Integrated Management, 54:57 - 69.
15. G.Parthasarthy, changes in Rice Farming and their Economic and Social impact? Case study of a Delta village, Andhra Pradesh, Deptt.of cooperation and Applied Economics, Andhra University, Waltair, 1973.
16. M.L.Dantwala, "Agricultural Policy in India since Independence", in C.H.Shah and C.N.Vakil(ed) Agricultural Development of India: Policy and Problems, Orient Longman Ltd, Bombay, 1975, P.28.
17. L.B.Pearson, Partners in Development: Report of the

Commission on International Development, Praeger Publishers, London, 1969.

18. A.M.Khusro, "Agriculture as Business", The Illustrated Weekly of India, Feb 13, 1972, P.29.
19. C.H.Shah, "Indian Agriculture: Transition to Modernization", Commerce Annual No, 1983-84, Vol 149, No.3840.
20. J.J.Byres, "The dialectics of Indian Green Revolution", South Asian Review, Vol.5, No.20, Jan 1972.
21. G.S.Bhalla and G.K.Chadha, "Green Revolution and the small peasant: A study of Income Distribution in Punjab Agriculture - II", EPW, Vol.XVII, No.21.
22. P.N.Junankar, "Green Revolution and inequality", EPW, Review of Agriculture, Vol.X, No.13, March 29, 1975.
23. P.K.Bardhan, "The Incidence of Rural Poverty in the Sixties", EPW, Annual No., Feb 1973.
24. J.J.Byres, OP. cit.
25. Quoted in Sahasra-budhey. S, "Peasant Movement and the Question of Development" in(ed) M.N.Karna, Peasantry in Rural Protest, North Eastern Hill University Shillong, 1984.
26. Subas Ram, "Dynamics of Agrarian Relations in Sultanpur East Uttar Pradesh", Social Scientist, Vol.12, No.1, Jan 1984.

27. Cited in V.S.Vyas, "Structural change in Agriculture and the small Farm sector", EPW, Vol.XI, NO.1 and 2, 10 Jan 1976.
28. A.Rudra, "The Green Revolution and Greedy Revolution", South Asian Review, Vol.IV, No.1, July 1971.
- See also,
- R.K.Lahiri, "Impact of HYV on Rural Labour Market", EPW, Sept 26, 1970.
29. T.G.Jacob, OP. Cit, P.126.
30. A.Beteille, Studies in Agrarian Social Structure, OUP, Delhi, 1974, PP.105-106 and also see P.72.
31. W.F.Wertheim, "Betting on the strong", in (ed) Desai, A.R, Rural Sociology in India, Bombay, Popular Prakashan, 1959, P.102.
32. Mencher, P.Joan, "Conflicts and Contradictions in the Green Revolution: The case of Tamil Nadu", EPW, Annual Number, 1974.
33. Moonis Raza, "Measurement of Regional Disparities in Developing Countries with Special Reference to India, in Khan, Rasheeduddin(ed), India and the Soviet Union, 1975, P.152.
34. L.D.Wilcon, Social Indicators and Social Monitoring : An Annotated Bibliography, Amesterdam, 1972.



35. For example, if there is any data of the area double sown (variables) for all the districts of the region, we have to include cropping intensity as an indicator of agrarian transformation. The absolute figures can not lead us to conclude that district having more acres under double cultivation has greater cropping intensity.
36. Shahabad district was bifurcated into Bhojpur and Rohtas in year 1972.
37. Purnia district was bifurcated into Purnia and Katihar in year 1973.
38. Report on IADP 1961 - 63, India, Assessment and Evaluation (expert committee), New Delhi, 1963, PP.6-7.

CHAPTER II

AGRARIAN STRUCTURE OF BIHAR:

A HISTORICAL BACKGROUND

In this chapter, an attempt has been made to understand the agrarian economy, the agrarian relation and the political system in British India in general and in Bihar in particular.

(a) British land policy: Before describing the colonial land policy, we must mention the basic characteristics of the agrarian system under the Moghul period. The absence of a definite private ownership in land in the Moghul period sharply distinguished the Moghul land system from classical feudalism of Europe and British India. The agrarian system under this period was not production-oriented but a tax-oriented one in the sense that the peasantry was forced to meet the needs and demands of the ruling sovereign, the army and the landed aristocracy. Moreland says that the tax was paid by the peasantry for maintaining both the ruling sovereign and the army.<sup>1</sup> Throughout this period, subjecting cultivators to unbearable tax demands from an elaborately organised revenue administration, Moghuls were squeezing the maximum surplus out of them and thereby preventing the development of the productive forces.<sup>2</sup> Marx rightly said that "In pre-colonial India there were only three departments of the government, viz. the plunder of the interior (i.e. finance), the plunder

of the exterior (i.e. army or war), and finally the department of public works (mainly for agricultural purposes)<sup>3</sup>. The political scene of this period was marked by an incessant series of local wars and this situation has led some scholars to characterize the Indian state of this period as a "conquest state" or "military feudalism"<sup>4</sup>. Due to shortage of time and space, we can not mention in detail every aspects of the Moghul agrarian system. At the outset, it must be pointed out that in Moghul system the absence of any legal rights to lands by the cultivators or the revenue gatherers, resulted in agricultural stagnancy because under the given conditions there were little incentive for agriculturalists to invest in land. The introduction of land revenue settlement by the colonial state aimed at removing the time old stagnancy.<sup>5</sup> In this period land was never a commodity. To fleece and squeeze the peasantry were the common characteristics of the agrarian system under both the Moghul and the British.

In the late eighteenth and the early nineteenth century, three basic systems of land revenue: the zamindari system known as permanent settlement, the Ryotwari system and the Mahalwari system, was introduced by the colonial state. To enlarge the company's revenue was

main aim of the colonial land policy as Marx, in his notes and articles on India published in the New York Daily Tribune (1853), pointed out.<sup>6</sup> As already we have noted that these settlement was introduced to increase agricultural production and bring drastic change in land relations among classes.

TH-3396

The Mahalwari system known as joint or communal ownership of land, was introduced in the United provinces except Oudh, Punjab and the central provinces (excluding Berar). This system confirmed proprietary right over land with village community and land was cultivated on a co-sharing basis. But R. Mukherjee observes that there was trend towards individual assessments, and in practice the co-proprietors were treated as individual proprietors<sup>7</sup>. Baden Powell also confirms landlord spirit of individuals in Mahalwari areas.<sup>8</sup>

Evaluating Mahalwari tenurial system, D.N. Dhanagre states; "In so far as agrarian relations and social organization are concerned, the Mahalwari variety of tenure made very little or no difference since the classes of dominant, substantial landholders and cultivating peasants had begun to appear on the scene in these region as well."<sup>9</sup>

DISS  
338.1095412  
Si644 Ag  
  
TH3396

The Ryotwari system was introduced in Bombay, and parts of Madras presidencies, Berar and Assam. Under this settlement, tenure<sup>was</sup> on the individual basis in which each individual occupant held land directly from the government and there was no intermediary between the state and the cultivator. The right to sell, gift or mortgage the land was recognised.<sup>10</sup> The ryot as tenant of the state was responsible for paying revenue directly to the state treasury. Unless he fails to pay his revenue he could not be evicted, but the rate of revenue was flexible and subject to revision periodically. At every subsequent settlement or revision, assessment invariably went up by between 25 and 60 percent on the average, depending upon factors such as soil quality, yield, improvements made in land plots and so on.<sup>12</sup> R.C.Dutt elaborates this phenomenon in detail.<sup>13</sup> We must point out that the peasant under the zamindari system did not enjoy the right to mortgage, sell or gift the land. But the positions of peasants in the ryotwari area was not better than their class brothers in the zamindari areas. The colonial state ruined them both economically and physically.<sup>14</sup> Mentioning the disastrous consequences of the British rule in the ryotwari areas, R.C.Dutt<sup>15</sup> states:

"Nature set a limit which the cultivators had not obtained from the moderation of their rulers, population decreased in Bombay and still more in the central provinces. Miles of cultivated land became waste. Jungle grew on homesteads, wheat lands and rice lands." The proprietary rights on the peasants was lost to the same elements who had become zamindars in Bengal, Bihar, Orissa.<sup>16</sup>

Various categories of tenants such as 'protected', 'occupancy', 'ordinary' and 'sharecropper' tenants emerged in the ryotwari areas. This exploded the myth of 'peasant proprietorship' under the ryotwari system<sup>17</sup> as a viable alternative to the zamindari settlement. Mr. Auckland Colvin, in his minutes of the Daccan Riots Enquiry Report states: "It promises not to be Ryotwari, but a marwari system", and nobody wants that after having got rid of zamindars the land should gradually pass into the hands of village shylocks, greedy Banias and blood sucking money-lenders or accumulate in a few resourceful and cunning individuals."<sup>18</sup>

The permanent settlement of land in Bengal in 1793 introduced by Lord Cornwallis, was the backdrop

against which the agrarian system in Bihar remained in existence till 1950 when the Bihar land Reform Act was enacted. This settlement confirmed proprietary rights over the land with zamindars who were only conscious of their own interest and hardly took any interest in improvement of agriculture. It will be mentioned in subsequent section of this chapter. Commenting on the land tenure system established by the colonial state, Marx writes: "In Bengal they (the British) created a caricature of English landed property on a large scale, in south eastern India a caricature of small allotment property, in the north-west they transformed to the utmost of their ability the Indian commune with common ownership of the soil into a caricature of itself."<sup>19</sup>

The main objective of this settlement was to gear up this economy in the interests of imperialist bourgeoisie and to create<sup>20</sup> a class of collaborators i.e the Indian landlords to squeeze maximum surplus out from agriculture.<sup>21</sup> The exploitation of peasantry was continued by the British in alliance with its natural allies the Indian landlords in the form of eviction



and exorbitant rent.<sup>22</sup> The situation marked by absence of legal limits on levy imposed upon peasantry, caused immense misery for them. The destruction of traditional industries further increased the pressure on cultivable land with the result that there was no dearth of tenants willing to till the soil on any outrageous conditions.<sup>23</sup> The landlords could change tenants at will<sup>24</sup> because there was not adequate provisions for safeguarding the interests of cultivators.<sup>25</sup> After the enactment of this settlement, millions of peasants were arbitrarily evicted within a very short period on the plea that such laws were necessary to meet economic and noneconomic demands of zamindars.<sup>26</sup> In short, the whole structure shaped the feudal agrarian economy of Bihar.<sup>27</sup>

Under both the zamindari and the ryotwari system, the state was considered as the supreme authority on land. The economic conditions of the peasantry did not differ much. In Ryotwari system, it was the revenue authorities who enforced the collection of revenue at exorbitant rent. The zamindari system suited the political interests of the imperialist better, the Ryotwari suited their economic interests.<sup>28</sup> They are only two

different juridical concepts of the same feudal landlordism.<sup>29</sup> The British rulers brought three major changes in the existing land relations.<sup>30</sup> Firstly, the decay of the all the remnants of the old village communities has been found. The direct producers lost their traditional security without gaining any new one. Secondly, in emerging land relations, the old pre-British Asiatic System had undergone, while the essence of the new land system remained feudal. Thirdly, they transformed the land into a commodity. In colonial period, commercial crops were augmented by the Britishers at the cost of foodcrops. The farmers were compelled to cultivate commercial crops (like sesamum, linseed, groundnut, castor seed, other oil seeds, sugar cane, tea, coffee, tobacco, cotton, jute, indigo and opium). These crops were exported by the British traders either in raw or semi-processed form to make profits.<sup>31</sup> Following Marx's analysis, Rajni Palme Dutt, in 'India today,' presents the picture of the stagnant Indian society which underwent a process of turbulence in the course of the imperial rule.<sup>32</sup> These settlement did not lead any breakthrough in agriculture in British India. Between 1900 and 1940 the total

area under all food crops registered an increase of 10.63 percent while the total area under all commercial crops increased by almost 36 percent. During the same period the value of product for all food crops decreased by 1 percent while the value of product for all food crops increased by 40 percent.<sup>33</sup> Summing up the impact of land relation on agriculture, Daniel Thorner states : "This complex of legal, economic and social relations uniquely typical of Indian countryside served to produce an effort which I should like to call that of a built-in 'depressor'. From the 1880's to the 1940's total output rose so slowly that it would not be too strong to speak of stagnation."<sup>34</sup>

(B) Various legislation and classes: various Acts Regulation III of 1794, Halftman Regulation VII of 1799, Regulation VIII of 1819, Regulation XII of 1817, Regulation I of 1819, Quanut Panjam Regulation V of 1812 and Regulation XI of 1822, introduced by the colonial state for dealing with tenant-landlord relationship, tilted in favour of zamindars or the class associated with the colonial state against tenants and worsened the position of the tenants.<sup>35</sup> In fact all land legislation till

1841 was designed to serve the interests of the landlords,<sup>36</sup> and its main aim was to enable them to realize their interests i.e to squeeze the peasantry.<sup>37</sup> The great majority of tenants, even after 50 years of legislation, remained quite as indigent and destitute as before.<sup>38</sup> Apart from them, the rent Act of 1859 and Act of 1885 was enacted by the colonial state to give some rights to kisan. According to the Act of 1859, any tenant who had continuously held the same land for 12 years would be regarded as an occupancy tenant. But the tenants faced dispossession because the landlords made the routine to change the tenants within the stipulated time.<sup>39</sup> To consolidate position of tenants, the Act of 1885 declared the occupancy right as heritable, and accordingly, the rule of succession was laid down without harming zamindars,<sup>40</sup> the Act hardly provide any relief to the tenant from the oppressive clutches of the landlords who sucked the blood of their tenants through unjust demand.<sup>41</sup> Based on the basic principles of the permanent settlement, the Act was the compulsory enforcement of the zamindars obligations, not new declarations of right and title, under such a declaratory legislation,

an agrarian system developed in Bihar "which was possessed of the worst elements of the permanent settlement and contained none of the redeeming features."<sup>42</sup> The Act of 1859 was a feeble and half hearted measures and its weakness were exposed during the agrarian tensions.<sup>43</sup>

The material basis for the differences in agrarian situation in Bihar and Bengal lies in the fact that the size of zamindar in Bihar was small in spite of the existence of mammoth estates like Darbhanga, Bettiah, Banaili, Dumraon. However, the presence of the small size of estates did not mean better management because they were "inefficient, decadent, idlers, slothful, devoid of education and abilities, and unable to play the role expected of them."<sup>44</sup>

The fluid commission pointed out that between 1921 and 1931 there were 62 percent increase in the army of rent receivers. There was a wide gap between land revenue paid by actual tiller of the soil and the rent paid to the zamindar in Bengal. The pernicious system of sub-infeudation - the patni system placed the army of intermediaries between the actual proprietor and the tenant in Bihar, Presenting data, G.Ojha<sup>46</sup> observed that a large number of people as intermediaries who were living on income

derived from landed property without making any productive effort. According to him, there were two classes of such intermediaries that held a grip on the economic and social status of the village. One lived entirely on rent may be called as pure rentier. The other class was that of owner-cultivator who, owing to various reasons, leased out their land or cultivated part of it through hired and family labour and part through share croppers.<sup>47</sup> This class had not traditional connections with the land.<sup>48</sup>

Many of the zamindars marked by "inability and incompetence, created" highly ramified set of middlemen for management of their estates, in turn, receiving from them proprietary share of profit. They did not involve themselves in the affairs of cultivation and confined themselves to the work of general inspection. The zamindars participation into these affairs was regarded as highly derogatory on his rank. However these middlemen or thikadars not only acquired degrees of rights on the land itself but also exploited poor peasantry leading to perennial source of agrarian tension.<sup>49</sup>

The growing indebtedness of big zamindars such as the Rajah of Buxar, Bikramjit Singh of Dumraon of Bhojpur, Darbhanga Raja and Raja Indernarain of Havely Purnea to bankers and money lenders, resulted in alienation

of land from them.<sup>50</sup> However such alienation of land occurred either through private transactions or through decrees of the Dewani Adalat and continued till the abolition of zamindari. These zamindars were unable to extricate themselves from utter dependence on moneylenders and bankers. Hence, evolution of land market and operation of usury capital became integral feature of zamindari in Bihar.<sup>51</sup>

The sunset law was the result of the growing indebtedness of the zamindars and required that government revenue should be paid with unflinching punctuality by the fixed date before sunset. In Bihar, the raja of Sheohar was victim of the sunset law.<sup>52</sup> This phenomenon has been examined by M.Mitra also.<sup>53</sup> The indebtedness of zamindars in Bihar was not due to insufficiency of their rental income in relation to revenue and cost of management but was due to their extravagance on liquor, dancing girls, ceremonies and entertainments. In case of Champaran, this has been examined by G.Mishra.<sup>54</sup>

The settlement in Bihar did not lead to any breakthrough in agriculture due to above mentioned facts. The agricultural sector as a whole remained stagnant,<sup>55</sup>

and the expectation of the Britishers was frustrated. Apart from them, the tenants found little incentive to extend and develop cultivation due to lack of means and they found it senseless to produce for the parasitic landlord.

The phenomenon of land-market and also trends of deteriorating conditions of large holdings have been observed by scholar in west Bengal<sup>56</sup> and Bihar.<sup>57</sup> Despite common<sup>58</sup> feature such as increased population pressure on land, increased income from estates and favorable laws responsible for rising land price in Bihar and Bengal, three reasons<sup>59</sup> were held to be responsible for the higher land price in Bihar as compared to Bengal. Firstly, the revenue demand in Bengal was higher than in Bihar. Secondly, through lease system, a 'legitimate' rich peasantry i.e Jotedar developed in Bengal whereas in Bihar such rich peasantry as came up owing to the economic process of commercialisation remained, by and large, under-tenants who had a very small degree of protection under the law of the permanent settlement. Thirdly, the some canal system, in the southern districts, provided irrigation facilities that led to increase in agricultural output and income of



zamindars. The improved irrigation facilities and improved commercialization of farming of this region provided material condition for Bhojpur peasant movement. The low level of political consciousness of peasantry in Bihar compared to Bengal and growing rate of population contributed to the value of landed property.<sup>60</sup>

In brief, rent enhancement, unauthorised exactions, evictions and other kinds of oppression against the tenantry continued, more or less, throughout the period.<sup>61</sup> The situation in the 1930<sup>62</sup> in Bihar was such that the relentless pressure of the zamindar and the zamindar's amla or agent defeated all efforts of the administration even to provide such limited relief as it thought fit to the oppressed tenantry. Patta regulations, Pargana dates, institution of patwaris failed to produce any ameliorative effect on the conditions of the tenantry,<sup>63</sup> and this situation marked by the absence of comprehensive records of tenant's right in champaran resulted in reduction of ryots to the status of more tenants at will. This incomplete indifference to tenant's right resulted in agrarian tensions in rural Bihar.<sup>65</sup>

(c) Rent, class and agricultural production like any other

state of Eastern India, the tenure system<sup>66</sup> in Bihar could broadly be classified into three categories (i) Tenures of permanent character (ii) Tenures created for a temporary period and (iii) estates held directly by the government. Tenures of permanent character were mainly confined to Tirhut, Patna, and Bhagalpur divisions and formed 99 percent of the total number of estates. Temporarily settled estates and estates held by the government formed 0.5 percent and 0.6 percent of the total estates respectively. The owner's right in a permanently settled estate was heritable and transferable with the right to sell, mortgage, gift and grant leases for the whole or any portion of it for a term of years or in perpetuity. Apart from them, the landlords possessed waste lands and the gairmajarua amm such as churgah, Tal (lands used by the village community).<sup>67</sup> In short, the large number of areas were possessed by the blood sucking and oppressive parasitic lot and in both areas (i) and (ii), the position of tenant hardly improved.<sup>68</sup>

Prior to the 50's, there had been grown up in Bihar an intricately stratified system of relationship of people to land in a following<sup>69</sup> way:

(1) The zamindar legally a "proprietor, but acting as an intermediary of the state in the collection of rent from tenants. The amount payable to the state was fixed in cash, in perpetuity, and was supposed to represent 9/10th of what zamindars received in rent from the tenants. The zamindars were allowed the right to fix their own terms with tenants.

(ii) The Tenure holder : Primarily a person who has acquired from a proprietor or from another tenure holder a right to hold land for the purpose of collecting rents or bringing it under cultivation by establishing tenants on it, and includes also successors in-interests of persons who have acquired such a right.

(iii) The occupancy ryot: a rent paying holder of land having the right of occupancy on the land held by him "for the purpose of cultivating it by himself or by members of his family or by hired servants or with the aid of partners.

(iv) The non-occupancy ryots: a rent paying holder of land not having the right of occupancy on land temporarily in his possession.

(v) The under ryot : a rent paying holder of land having

temporary possession of a holding under ryot.

(vi) The majdoor : a wage labour having no right in land.

The Bihar Tenancy Act of 1885, classified the tenants into three classes (i) occupancy ryots (ii) non occupancy ryots and (iii) under ryots. Apart from them, some special types of ryots such as Bhaoli, Hai-hasila, Khurpas, Bargait and sikmis were scattered over all the districts of Bihar.<sup>70</sup>

The sharing of agricultural surplus was the most important issue in the control over land vested by the permanent settlement on the zamindars. The land revenue system as prevalent in Bihar was notable for its diversity in different districts. The mode of collection<sup>71</sup> of rents from the tenants differed from district to district and from time to time but peasants<sup>72</sup> payment for the use of land, remains the principal mode of maintenance by landlords of their control over land. The whole arrangement was structured in the way that only benefitted, to large extent, to oppressive and blood sucking land-lords at the cost of poor peasantry. The landlords<sup>73</sup> had been benefitted from extension of cultivation, share-income from fisheries, orchards and pastures.

The rent exaction in Bihar has been classified

by B. Sen<sup>74</sup> into three forms (i) labour rent (ii) produce rent and (iii) money rent. The most vicious form of rent exaction through primary tenancy showed itself in produce rent or Bhaoli system which was most exploitative. In Bhaoli system, payment in kind were most significant form of transfer of surplus from the cultivator to the landlord. This system was mainly concentrated in south Bihar, while in Champaran and northern Tirhut area, it was different<sup>from</sup> that of south Bihar areas. Under this system, the zamindars practically took, by way of rent, as much of the crop as they choose to claim, which was marked by the absence of customary or legal rights.<sup>75</sup> The landlords started making exorbitant demands for the share of produce as rent and they abandoned the sanction of flexible customary procedures of the past and took recourse to the harsher and more rigid machinery of the law. The machinery of courts encouraged the landlords to increase their demands and conferred more power on them,<sup>76</sup> in order to squeeze and suck the blood of peasantry. This system was held to be responsible for peasant agitations.<sup>77</sup>

Money rent did exist on almost all northern states of Bihar and Purnea. It was supposed to have some

flexibility, as was to be found in the produce rent system. In Purnea, the money rent prevailed but it was not indicative of any positive economic trends and consolidated rich peasants on a backward economy.<sup>78</sup> Buchanan and Colebrook has mentioned that higher castes in Purnea paid lower rent than the lower ones.<sup>79</sup> The superior ryots, known as ashrof ryots in Bihar, were a dishonest, unscrupulous set of persons who exploited the general body of cultivators.<sup>80</sup>

The agricultural surplus product can be classified in three different ways: in the form of products (use value), in the form of work (labour service) and in the form of money (exchange value). In the capitalist society last form is found, in the precapitalist society first two form. The transitional economy, characterized by the semi-feudal or semi capitalist mode of production, possesses all the three forms. Such was the case in Bihar during the zamindari period.<sup>81</sup>

Consolidating their monopoly over the Baksht mechanism, the oppressive landlord leeches sucked the poor peasantry. Through the tenancy Act of 1885, the tenant had to pay rent in cash. If they failed to pay the required rent, the tenants land were taken away by

landlords (known as Bakasht land). The poor peasantry as unregistered share-croppers cultivated their own land which had become the Bakasht lands. This caused another source of agrarian tension in Bihar.<sup>82</sup> The Bakasht dispute, that caused peasant struggle in Bihar, were result of deprivation of occupancy ryots by landlords.<sup>83</sup>

Apart from them, the landlords and their agent extracted maximum surplus in the form of extra legal and illegal cesses or levying abwabs, salami money paid at the time of transfer of occupancy holdings and vicious system of carvee-physical work without payment known as begar. As Porter said: "In fact Indian landlords seem to consider that a resident of his village should pay for permission to do any conceivable action, even for eating and drinking and sleeping."<sup>84</sup> The peasantry were levied on the pretexts of Khyraat or charity to the zamindar, Gram poojah, Tulsana which was paid in lieu of personal attendance on the zamindar.<sup>85</sup> Apart from them, they were levied on the pretexts of petpiravan (when the zamindar's wife conceived), Hathiavan and motoravan (for purchasing the zamindars elephant and car).<sup>86</sup> The poor peasantry had to pay rent to big zamindars for their personal

work i.e their son's education, marriage in their family and a party to a big governmental officials.<sup>87</sup>

Commercialisation was introduced in the agriculture, as already we have noted. As one scholar states " The formation of a land market (in the initial stages of the settlement) resulted from three sets of circumstances: the insistence on the part of the government on sales of defaulting zamindari estates as a device towards ensuring the security of its revenue, the inability of very many zamindars under the circumstances to cope with the increased revenue burden, particularly, during the first few years after the introduction of the new fiscal administration, when in fact the largest number of sales occurred, and the willingness because of various reasons on the part of the moneyed persons to transfer part of their fortunes to the purchase of estates."<sup>88</sup> This 'commercialisation from above' rose almost continuously through the nineteenth century and upto the great depression in the twentieth century. Thereafter there was a fall in land prices which was even sharper than the fall in the prices of agricultural produce.<sup>89</sup> The rural exploitation was perpetuated through land market in the sense that increasing indebtedness of the peasantry was maintained. According



to Banking Enquiry Committee, the peasants in Bihar paid Rupees twelve crores in the form of rent and Rupees twenty seven crores in the form of interest.<sup>90</sup>

Thus, the above mentioned kind of the uneven distribution of land surplus, various kinds of payment-three forms of service and squeezing of the peasantry by an oppressive and blood sucking parasitic lot, deterioration in agricultural production and plundering of Bihar prepared the framework under which the agrarian relation and economy of Bihar developed till the abolition of zamindari system and other measures adopted after 1947 by the government of India.

#### Notes and References

1. W.H.Moreland, Agrarian system of Moslem India, Delhi, 1968 P.XI.
2. T.G.Jacob, India Development and deprivation: Neo colonial transformation of the country in a historical perspective, Mass line Press, New Delhi, July 1986, PP.22-28.
3. Marx's article "The British rule in India," New York Daily Tribune, 1853 quoted in D.N.Dhanagre Peasant movement in India, 1920-1950, Delhi, Oxford University Press, 1983, P.26.
4. T.G.Jacob, OP, cit, P.22.
5. Ibid,
6. Cited in D.N.Dhanagre, OP, cit, P. 31.

7. R.Mukherjee, "Land Problem in India", quoted in P.A.Wadia, and K.T.Merchant, Our economic problem, Bombay, 1959, P:282.
8. Quoted in D.N.Dhanagare, OP.cit, P.34.
9. Ibid P.34.
10. Bhowani Sen, Evolutions of Agrarian relations in India, N.Delhi, P.P.H, Feb, 1962, P.66.
11. D.N.Dhanagare, OP.cit, P.33.
12. Ibid.
13. R.C.Dutt, The economic history of India, " In the victorian Age: 1837-1900, Delhi, 1963, PP.230-33.
14. B.Sen, OP.cit, P.67.
15. Quoted in Ibid.
16. Ibid.
17. Ibid, P.68, also see Dharma Kumar, Land and caste in South India, Cambridge, 1965, PP. 21-33.
18. Quoted in A.N.Das, Agrarian unrest and socio-economic change in Bihar. 1900-1980, Manohar, 1983, N.Delhi, P.201.
19. Marx, capital, Vol.III, PP.392-3, quoted in Wadia and Merchant, OP.cit, P.280.
20. B.Sen, OP.cit, P.63.
21. Manoshi Mitra, Agrarian Social structure: continuity and change in Bihar. 1786- 1820, N.Delhi, 1985, P.14.
22. Ranjit Guha, A rule of private property in Bengal, Paris, 1963, T.G.Jacob, OP.cit, P.45.
23. T.G.Jacob, OP.cit, P.45.
24. Ibid.

25. S.C.Ray (comp) Land Revenue Administration in India,  
Calcutta, 1915, PP.38-39.
26. T.G.Jacob, OP. cit, P.45.
27. A.N.Das, OP. cit, PP.22-23.
28. T.G.Jacob, OP. cit,
29. B.Sen, OP. cit, P.76.
30. Ibid, PP.77-79.
31. T.G.Jacob, OP. cit, P.49.
32. Quoted in M.Mohanty, "Ideology and strategy of the communist  
movement in India", in (ed)  
K.D.Kenneth and T.Pantham, Political thought in Modern India,  
N.Delhi, Jan, 1986, P.239.  
SAGE Publications,
33. T.G.Jacob, OP. cit, P.48.
34. D.Thorner, Agrarian Prospect in India, Delhi, PP.12-13.
35. R.N.Sinha, Bihar tenantry (1783-1833), Bombay, PPH, 1968,  
PP.104-121.
36. Rakesh Gupta, Peasant struggles: A case study of Bihar,  
Ph.D. Thesis, J.N.U, New Delhi, 1978, P.312.
37. S.C.Ray, OP. cit, P.43.
38. R.N.Sinha, OP. cit, P.149.
39. G.Ojha, Land problems and land Reforms: A study with reference  
to Bihar, Sultan Chand Sons, N.Delhi.
40. R.Gupta, OP. cit, P.313.

41. G.Ojha, OP.cit, P.35.
42. A.N.Das, OP.cit, P.24.
43. R.B.Chaudhry, The British Agrarian Policy in Eastern India,  
Bengal and Bihar (1859-80), Janki Prakashan,  
Patna, 1980, P.172
44. A.N.Das, OP.cit, P.26.
45. Quoted in G.Ojha, OP.cit, P.46.
46. G.Ojha, OP.cit, P.47.
47. Ibid.
48. Manoshi Mitra, OP.cit, P.233.
49. Ibid, A.N.Das, OP.cit, P.27.
50. Manoshi Mitra, OP.cit, PP.75-83.  
and for detail discussion see report of Buchanan from  
various districts.
51. A.N.Das, OP.cit, PP. 27-28.
52. G.Mishra, Agrarian problems permanent settlement: a case  
study of Champaran, PPH, N.Delhi, 1978, P.303.
53. M.Mitra, OP.cit, P.6.
54. G.Mishra, OP.cit, P.305, also see PP.79-122.
55. M.Mitra, OP.cit, P.45.  
G.Mishra, OP.cit, P.305.  
G.Ojha, OP.cit, P.45.
56. F.G.Baily, Caste and the economic frontier, Manchester, 1957.
57. M.Mitra, OP.cit.
58. B.B.Chaudhry "Land market in eastern India, 1793-1940,"  
Indian economic and social history review  
(IESHR), VolXII, No.\* and ", N.Delhi, 1975.
59. A.N.Das, OP.cit, P.34.

60. Ibid P.35.
61. R.N.Sinha, OP. cit, P.47.
62. A.N.Das, OP. cit, PP.35-36.
63. R.Gupta, OP. cit.
64. G.Mishra, OP. cit, P.158.
65. R.B.Chaudhry, OP. cit, P.175.
66. G.Ojha, OP. cit, PP.36-38.
67. Ibid, PP. 38-39.
68. R.N.Sinha, OP. cit, PP 79-103.
69. F.T.Jannuzi, Agrarian Crisis in India, the case of Bihar,  
N.Delhi, Sangham Books, 1974. PP.10-11.
70. For detailed description, see G.Ojha, OP. cit, PP.65-67.
71. Ibid P.41.
72. A.N.Das, OP. cit, P.35.
73. G.N.Mishra (ed), Land Reforms in Bihar, Patna, 1974, P.60
74. B.Sen, OP. cit, P.79.
75. M.Mitra, OP. cit, PP 40-42.
76. A.N.Das, OP. cit, PP 40-42.
77. Ibid, M.Mitra, OP. cit, P.213.
78. M.Mitra, Ibid, PP. 213-219.
79. G.Ojha, OP. cit, P.43.
80. R.N.Sinha, OP. cit, P.146, and also see PP 77-98.
81. A.N.Das, OP. cit, PP. 42-43.
82. Ibid, P.43.
83. R.Gupta, OP. cit, P.312.
84. Quoted in G.Mishra, OP. cit, P.68.
85. M.Mishra, OP. cit, PP 222-223.
86. A.N.Das, OP. cit, PP.44-45.
87. H.D.Malviya, Land Reforms in India, N.Delhi, 1955, P.45.
88. B.B.Chaudhri , "land market in eastern India 1793-1940".

IESHR , Vol XIII, NOS. 1 and 2, Jan June, 1975.

89. A.N.Das, OP. cit, P.46.

90. Ibid, PP. 46-47.

CHAPTER III

AGRARIAN CHANGE IN BIHAR:

THE GREEN REVOLUTION

The New agricultural strategy, adopted since the mid-sixties has helped in changing Bihar agriculture. In this chapter ~~has~~ an attempt has been made to depict components of new agricultural technology and its consequences to Bihar.

Bihar is a predominantly peasant economy. According to 1961 census, the population of Bihar was 464.56 lakhs of which 452 lakhs lived in 67,665 villages of State which was 91.59% of the total population of Bihar. Considering the working population in the state 76.84% belongs to the agricultural sector in which 53.87% consists of cultivators while 22.97% comprises of landless labourers.<sup>1</sup> Similarly a major share of the state income has been calculated in terms of Net domestic products at factor cost which stood at Rs.1,628.93 crores of which agriculture and allied activities have share of Rs.941.75 crores which accounts for 57.8% of the state income.<sup>2</sup> Thus agriculture is the major occupation of the people of Bihar and their main source of income.

#### Land Use Pattern

Table I

#### Classification of Area in Bihar.

(Figures are in Percentage to total area)

	NSA	Forest	Land put to uses (non agricultural)	Current fallow
State	48.6	17.6	10.1	9.0

Source: Annual Season and crop Report, Bihar, D.S.E.,

1969-70, P.2



The net sown area in the state has the highest percentage among the all categories of land use which is 48.6%. It is very high in plain regions while comparatively low in the hilly regions of Chotnagpur.

Forest accounted for 17.6% of the total state territory in 1969-70. The forest area in the state is disproportionately distributed. The land put to non-agricultural uses and current fallow accounted for 10.1 and 9.0% of the total state territory respectively.

#### Cropping Pattern

Considering the cropping pattern of Bihar, the agricultural year may be divided into three main cropping seasons:-

- (a) Autumn crops or Bhadai crops
- (b) The winter or Aahani crops
- (c) Rabi crops. There is also fourth crop season called Garma, the summer crop season.

The summer crops mainly consists of vegetables and millets. The are under these crops as mentioned in the following table also shows the relative importance of different seasons in Bihar.

#### Table - 2

Area in different crop season in Bihar. (Figures are in percentages to total cropped area) in 1969-70.

Cropping Season	Area in percentages to total cropped area in the state.
Bhadai	17.8
Agahani	30.4
Rabi	29.8
Garma	20

---

Source:- Bihar through the figures, 1970, Op.cit, P.57.

It is discernible from the table that Agahani crops are most important crops in Bihar. After Agahani, Rabi is important cropping season followed by Bhadai and Garma.

Land reforms aimed at abolishing the right of intermediaries in land, redistributing the land through the provision of ceiling, ensuring the tenurial rights of tenants and finally increasing farm productivity. In fact land reform was conceived as an integrated plan to break the inertia of the rural social structure. On the whole the programme proved to be an ideal intentions of the new democratic polity.

From 1950-51 to 1960-61, several acts were passed for above mentioned purposes. In between the time of enactment and enforcement, the zamindar took advantage of delays to put through paper partitions of Joint family properties and in the process they tempered with the village records for personal gains. The enforcement of the act was slow and ineffective. The Bihar Land Reform Act of 1950 failed to bring any change in Socio-political set up of the villages.<sup>3</sup> Various evaluation Reports, Plan projects and documents have enumerated that the

lack of the political will have been key factor behind ineffective implementation.<sup>4</sup> This resulted in agrarian tension of various districts of Bihar.<sup>5</sup>

The tenancy act of 1885, 1938 and 1955 failed in its objective.<sup>6</sup> The landlords enjoyed almost legal protection to evict a tenant under the provision of personal cultivation. In absence of security of tenure, bargaining power and money, the bataidars do not question the illegal demands of landlords and accepts terms and conditions of landlords. Still concealed tenancy exist in different parts of Bihar. Oral lease is the most important practice of subletting all over the state.

In Bihar the legislative measure to impose ceiling on land holdings was finally passed in 1961. But it also failed in its objective.

In short, all these acts failed to bring change in the agrarian set-up of Bihar. Commenting on them, the working group on land reform states: "By their abysmal failure to implement the laws, the authorities in Bihar have reduced the whole package of land reform measures to a ~~sew~~ joke. This has emboldened the landowning class to treat the entire issue of agrarian reform with utter contempt. Elsewhere in the country, the law evaders have sneaking respect for the law enforcing authority. Their approach is furtive, their method clandestine. In Bihar, the landowners do not care a tuppence for the administration."<sup>7</sup>

Bhoodan movement, in the midst of agrarian unrest, was launched by Vinoba Bhave and J.P. in Bihar. Acco-

rding to Bhave, Bhoodan Yagna-is an all comprehensive movement directed to reform in all walks of life.<sup>8</sup> He suggested that the problem of landlessness can be solved not by violence, and legislation but through the spirit of Bhoodan. The Bhoodan movement was started by Bhave in Bihar in 1952 and he vowed to remain in Bihar until the land problem was solved.<sup>9</sup> After two years of Bhoodan activity, J.P. Narayan said; " I am shamed. We Biharis took a vow of 3,200,000 acres in order to solve land problem of our province. We have kept Baba (Bhave) with us for eighteen months, but still this vow has not been fulfilled....."<sup>10</sup>

The fact remains that the land donated in Bihar was rocky, barren or otherwise agriculturally poor or was under dispute in current legislation.<sup>11</sup> In Purnea the land has been donated to landless labourers in 1954-55 but in 1977 they were still landless. The movement has only created an illusion among the peasants that some landlords were indeed generous and magnimous.<sup>12</sup> Criticising the Bhavian model, Jannuji says that the problem of distributing Bhoodan land has never been solved. In his studies of village (Gaya district - south - Gangetic plains), he concludes that even in successful Bhoodan areas, the ex-intermediaries remained in a powerful position. The landed families remained powerful. The recipients of Bhoodan still had to earn a crucial portion of their incomes as agricultural labourers in the field of their more prosperous neighbours.<sup>13</sup>

On the request of J.P.Narayan, a survey<sup>14</sup> was conducted by Pradhan H. Prasad, Jai B.P.Sinha and Sachidanand from sociological, economic and social-psychological angles on this movement. Their findings show that extreme poverty restricts the meaning of Sarvodaya. They further say that 92.59% donees felt grateful for this dan. The landowners were openly admitting that donation of land, under the grab of generosity, is a device which helps them to maintain control over their retained labourers. They also observed that the movement has fallen into the hands of those who are not disposed to make any radical change. This has been supported by L.P.Singh also.<sup>15</sup> After examining land reform and Bhoodan movement, Thorner observes that neither zamindari abolition nor Bhoodan persuasion has transformed rural Bihar.<sup>16</sup>

After failure of Land reform, the new agricultural strategy was started which attempted a new technological breakthrough in India. It is characterized by adoption of HYV seeds, fertilisers, pesticides, irrigation, machinery, improved implements, soil conservation, etc. The government of India gave their general approval to the implementation of the IADP in seven districts which was to be chosen from seven states. Shahabad(Bihar) district was one of them. The first package programme<sup>1</sup> was introduced in year 1960-61. After that IADP, and Intensive Agricultural Area Programme (IAAP) were introduced in some parts of Bihar (Patna, Nalanda, Gaya)

There was a gradual adoption of new agricultural technology, though to a limited extent.<sup>17</sup>

Irrigation is one of the fundamental factors in the adoption of the new agricultural strategy. It helps in increasing production per unit of land, particularly when used in an appropriate combination with other inputs.<sup>18</sup> Bihar has attempted to develop irrigation facilities as it is clear from Table 3. The table also reveals that 29.8% of net area

Table 3

Percentage of Net Sown Area Irrigated Source-Wise.

State	Canal		wells		Total: All Source		Increase in net irrigated area during 1970-71 to 1975-76
	1961-62	1975-76	1961-62	1975-76	1961-62	1975-76	
1. Bihar	6.7	10.8	3.9	8.8	23.6	29.8	27.8
2. Punjab	29.2	31.5	13.0	20.4	42.6	73.8	8.1
3. All-India	7.7	9.4	5.4	9.6	18.3	23.5	10.9
4. A.P	11.2	13.01	3.6	5.6	26.8	34.9	3.7

Source:- A.N.Sandhu and R.K.Mahajan, Technological Change and Agricultural Development in India, Bombay, Himalaya Publishing House, 1985, P.33.

sown in Bihar, 34.9 percent in Andhra Pradesh and 73.8 percent in Punjab are irrigated. The data shows the inter-state disparities in the growth of area under irrigation. Between 1961-62 and 1975-76, the share of canal irrigation has increased from 6.7 percent to 10.8 percent in Bihar. In case of wells, Bihar also fared well but <sup>not</sup> in comparison to Punjab. The percentage of net shown irrigated from all sources is higher than the national average in Bihar as it would appear from table 3.

The performance and yield of HYV seeds of principal crops has been modest in Bihar. Both agricultural production and productivity went up as it is discernible from Table 4. The yield (Kg/hect) of foodgrains was highest in 1971-72.

See. TABLE-4 ON NEXT PAGE

Table - 4

Foodgrains - Area, Production and yield - Bihar  
and India (1950-51 to 1974-75)

Year	Bihar			India		
	Area (Lakh hect)	Out turn (Lakh tonnes)	yield (Kg/hect)	Area (Lakh hect)	Outturn (Lakh tonnes)	yield Kg/hect
1950-51	98.35	44.42	452	973	508	522
1955-56	92.95	56.21	605	1106	669	605
1960-61	99.28	74.19	747	1156	820	710
1965-66	95.95	72.35	754	1159	723	629
1970-71	99.00	78.65	795	1243	1084	972
1971-72	96.65	90.04	931	1222	1047	856
1972-73	95.29	83.42	875	1228	971	791
1973-74	95.97	77.65	809	NA	1036	NA
1974-75	97.10	82.50	850	NA	1040	NA

Source:- Bihar, Bihar State Planning Board, Selected Plan Statistics,  
Patna, 1976, P.40.



The area under HYV seeds as a percentage of Area under foodgrains was 22.7 percent in Bihar in 1973-74. It declined to 21.2 percent in 1974-75 and picked up to 40.1 percent in 1978-79 as it is obvious from Table-5.

Table-5

Area under HYV seeds as percentage of area under foodgrains.

States	1974-75	1978-79	% increase from 1974-75 to 1978-79
Bihar	21.2	40.1	89.15
Gujrat	36.9	47.8	29.54
Punjab	64.7	69.5	7.42
Haryana	40.2	41.0	1.99
All India	22.3	33.1	48.43

Source:- A.N.Sandhu and R.K.Mahajan, O.P.Cit, P.40.

The data in table 5 also highlights the fact that states like Punjab, Haryana and Tamil Nadu are much ahead in adopting HYV seeds in comparison to Bihar. In Bihar, a tremendous increase in percentage of area under improved seeds has been achieved. This is mainly due to the development of HYV for rice.

Table - 6

Use of fertilisers, Kg/hect of CGA

State/ <sup>Year</sup>	68-69	69-70	70-71	71-72	72-73	73-74	74-75	75-76	76-78	78-79
Bihar	7.25	11.91	9.11	9.79	10.74	1.10	11.30	12.50	13.80	17.20
Punjab	34.35	33.67	40.31	52.69	58.72	58.20	43.90	51.70	59.30	94.50
U.P	15.33	20.82	18.35	20.90	22.67	20.30	17.80	21.10	31.40	45.60

Source :- Fertiliser Statistics, Fertiliser Association of India,  
from 1969 to 1979.

Organic manures and chemical fertilisers are crucial inputs in agricultural production. Consumption of fertilisers in Bihar has been increasing. In Bihar, 17.20 Kg is the fertiliser consumption per hectare of the cropped area while 94.50 Kgs and 45.60 Kg, are the corresponding figures for Punjab and U.P as seen from the data given in Table 6. It shows that Bihar still is one of the more backward states of India in terms of modernization of agriculture.

43.2 percent of Bihar villages are electrified as against 100 percent in Punjab, Haryana and Kerala, 99.4 percent in Tamil Nadu and 55.7 percent in India as whole.<sup>19</sup> consumption of pesticides in Bihar (consumption per hectare of cropped area Kg) was 0.3 in 1974-75 which was less than consumption of pesticides for Punjab, Haryana and Andhra Pradesh.<sup>20</sup>

In India the growth in mechanical inputs in farming practices is of recent origin and low. But, with the introduction of commercial agriculture, farmers are adopting it on an increasing scale. Bihar has lagged behind in using agricultural implements such as tractors, oil engines and electric pumps. In growth of number of tractors, oil engines and electric pumps per 100,000 acres of net sown area, Punjab, Haryana, Uttar Pradesh and Tamil Nadu were in the top position in 1966. In 1972, Punjab and Haryana retained the first position

while Bihar has shown poor performance.<sup>21</sup> It is clear from our analysis that the extent of mechanization in agriculture is low in Bihar in comparison to other states. Bihar ranks 6th among Indian states in using tractors, while in case of oil engine it has got 8th position. As far as use of electric pumpsets are concerned, Bihar ranks 6th among all states.<sup>22</sup>

The whole package of the Green Revolution did not lead to any significant result in Bihar although the agricultural income has been rising as seen in Table 7.

Table - 7

Indices of Agricultural Income (1960-61=100)

year	At current prices	At constant (1960-61) prices
1965-66	177.78	101.31
1968-69	196.65	102.01
1969-70	196.69	95.80
1970-71	227.21	124.97
1971-72*	237.81	128.77
1972-73*	297.56	125.44

\*Provisional estimates

Source: Bihar, Bihar state Planning Board, Selected Plan statistics, Patna, 1976, P.110.

The single most important factor responsible for low and uneven growth of agriculture is the existence of 'semi-feudal production relations'.<sup>23</sup> Like Eastern Uttar Pradesh, and Orissa, agricultural labourer as bonded labour are under the clutches of moneylenders in Bihar.<sup>24</sup> In such a set-up, the flow of funds into rural areas in the name of development are mostly usurped by rural oligarchy in collusion with the state functionaries and the bureaucracy. This is widespread in Bihar, M.P, Orissa and Eastern Uttar Pradesh where semi-feudal relations are strong.<sup>25</sup>

The relative position of Bihar agriculture, after the introduction of the Green Revolution, is not very good in national agriculture. Bihar is one of the regions known for the cultivation of rice in India. It has the largest area under rice cultivation in India. By 1970 it covered more than 17 percent of the national rice area. Bihar was 2nd in wheat cultivation in respect of area, after M.P. It covered 12 percent of the total national area. Maize accounted for 30.16 percent of the national area.<sup>26</sup>

By 1970 Bihar accounted for only 8 per cent of total foodgrains in India and ranked 3rd after

U.P ( 18 percent), and M.P ( 10 percent). The position of the state in rice's output is third after West Bengal and Tamil Nadu. It produced 11.39 percent of the total national output of rice in 1970-71. The state ranks 4th in the country's output of maize after U.P, M.P and Maharashtra. It produces nearly 6 percent of national output of wheat as it is clear from table-8.

Table- 8

Share of Bihar's output of major crops in India in 1969-70

crop	percentage share of Bihar to total national output of crops
Rice	11.39
Wheat	5.97
Maize	15.26
Millet	5.94
Barley	6.14
Grain	2.83
Foodgrain	8.00

Source: Directorate of Statistics and Economics, Ministry of Agriculture, 1969-70, New Delhi.

Average yield of Maize per hectare in Bihar is 1142 Kg which is much lower than obtained in Punjab

and Rajasthan. Sugarcane is one of the major crops in Bihar. The average yield of sugarcane per hectare is only 3,434 Kg whereas it is 9,554 Kg per hectare in Mysore, 8659 Kg P/hect in Tamil Nadu, 7177 Kg per hectare in Maharashtra and 6599 Kg per hectare in Andhra Pradesh.<sup>27</sup>

Bihar has largest acreage under jute crop in India. But its yield per hectare is as low as 949 Kg whereas other states of India have higher levels of jute yield.<sup>28</sup> Our analysis shows the extent of backwardness in agricultural sector, in comparison to other states, Bihar's performance is not good.

Table - 9

Some Indicators for Bihar and Punjab agriculture

State	Kg/hect yield of food grain	% of GIA/ GCA	% HYV area under 5 major crops	% coverage of rural population by agricul- tural credit agency
Bihar	857	26.1	10.8	26.7
Punjab	1934	76.5	50.1	65.9

Sources:- Fertiliser statistics, FAI, 1975-76.

The data presented in the Table -9 highlights the fact that Bihar agriculture is backward in comparison to Punjab's agricultural sector. The percentage of gross irrigated area over gross cropped area in Bihar is 26.1 while it is 76.5 in Punjab.

The government had hoped that the Green Revolution would trickle down to the rural poor but this hope has been belied. Even government sources had to admit that the landlords with a holding of 24 acres or more has turned out to be the major beneficiary of the Green Revolution in Bihar. The ryots with insecure rights in land, share-croppers under ryot and agricultural labourers could simply derive no benefits.<sup>29</sup>

Due to proletarianization the number of agricultural labourers<sup>increased</sup> from 23 percent in 1961 to 39 percent in 1971.<sup>30</sup> In 1981 they accounted for 35.50 percent of the total population of main workers of Bihar while for India as whole corresponding share was only 24.94 percent. The percentage share was highest in west Champaran (51.35), followed by Purnia (51.33) and Katihar (49.47)<sup>31</sup>

In Bihar, new technology has not increased wages as contrary to Punjab, Haryana and Kerala.



The low level of wage rate in Bihar is due to contract and bond between the landlord and the direct producer on inequal terms. Table - 10 briefs daily agricultural wages for labour.

Table - 10

Daily agricultural wages for Male labour, 1980 - 81.

States	Month and year	wage rate for ploughing (Rs)
Bihar	Nov 1980	5.25
Haryana	Aug 1980	12.00
Kerala	Dec 1981	15.00
Madhya Pradesh	Jan 1981	3.50
Orissa	Sept 1980	5.00
Punjab	Jan 1981	11.00
U.P	Feb 1981	10.00
Tamil Nadu	Jan 1981	6.00

Source :- Gobinda C.Mandal, Technology, Growth and welfare in Indian Agriculture, Agricole Publishing Academy, 1989, P.86.

The table shows low wage rate in Bihar as compared to other states except Orissa.

Collecting data from nine villages belonging to Saran, Siwans and Gopalhanj district, Hari-har Bhakta concludes that direct producers have not succeeded in raising their wages rates in tune with the productivity in precapitalist semi-feudal production relations because they are under an indissoluble bond of landlord-cultivators and victims of socio-economic coercion.<sup>32</sup>

As G. Shah observes: "Agricultural labourers get their wage in kind or in cash at the rate of Rs.1 or Rs.1.50 per day.

During the stock season, when they are forced to live near starvation line, the land holder lend them money at high rates of interests and keep them under their subjugation".<sup>33</sup> Moneylenders and landlords get all sorts of official patronage and encouragement in their oppression and exploitation of agricultural labourers and poor peasants. This is obvious from the prevalence of the exploitative system of "saunkia", a form of bonded slavery. In his survey Father Saupkin observes: "In the saunkia system as practised here, if a man takes a loan of any amount, he will have to work for the money-lender as and when required till the loan is paid back. He gets a morning breakfast, a mid-day meal and two (kachchi seers (2½ lbs) of paddy,

maize or dal ..... To further intimidate these poor people, if they absent themselves from work for any reason, be it sickness, marriage or visiting a relative, they incur a debt of Rs.2 for every day they are absent."<sup>34</sup>

This exploitative system is not only confined to Palamu district, but to Bihar as a whole.

Commenting on Green Revolution in Bihar, Ladejinsky observes that the existing institutional credit arrangements has a well known bias in favour of big landlords. He finds the state of the cooperative credit societies very poor. The predominant role of the moneylenders providing loans at usurious interest rate and the insecure position of the tenantry, according to him, debar the participation of the vast majority of the cultivators from new package of practices. The Green Revolution introduced in Bihar is limited as compared to Punjab and Haryana. It has adversely affected poor peasants, sharecroppers and agricultural labourers. The sharecroppers neither gain materially from the Green Revolution nor are they more secure on the plots they cultivate. They are worse-off because ownership of improved land is coming to be prized very highly. There is mounting determination among owners not to permit the tenants to share in the rights of the land they cultivate.<sup>35</sup> One of the consequences

of the Green Revolution is the weakening still further of their already very tenuous hold on land. Wages have doubled in the past few years in Kosi area, but very little it can be attributed to the new technology, the principal cause is the rise in the cost of living.<sup>36</sup>

Taking into account the lack of alternative and supplementary occupations, he argues that the conditions of farm labourers is comparable only with the very worst prevailing anywhere in the country.<sup>37</sup> The socio-economic condition of Bihar depends upon its so-called representatives of the people. Bihar has been reduced to a den of corrupt officials, politicians and landlords-cum-money-lenders.<sup>38</sup> Like Punjab or any place where the Green Revolution has been introduced, the benefits are bound to be unevenly distributed in Bihar. Comparing Bihar and Punjab, Ladejinsky states that the economic polarization between 'haves' and 'have not' in Punjab is sharper than Kosi but the overall level of living of all classes in Punjab is higher than Kosi. The primary cause of the accentuated imbalance in the countryside, according to him, are man made institutional inequities.<sup>39</sup>

Conducting his survey in 4 villages of Saran,

G.Ojha concludes "In race for technological improvements the substantial farmers are making better gains and the gap between the big and the small is widening. This is the dark shadow of the Green Revolution."<sup>40</sup> The new technology has only favoured the big landholders. It is worth pointing out that in spite of small farmers adopting the HYV seeds, fertilisers accounts for the major out of pocket expenditure as compared with ordinary variety. This situation left the farmers with no choice but to adopt lower level of technology than recommended for HYV which affected the return on farm adversely.<sup>41</sup> The disparity between the lower and the higher size group of farms is observed only in terms of resources before 60's. After the introduction of the new technology, the disparity between them is reflected not only in terms of resources and its use but also in terms of net return. Poor peasants and landless agricultural labourers have been debarred from sharing the profit of the new technology.<sup>42</sup>

The well-off sections of occupancy ryots have taken benefit of whole policy of the government in Bihar. They have consolidated themselves as middle and rich peasants. These occupancy ryots once constituted the leading core of the old kisan sabha movements<sup>43</sup> but

now they are aggressive and inflicting damage to lower sections. This has been characterized by A.N.Das as "backward caste phenomenon" in Bihar.<sup>44</sup> The newly emerged rich peasants behave like a kulak lobby in politics and are entrenched in state politics. They have taken benefit of reservation policy introduced by the Janta government headed by Karpoori Thakur. By observing change in political economy of Bihar, Harry W.Blair further states that that 'forward' or 'twice born' caste groups, that had been dominant in Bihar since colonial period, are being replaced by the backward castes as the dominant stratum in the state.<sup>45</sup>

Evaluating the entire process of the rural development strategy, the working group observes: "a retired civil servant was cultivating more than 1500 acres with his own tractors.... with the concentration of land in a few hands it was only meritable and natural that all the benefits of the developmental activities of AVRDC .... would accrue only to the big landowners..... we had definite evidence to indicate that at Musahari the bread already had gone to the rural rich."<sup>46</sup>

Even after 50 years of independence, the landlords of Bihar possess considerable amount of land.

As M.Mitra and Vijayendra states: "Sahu Parbatta is such a case in Purnia..... He is supposed to have some 39,000 acres."<sup>47</sup> The possession of no less than 1000 acres of land by 41 big landlords in Purnia district is believed. Apart from them, detailed account of land possession are: Betia Raja : 201000 acres, Faiz Alam : 15,000 acres, Baidya Nath Chauhan : 15,000 adres, Kapil Kumar : 10,000 acres, Raja of Ram Nagar : 10,000 acres, D.K.Sikarpur : 9,000 acres, Islam Seikh : 8,000 acres, Dumania estate: 6000 acres. Besides this, Mahanta of Bodh Gaya controls 18,000 acres of land of which nearly 5000 acres are located in Bodh Gaya.<sup>48</sup>

In short, the whole package of Green Revolution has gone into pocket of these big landlords and kulak type farmers.

Notes and References

1. Bihar Through Figures, Directorate of Statistics and Evaluation, Government of Bihar, 1972, P.26.
  2. Estimate of State income, 1948 - 49 to 1966 - 67, Directorate of Statistics and Evaluation, Planning Department, Government of Bihar, P.27.
  3. G.Ojha, Land Problem and Land Reforms: A study with Reference to Bihar, Sultan Chand and Sons, New Delhi, P.35.  
For total failure of this act, also see.
    - The Famine Enquiry Commission, Final Report, 1945.
    - F.T.Jannuzi, Agrarian crisis in India, the case of Bihar, Sangham Books, New Delhi.
    - A.N.Das, Agrarian unrest and Socio-economic change in Bihar, 1900-1980, T.Manohar, New Delhi, 1983.
  4. Quoted in A.N.Das, OP. Cit, PP.201-202.
  5. G.Ojha, OP. Cit, PP.285-288.
  6. Wolf Ladjinsky, Agrarian Reform: An Unfinished Business, OUP, London, 1977.  
A.R.Pandey, "Tenancy Reforms for the share-croppers and Homeless Tenants in Bihar", Social Science Probyn, March 1986.
- G.Ojha, OP. Cit.  
A.N.Das, OP.Cit.  
D.Bandopadhyay, "Agrarian Relations in two Bihar Districts", Mainstream, Vol.III, No.40, 1973.



- B.N.Verma, and P.R.Mishra, "Subsistence Tenancy in a backward agrarian setting: a case study of North Bihar", Social Scientist, Vol.12, issue 135.
7. D.Bandopadhyay, OP.cit.
8. V.Bhave, "Bhoodan Yagna", in (ed), A.R.Desai, Rural Sociology in India, Bombay, Popular Prakashan, 1959, P.634.
9. Vinoba Bhave, Bhoodan Yagna, Ahmedabad, 1953, P.114.
- 10.H.Tennyson, India's Walking Saint; The story of Vinoba Bhave, New York, 1955, P.141.
- 11.D.Thorner, "Bhoodan: its Evaluation", in (ed), A.R.Desai, OP. cit, PP.633-34.
12. A.N.Das, OP. cit, P.207.
13. F.T.Jannuzi, OP.cit, P.102 and also see P.126.
14. (ed) Sachidanand, Sarvodaya and Development: Multi Disciplinary perspective from Musahari, Patna.
- 15.L.P.Singh, "Sarvodaya Movement in Musahari", Mainstream, 23 Feb. 1973.
16. D.Thorner, "Bhoodan: Its Evaluation", in (ed) A.R.Desai, OP.cit, P.633.

17. A.N. Das, OP. cit, P.216.
18. H.D. Davis, Chapter on Introduction in the Development of Agriculture in Spain, IBRD and FAO, Washington, 1966, p.1.
19. V. Mishra, OP. cit, P.6.
20. A.N. Sandhu and R.K. Mahajan, OP. cit, P-43.
21. Tirupati Rao Naidu, "Trends in Farm Mechanization", "Indian Journal of Agricultural Economics" Oct.-Dec. , 77, pp.107-111.
22. Ibid.
23. H.P. Pradhan, "Institutional Reforms and Agricultural Growth", Social Scientist, OP. cit.
24. T.G. Jacob, OP. cit, P.121.
25. H.P. Pradhan, OP. cit.
26. Directorate of Statistics and Economics, Ministry of Agriculture, 1969-70, New Delhi.
27. Fertiliser Statistics, 1969-70, FAI, New Delhi.
28. Ibid.
29. V. Mishra, OP. cit, PP. 45-46.
30. G.Shah, "Protest Movement in two Indian States, a study of Gujrat and Bihar Movements Delhi, Ajanta Publication, 1977, p.69.
31. V. Mishra OP. cit, PP. 44-46.
32. H. Bhakta "Production Relations and Spetial Variation in Agricultural Wage Rates", Social Scientist, Vol.8, No.10, May, 1980.
33. G. Shah, OP, cit, P. 69.
34. Quoted in JP' Real Mission, EPW , Vol. X, No.12, March 22, 1975.
35. W. Ladejinsky, "Green Reveloution in Bihar, the Kusi Area: A Field Trip", EPW, Vol.IV, No.39, Sept.27,1969.

36. Ibid.
37. Ibid.
38. "JP'S Real Mission ", EPW , OP. cit.
39. W. Ladejinsky, OP. cit.
40. G. Ojha " Small Farmers and HYV Programme", EPW, 14 April, 1970.
41. Ibid.
42. Ibid.
43. V. Mishra, OP. cit, P-46.
44. A.N. Das, OP. cit, PP.15.
45. H.W. Blair, "Rising Kulaks and Backword Classes in Bihar,  
Social change in the late 1970'S "EPW, Vol.XV,  
No.21, Jan.12, 1980.
46. D. Bandopadhyay, OP. cit.
47. M. Mitra, and Vijayendra, "Agricultural labourer and Pensant  
Politics, Rural Proletarianijation  
in Purnia", in (ed) A.N. Das,  
Agrarian Movement in India, Studies  
on 20th Century Bihar, Frankcass  
Great Britain, P. 98.
48. V. Mishra OP. cit, PP. 39-40.

CHAPTER IV

AGRARIAN TRANSFORMATION IN

TWO DISTRICTS OF BIHAR

The Present District of Bhojpur consists of areas under Arrah, Sadar and Buxar sub-divisions of the old Shahabad district.<sup>1</sup> The district is bounded on the north by the districts of Saran and Ballia district of Uttar Pradesh on the south by the district of Rohtas, on the west by the districts of Ghazipur and Ballia of Uttar Pradesh, on the east by the districts of Patna and Gaya.

Bhojpur district has a close linkage with that of its parent district of Shahabad which has an old and interesting history.

Bhojpur district consists of two sub-divisions, viz, Arrah Sadar and Buxar comprising 19 developmental block stretching over an area of 4,098.0 square kilometers. The entire strip of land between the river Ganges on the north and the main lines of the eastern Railway on the South is a low lying alluvial plain. It receives deposits of silt from the Ganges almost every year and is extremely fertile. In fact, this region is considered to be the best wheat-growing area in the state. To the south of this tract, the second natural divisions. This also consists of alluvial soil and is naturally fertile. But the soil becomes harder as one proceeds south ward.

The District has rivers running almost throughout its Perimeter. The Ganges forms the northern boundary of the district. The river Karmanasa joins the Ganges near Chausa. The low-lying rich alluvial plains in the north-eastern end owe their fertility to the river Ganges. The rivers Konch, Ganghat, Chher and Banas all fall into the Ganges. The son in another important river in the district. The son enter the district at the trijunction of Palamau, Mirzapur and Bhojpur districts. It runs along the Southern

and eastern boundaries of the districts. Until it merges into the river Ganges near Maner in Patna district.

#### Climatic Conditions

The Climate of the district is of moderately extreme type. The hot weather begins about the middle of March, when hot westerly winds begin to blow during the day. The months of April and May are extremely hot. In a normal year the monsoon sets in by the third week of June and the rains continue with intermissions till about the end of September. The cold weather begins from the month of November and lasts till the beginning of March.

#### Rainfall

Rains set in sometime in June accompanied by a fall in temperature and increase in humidity. The district experiences maximum rains during the months of July and August. The average rainfall, in normal conditions, recorded in these months are in the proximity of 300 mm. The district gets easterly winds from June to September which brings rains. From October the direction of the winds is recovered and westerly winds blow till May. There is slight rainfall in October, but November and December are quite dry. Some winter rain occurs in January and February.

#### Forests

The 1961 district census hand book<sup>2</sup> of Shahabad describes the flora and Fauna of the district in the following manner,

"The district was previously full of forests. It<sup>15</sup> said that name "Arrah" is contortion of the word 'aranya' which, in Sanskrit, means jungle. The forests, it seems, suffered considerable damage during the years 1759-1765 when the district was frequently overrun by contesting Mughal armies ..... During the visit of Francis

Buchanan in the year 1812-1813 the area covered by forests had gone down to nearly 22% of the total area of the district. In the recent past, the forest suffered again during the period of Zamindari abolition. Afforestation had been taken to increase the forest area. The forests of the district are not rich in their products. Firewood is the most important among its product."

#### Irrigation facilities

The rivers Sone and Ganges are the perennial sources of surface water. They can provide irrigation to major portion of agricultural lands.

The district Gazetteer of Shahabad (1966) mentions as follows:

"The agricultural prosperity of the district depended on artificial irrigation, without which many tracts would be uncultivated, and the land would be unable to grow sufficient food crops to sustain its population. The three great sources of irrigation were artificial reservoirs, wells and the Sone canals all of which helped to supplement the natural supply of waters to compensate for its inadequacy or untimely distribution. ----- The source of artificial irrigation mentioned so far, however, are of minor importance as compared to the Sone canal system which has been the most important source of irrigation in the district from the year it was constructed. .... the remodelled Sone canal system was likely to irrigate an additional area of about 1.7 lakhs acres of Kharif, 40 thousand acres of rabi and 1 lakh acres of hot weather crops with the Sone command".

### Land use pattern

In this district both the irrigated and unirrigated areas excepting the hills and forests are being exploited for cultivation. Intensive agriculture is also being attempted.

Rice, wheat, barley, grams and pulses are the main crops of the district. The winter rice forms the greater part of this crop. Prior to the introduction of the package programme, about 58% of the geographical area in the district had been brought under the plough. Because of good irrigation facilities and ample rainfall, as much as 65% of the net area sown was double cropped. Tanks account for 25% and wells for 12%.

### Purnia District

The district of Purnia lies in the north-eastern part of Bihar State. After the formation of Katihar district in year 1973 as a result of reorganization of districts in the state, Purnia district now has three subdivisions viz, Purnia Sadar, Araria and Kishanganj and 27 C.D. Blocks - cum - Anchals.

The district is bounded on the north by Nepal and portions of Darjeeling district of West Bengal, on the South by the districts of Katihar, on the east by the district of west Dinajpur of West Bengal and on the West by Saharsa district. Purnia town is the district headquarters and principal town of the district.

### Natural Divisions

The district of Purnia comprises the eastern most part of the alluvial North Bihar Plain. Within the district exist three broad natural divisions. The first consists of the area to the west of the old bed of the Kosi river, comprising the area



to the west of Purnia town. This division is constituted largely of the old beds of the Kosi and laden with sand. With the implementation of the Kosi project, however, the area has come under the canal command area. The second natural division consists of the fertile plains to the east of the old bed of the Kosi river and includes the alluvial plain along the Ganges towards the south of the district and the Mahananda in the east. The third natural division is comprised of small hilly areas lying along the northern border of the district with Nepal.

The Ganges and Mahananda are the important rivers flowing through the district. However, the river which has left its devastating impact on the district is Kosi. It formerly flowed through the district from north to south dividing it into two parts. The course of the river shifted Westwards and for some time it constituted the boundary between Purnia and Saharsa districts.

#### Climatic Conditions

The district has a most humid climate. The winter season commences in October and lasts till February. January is the coldest month with the average normal minimum temperature of about 9 degree C. March to mid-June form the summer months. Monsoon set in the second half of June and lasts till September. Purnia receives higher rainfall than other district of the state, the average annual rainfall being 1,699.0 mm. Eighty percent of the total rainfall is recorded during the monsoon period.

### Flora and Forest

The district had only 1,044 hectares of forest in 1981. Teak, Sal, Sakhua, Sheesham, Palas, Pipal and Senal trees are still found. With the disappearance of forests, however, wild life has all but disappeared from the district.

### Land use Pattern

The major part of Purnia district is covered by non-calcareous, non-saline soil of recent alluvium formation, the soil is of low to medium fertility. Paddy, wheat, and Jute are the important crops. The different soils of the district are as follows:

- (i) Karari and Matiar - Clayey Soil,
- (ii) Doas or Mansimati - loamy soil and
- (iii) Baluar - Sandy Soil

### Irrigation facilities

It is one of the districts which did without much of artificial irrigational facilities. The need of a systematic irrigation had not been felt before because ordinarily the rainfall was ample and the soil in the most parts retained moisture, and the large number of rivers, rivulets, and marshes assured facility of water. The gigantic Kosi project has resulted in extension of irrigational facilities in the district. In addition to this, various irrigational facilities have been provided in the district.

### Livestock

It is very important in the district. Cattle are an important article of stock but the one which are generally available are not of superior breed and are generally small. The cattle are not well-fed hence the average milk yield of cows

and buffaloes is quite low.

The district of Bhojpur, with a population of 2,407,600 persons is divided into 19 community developmental blocks consisting of 1,799 inhabited villages and 8 towns ; comprising 3.44% of the total population of the State, the district ranks 11th in the state in order of population.

Purnia district, with a population of 3,595,707 persons is divided into 27 community development blocks consisting of 2,497 inhabited villages and 9 towns. With 5.14 percent of the total population of the state, Purnia ranks 2nd in the state in order of population.

Both Purnia and Bhojpur district appears to have not felt the impact of urbanization since 92.02% and 89.28% of the population lives in the villages. The total urban population is of the order of 7.98% of the population of Purnia district against Bhojpur break-up of Urban Population 10.72%.

It would appear that rise in the population of the district of Purnia during the 1971-81 decade has been of the order of 28.20 percent which is more than the decadal growth rate of the state and Bhojpur district. In Purnia district, the rural population has increased by 25.58% over the decade while the urban population growth has been as much as 68.77%. Bhojpur district has witnessed rural and urban population growth rate in the order of 17.81 % and 51.35% respectively.

TABLE - 1

Decadal change in distribution  
of Population.

<u>District</u>	<u>1971</u>			<u>1981</u>			<u>% decadal change (1971-81) Variation</u>		
	<u>Total</u>	<u>Rural</u>	<u>Urban</u>	<u>Total</u>	<u>Rural</u>	<u>Urban</u>	<u>Total</u>	<u>Rural</u>	<u>Urban</u>
Bhojpur	1,995,146	1,824,575	1,70,571	2407600	2149443	258157	20.67	17.81	51.35
Purnia	2,804,869	2,634,946	1,69,923	3595707	3308921	286768	28.20	25.58	68.77

Source : District Census Hand Book

TABLE - II

<u>District</u>	<u>Density of population Per Sq.Km</u>	<u>Sex Ratio no.of females per 1000 males</u>	<u>Literacy rate</u>		<u>Females</u>
			<u>Persons</u>	<u>Males</u>	
Bhojpur	588	944	31.35	46.68	15.12
Purnia	453	925	19.27	28.41	9.39

Source : District Census Hand Book

The data presented in the table 2 highlight the fact that area covered by the district of Purnia is more than Bhojpur district but sex ratio of 944 in Bhojpur district is more than Purnia district (925). It would be seen from the table that literacy rates, in Bhojpur district, has been of the order of 31.35% which is more than the literacy rate of 19.27% for the district of Purnia. Even Bhojpur district's literacy rate is more than the literacy rate of 26.20 for the state.

TABLE - 3

District	<u>Proportion of Scheduled Castes/ ST population to total population, 1981.</u>			<u>Scheduled Tribes</u>		
	<u>SC</u> Persons	Males	Females	Persons	Males	Females
Bhojpur	14.52	14.51	14.53	0.26	0.27	0.25
Purnia	12.16	11.96	12.37	3.15	3.11	3.20
Bihar	14.51	14.36	14.67	8.31	8.11	8.52

Source: District census Hand Book

It is discernible from the table that proportion of Scheduled castes to total population accounts 14.52% as against 12.16% for the district of Purnia, but in case of Scheduled Tribes, Purnia district has taken lead over Bhojpur district. In Bhojpur district only 0.26% of the population to total population are scheduled Tribes whose proportion is less than proportion of ST in Purnia district (3.15%)

<u>District</u>	Total area (hectares)	% of cultivable area to total area	% of irrigated area cultivable to total area	Net Sown Area
Bhojpur	35557239	88.87	62.87	
Purnia	76068861	83.43	19.48	

Source: District census Hand Book, 1981

It would be seen from the table that 88.87% of the total area of Bhojpur district is utilised for cultivation and of this 62.84% area is irrigated which is more than Purnia district. It indicates that there are large number of area in Purnia district which are deprived of the requirement irrigational facilities inspite of potentiality for cultivation.

It would appear from the table 5 that Bhojpur district has taken lend over Purnia district in the field of different amenities except communication.

Agrarian Economy of two  
Districts prior to introduction  
of the New Technology.

Here an attempt has been made to analyse, prior to the introduction of the package programme, agrarian economy of Bhojpur and Purnia districts. We also have tried to discuss growth trends in agricultural sector. The analysis on these two districts has been given separately and then a comparison has been attempted.

Case of Bhojpur District

Prior to the introduction of the package programme, about 58% of the geographical area in the district had been brought under the plough. Because of good irrigation facilities and ample rain-

TABLE - 5

Proportion of rural population served  
by different amenities, 1981.

<u>District</u>	Proportion of rural population served by the amenity of							
	Education	Medical	Drinking Water	P & T	Market	Communi- nicati- on.	Approach by Road	Power supply
Bhojpur	91.0	40.11	100.00	47.87	19.10	27.05	24.70	50.24
Purnia	88.75	28.25	100.00	35.04	32.77	24.83	30.61	17.15

Source : District census Hand Book

TABLE - 6

Break up of main workers  
1981

<u>District</u>	Cultivators			Agricultural labourer			Household Industry			Other Workers		
	P	M	F	P	M	F	P	M	F	P	M	F
Bhojpur	41.87	45.28	12.23	37.19	32.83	75.03	2.41	2.28	3.60	18.53	19.61	9.14
Purnia	36.27	41.41	9.10	51.35	44.87	85.61	1.36	1.21	2.11	11.02	12.51	3.18

Source : District census Hand Book

fall, as much as 65 percent of the net area sown was double cropped. Gross irrigated area as percentage of gross cropped area was 44 percent (average) between 1957 to 60. canals were the most important source of irrigation and accounted for 50 percent of the irrigated area. Tanks accounted for 25 percent and wells for 12 percent. The whole picture would be clear from Annexure - 1 which gives land utilization data for the three years 1957-58 to 1959-60.

The per capita availability of land in the district declined from 1.03 acres in 1951 to 0.87 acres in 1961. Shahabad district was much better-off in regard to availability of agricultural holding. Even in regard to intensity of cropping, the index for Shahabad district was 1.7. This was because the proportion of gross irrigated area to net area sown was very high in this district. No other districts in Bihar had a higher intensity of cropping. <sup>4</sup>

In Shahabad district, every 100 acres of net area sown provided employment to 35 cultivators, 17 agricultural labourers in 1961. Thus this district was better off in the matter of pressure of population on land. The daily wages of agricultural labourers decreased from Rs.1.56 in 1951 to Rs.1.07 in 1961. <sup>5</sup>

Foodgrain accounted for about 90 percent of the gross cropped area including 41 percent under rice, 24 percent under pulses, 11 percent under gram and 11 percent under wheat. Among commercial crops, oil seeds occupied about 2.4 percent of the gross cropped area and sugarcane about 1.2 percent. During the period 1957 to 1960, production of cereals averaged about 5.33



Lakh tonnes per annum, comprising 4.26 lakh tonnes of rice 10.75 lakh tonnes of wheat. As it is obvious from data given in Annexure - 2. The average yield per acre (Rice) in maund was 3.85 in 1955-56 while in case of wheat it was 4.80. <sup>6</sup>

The results of the Agro-Economic Survey show that the Chemical fertiliser and manures were used more widely during Kharif than during rabi season and their use was prevalent more or less to same extent in the various size groups of holdings. In 1961-62 while about 72 percent of cultivators used fertiliser or manures during Kharif season, only 20 percent used them during rabi season. Its report noticed that green manuring was not practised by the cultivators. <sup>8</sup>

About 50 percent of rice and 16 percent of wheat acreages were treated with fertilisers in 1961-62. The actual rates of application remained less than the dosages recommended under the programme. It was estimated that about 80.3 percent of the supply of nitrogenous fertiliser was used for paddy, 4 percent for wheat. Three fourths of Phosphatic fertilisers were used for paddy crop in 1961-62. <sup>9</sup>

Crop cutting experiments were conducted for assessing the impact on yield rates. From 10.8 quintals per hectare during 1960-61, the yield rate of rice rose to 12.9 quintals per hectare during 1961-62, arise of 0.19 percent. This was an increase of

a substantial order and might be attributed partly to favourable weather conditions and partly efforts made under the programme. During 1962-63, there was decline in yield rate which was reported to be due to unfavourable weather conditions. However, the yield rate in 1967-68 was higher than that during 1960-61.<sup>10</sup> Both in irrigated and unirrigated fields, good response to fertiliser consumption was observed. The application of fertiliser in irrigated paddy fields was found to raise yields by 44 percent as compared to fields not treated with fertilisers. A similar trend was observed in respect of wheat. The results obtained were consistent during the two years 1961-62 and 1962-63, which highlights the importance of fertilisers in raising yields. The impact of improved seeds on yields had not been such. During 1961-62, 19 percent of the paddy fields were reported to have been sown with improved seeds, but the proportion during 1962-63 was lower.<sup>11</sup>

It is evident from the data given that prior to introduction of Green Revolution, level of commercialization was low, and very few cash crops were cultivated. Most farmers practised subsistence agriculture. But after introduction of package programme, the agriculture sector of Shahabad district (Bhojpur district was part of Shahabad district), as we shall see, underwent a change.

#### Case of Purnia

According to 1961 census, out of a total area of 27.03 lakh acres, the cultivated area (consisting of net area sown and current fallows) was 19.86 lakh acres or about 73.5

percent of the total area of Purnia district. This represented a decrease of 1.82 lakh acres over the cultivated area in 1951. An additional area of about 70,000 acres was put under non-agricultural uses. This seems to be partly the reason for the decrease in the cultivated area in 1961. <sup>12</sup>

The per capita availability of land in the district declined from 1.39 acres in 1951 to 0.88 in 1961 which was lower than the corresponding state average of 0.92 acre in 1961. The agricultural holding per capita in Purnia district in 1961 was however, 0.50 acres compared to 0.43 acres for the state. It was 0.75 acre in 1951. The average size of agricultural holding per cultivating household was 7.75 acres in Purnia district as against 4.85 acres for the state. Thus Purnia district was better off in regard to availability of agricultural land. Even in regard to intensity of cropping was 1.5 as against 1.7 for Shahabad district. <sup>13</sup>

Rice accounted for 49.5 percent of the gross area sown. Wheat covered 4.7 percent and sugarcane a mere 0.1 percent of the area. Non-food crops accounted for 21.6 percent, more than three-fourths of which was covered by Jute and other fibres. <sup>14</sup>

The small part of Purnia district was irrigated by Canals, Tanks and Tube Wells between 1951 to 1961. Thus we find neglect of irrigation in the district. The average yield per acre of Rice was 4.60 Maund in 1954-55 while in case of wheat, It was 5.75 Maund in 1955-56. <sup>15</sup>

Thus we can say that in agriculture, Purnia district was backward. Comparatively Shahabad district was better off even prior to the introduction of the new programme.

Agrarian Transformation in two districts : Bhojpur and Purnia.

We wish to emphasize at the outset itself that agrarian transformation would be analysed to the extent possible both as an aspect of agricultural development and social change. Here an attempt has been made to gauge the extent of development that has taken place in agricultural sector of these two districts. The agrarian economy of these two districts, after Green Revolution, has been depicted.

Bhojpur Districts, Bihar

Agricultural Land - Use: It is discernible from Annexure 3 that net sown area increased from 575031 acres in 1960-61 to 813787 acres in 1980-81. In other words, it increased by 1.4 times between 1960-61 to 1980-81. The Index of net sown area was maximum in 1978-79 and minimum in 1974-75. The increment in net Sown area highlights the fact that more agricultural land is being cultivated. Although there are some fluctuations in growth of cultivated area from year to year, but these fluctuations are not on a large scale. Increasing pressure of population on land might have caused reclamation of yet not cultivated but cultivable land for agricultural purpose.

It would be seen from Annexure-3 that gross cropped area increased from 977786 acre in 1960-61 to 1148242 acre in 1980-81 i.e. an increase of 1.17 times during the same period. The

Gross cropped area was highest in 1975-76. From 1960-61 to 1975-76, the gross cropped area increased rapidly and this suggests the arrival of the Green Revolution. But after 1975-76 there occurred a decline in gross cropped area and reached its minimum in 1980-81. It reflects the fluctuating nature and dependence of agriculture on the monsoon. It may be added that infrastructural facilities made available through Green Revolution were yet not stabilized. Such factors as flood, ineffective drainage and waterlogging can also be seen as contributing to yearwise fluctuations in the pattern of gross cropped area.

With the introduction of intensive Agricultural District Programme (IADP) in Bhojpur district cropping intensity increased rapidly. During 1960-61, the index of cropping intensity was 1.7 as against 1.5 for Purnia. The average index for Bihar during the same period was 1.38. The index for Bhojpur reached 1.4 in 1973-74 and has remained almost constant since then. The overall trend shows that both extensive and intensive cultivation are practised. The cropping intensity is less because net area sown increased in proportion to gross cropped area. In 1980-81, the Index of intensity of cropping is 1.39 which shows that new technology has not made any marked impact on the transformation of agricultural sector.

#### Irrigation Infrastructure

The district of Bhojpur has an elaborate system of canals branches and tributaries. The net irrigated area in 1965-66 was 365435 acre which increased to 638395 acre in 1980-81 i.e. 1.7 times increased over a period of 16 years. The proportion of net irrigated area to the total cropped area was maximum in 1978-79. However no much progress in irrigation is visible

since 1975-76. Some variations are noticed from year to year and this may be due to seasonal factors.

The gross irrigated area increased 1.8 times between 1960-61 to 1980-81 as it is discernible from Annexure-4. The gross irrigated area in 1960-61 was 429006 acres which went up to 781581 acres in 1980-81. From 1960-61 to 1978-79, the gross irrigated area had been continuously increasing. The continuous increment in gross irrigated area shows an intensive utilization of irrigation facilities, going through data given in Annexure-4 some fluctuations are noticed and this may be due to seasonal factors such as monsoon and flood.

Area under High Yielding variety of rice and wheat shows wide variations from year to year. Thus area (HYV) of rice declined from 252125 acres in 1974-75 to 119460 in 1976-77. It was also lowest in 7 years i.e. between 1974 to 1981. However, after 1976-77, area under HYV (Rice) kept on continuously increasing. This might have been result of continuous good monsoon coupled with modest increase in the artificial irrigation facility. In fact, area under HYV (Rice) increased by 0.88 times between 1974-75 to 1980-81. On the whole there appears no significant change which can be considered as a solid causative factor in the process of agrarian transformation.

In case of wheat, no such fluctuations are noticed. Area under HYV (Wheat) has been continuously increasing over the years.

Excepting for 1975-76, area under HYV (Wheat) shows continuous increasing trend. It increased by 1.11 times during the period 1974-75 to 1980-81. This may be primarily because of the fact that wheat is less dependent on monsoon and being a rabi crop, it is almost free from the vagaries of flood. It is also discernible from Annexure 4 that the extension of area under HYV (Wheat) has been continuous but slow and steady after mid seventies.

#### Modernization of Agriculture

**Fertiliser:** organic manure and chemical fertilisers are crucial inputs in agricultural production. These help in providing the nutrients to the soil and plant growth various attempts were made in this regard in 1960 through IADP and in the 1966 in the HYV Programme. Both these programmes increased the importance of fertilisers phenomenally. It is due to this fact that the HYV require necessary nutrient, which soil reserve and natural recuperative process can hardly provide with.

The total fertiliser consumption (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) has increased 24 times between 1960-61 to 1980-81. In 1978-79 the fertiliser consumption was maximum i.e. 14.59 Kg/acre of agricultural land. In 1979-80, it came down to 12.28 Kg/acre but picked-up again in 1980-81 as it is discernible from Annexure 4. Rapid increase in fertiliser consumption reflects the use of modern technology and mechanization of agriculture. The gross irrigated area is continuously increasing and there has been close relationship between gross irrigated area and fertiliser consumption.

B) Growth of Agricultural Implements and Machinery: the agricultural sector uses implements and machinery as capital. upto early sixties, the growth rate of agricultural implements was rather slow and smooth. But soon after the technological break-through which was brought about by the HYV culture, the number of agricultural implements especially characteristic of capital formation at speedier rate went up substantially.

As the figure shows, there has been tremendous increase in the use of oil engines. The use of oil engine increased by 112 times between 1961 to 1982. But after 1977, Spectacular increase in the use of oil engine is noticed for instance it increased 4.7 times during 1977 to 1982. One notices a continuous increase in the use of electric pumps as new agricultural technology from 1956 to 1982. The use of electric pump has increased 124 times between 1956 to 1982. The pace of development from 1956 to 1972 has been very fast. The number of electric Pumps declined from 3300 in 1972 to 2770 in 1977 which again picked-up to 3620 in 1982. Tractors is being increasingly used in agricultural sector. The use of Tractors increased 2.2 times between 1972 to 1982 but 41.7 times between 1956 to 1982 as it would appear from Annexure-6

one scholar has more or less, reached same conclusion as we have made. These date indicate that irrigation, HYV cultivation and mechanization were the most marked manifest-



ations of the capitalist revolution triggered off by the New technology in this sector. S.K. Mishra analysis confirms our conclusion. <sup>16</sup>

#### Irrigation by Different Sources

We have already mentioned that the three great source of irrigation in Bhojpur district were artificial reservoirs, wells and the sone Canals. The importance of Canal as major source of irrigation was recognised by the District Gazeteer of Shahabad district (1966). The data given in Annexure - 5 show the importance of Canal as major source of irrigation. The overell trend shows the modernization and development of sone command area. The use of Tanks as source of irrigation increased upto 77-78, but after that there has been a decline. This was due to the fact that Tube-Well emerged as important source of irrigation. The net area irrigated by Tubewells was maximum in 1975-76 (94224 acres). The contribution of canal and Tube Well is increasing and the contribution of Tanks is decreasing in matter of irrigation as it is also confirmed by studies of S.K. Mishra. <sup>17</sup>

#### Agricultural Output

There has been continous increase in average yield of rice per are over 20 years. The main factors which contributing to the growth in yield have been the intensive use of fertilisers, extension in irrigation facility, use of HYV seeds and use of modern agricultural implements such as tractors, oil engine and threshers. similar trent is noticeable

growth of average yield per acre for wheat as it would be seen from Annexure 4.

The Bhojpur district has taken lead over adjoining districts in average yield quintal per hectare for rice and wheat. It is obvious from the study of Biblab Das-Gupta.<sup>18</sup> For rice, planning commission's Programme evaluation organization studies (PEO) indicate clear monotonic positive relationship between farm size and yield in the case of the new varieties. No clear pattern emerges from the data on Shahabad districts for 1972-73. When all farm size categories are considered together a negative relationship, though weak, emerged which is in direct contrast with the PEO data. Our analysis will be clear from Table - 7.

TABLE -7

Rice: Yield by Farm Size in Shahabad Districts, 1971-72.  
(Kg/hectare)

Farm Size hectares	Local Khariff	HYV Khariff	HYV Summer
0.01-1.00	1,977	3,163	
1.01-2.00	1,636		
2.01-3.00	1,648	2,735	
3.01-4.00	1,480	2,511	2,919
4.01-6.00	1,510	2,382	2,739
6.01-8.00	1,761	2,261	2,950
8.01-10.00	1,441	2,459	
10.01-12.00	1,574	2,337	
Over all	1,587	2,434	2,904

Source : B. Das-Gupta, OP. cit, p.188.

The Data given in Table - 7 also show that HYV (Rice) had taken lead over local (Rice) in matter of productivity by the 1970's

During the 1967-73 period money-wage rate of agricultural labourers increased almost two to two - and- a half times. However, farm prices of agricultural outputs (in Rs. per quintal) increased almost three times or more in the district of Shahabad. Whatsoever the reason may be, the position is that the real wage rate of agricultural labourers and consequently, the real income of agricultural labourers and their dependents declined, while due to increased yield rates and farm prices the income of the landowner class increased substantially. Distribution of income and output among these two classes grew more skewed and concentration increased together with deprivation. <sup>19</sup>

In Bhojpur district, the small cultivator still take land on rent from other categories of cultivators. The study of the distributions of marketable surplus according to different holding size group indicated that about 70 percent of the total marketable surplus was contributed by large holdings while small holdings contributed only 10 percent. The Proportion of contribution by various holding size group to the total marketable surplus was almost in complete agreement with the proportion of area occupied by different holding size-groups in the district. <sup>20</sup>

Distribution of land among landowners has also undergone change. In Shahabad district it may be estimated that in the year 1971 more than 65% of the farmers owned less than

the minimum standard. On the other hand, only 2% of the farmers owned 20% of the total area under cultivation. These farmers were quite well-off. Hence, the farmer class in the district of Shahabad comprised, by the 1970's, three subclasses. The small or marginal farmer class who constitute around 70% of the total farmers, are poor. Big farmers owning 25 acres or more of land constitute around 2% of the total farmers. These farmers are well-to-do. The rest of farmers are of middle category, owning 4 to 24 acres of land and constituting 28% of the total farmers. The distribution of land ownership is skewed and indicates concentration of land under a few ownerships. This trend can be applied to period after 1971. <sup>21</sup>

#### PURNIA DISTRICT

It is discernible from Annexure- 8 that net sown area increased from 1001503 acres in 1960-61 to 1290057 acres in 1980-81. The Index of net area sown was maximum in 1977-78. Like Bhojpur district, the increment in net sown area highlights the fact that more agricultural land is being cultivated. The wide variations are noticed from year to year but this fluctuation is not on a large scale. The data also highlights the fact that area extension growth in agriculture is taking place. It may be due to increase in pressure of population on land.

It would be seen from Annexure 8 that gross cropped area increased from 1523315 acres in 1960-61 to 1895370 acres in 1980-81. The gross cropped area was maximum in 1977-78 and reached to its minimum in 1973-74. Between 1974-75 to 1978-79 the gross cropped area increased rapidly and then it came down in 1979 to 81. The wide variations are noticed from year to year and it might have been caused by flood (because Kosi river floods a part of Purnia district).

In 1960-61 the cropping intensity was 1.52 as against 1.7 for the Bhojpur district but it reached to 1.26 in 1965-66. The average index of cropping intensity between 1960-61 to 80-81 was 1.4 as against 1.5 for Bhojpur district. It declined again from 1.5 in 1960 to 1.332 in 1970-71 and to 1.38 in 1971-72. From 1965 to 74 it remained almost constant and after that it made some progress. The overall trend shows that extensive cultivation is practised in this district. However it can not be dev~~ie~~ed that the trend towards intensiv~~e~~ cultivation is also, to some extent, in sight. The cropping intensity is less because net sown area increased in proportion of gross cropped area.

The net irrigated area increased from 114919 acres in 1970-71 to 171527 acres in 1980-81. In other words, it increased 1.7 times in last 10 years. In 1978-79, net irrigated area was maximum. The overall picture shows that agrarian growth is slowly taking place.

The gross irrigated area increased 20.01 times over last 20 years. However it declined in 1965-66. Between 1960-61 to 1978-79, gross irrigated area had been continuously increasing. This trend shows intensive utilization of irrigation facility. However, some fluctuations are noticed and there may have been caused by seasonal factors.

The area under HYV (Rice) in 1974-75 was 140,829 acres which declined to 93177 acres in 1975-76. However it picked-up

again to 127513 acres in 1980-81. It was lowest in 1976-77 (92017 acres). Our data definitely reflects wide variations from year to year. Such fluctuations might have been caused by unfavourable monsoon and flood. It is apparent from the data presented in Annexure-9 that extension of HYV (Rice) performed poorly in case of Purnia district.

On the other hand area under HYV (Wheat) was continuously increasing. Area increased 2.2 times between 1974-75 to 1980-81. The continuous increase in the area under HYV (Wheat) may be explained in terms of relative immunity of wheat from the vagaries of monsoon and flood. Data (Annexure-9) shows, however, that the rate of increase in HYV of wheat is apprecably slow: In case of Purnia district, wheat has done better than Rice.

The consumptions of fertiliser per unit of agricultural land increased from 1.55 Kg/acre in 1972 - 73 to 3.06 Kg/acre in 1980-81. This reflects only a marginal increase in level of fertiliser consumption over a period of 8 long years. However, the total fertiliser consumption increased 2.14 times between 1970-71 to 1980-81. It was maximum in 1980-81 (3.06 Kg/acre) although some variations are noticed. Data shows that the rate of mechanization of agriculture is rather slow.

On the contrary, there has been tremendous increase in the number of oil engines as is evident from Annexure - 11 . They

They increased from 2176 in 1972 to 9853 in 1982. This may be seen as a positive trend in agriculture in Purnia district. Similarly the number of electric pumps increased from 118 in 1972 to 193 in 1982. The number of Tractors also registered an increase from 573 in 1977 to 1162 in 1982.

Taken all these Indices together, we can safely conclude that through mechanization of agriculture has started-off in this region, but its rate is rather slow.

The net irrigated<sup>area</sup> by Canal in Purnia district increased from 88544 acres in 1970-71 to 93891 acres in 1980-81. Area under Canal irrigation was maximum in 1978-79. Also noticeable is variation in area under canal irrigation. This might have been the result of poor maintenance of canals and the erratic nature of monsoon. Tanks irrigations 100 reflects a poor show as is evident from Annexure - 10. However the net irrigated area by Tubewells increased from 17798 acres in 1970-71 to 53988 acres in 1980-81. Also this increase has been continuous over the same period. It establishes Tube Well has emerged as main source of irrigation as compared to Canals and Tanks.

The average yield per acre of Rice was 269 Kg in 1960-61 which rose up to 312 Kg in 1980-81. However the increase in the per acre yield of rice has not been continuous. In this respect Purnia lags far behind Bhojpur district.

On the other hand, there had been continuous increase in average yield per acre wheat over a period of 20 years. Thus for instance, it increased from 247 Kg/acre in 1960-61 to 571 Kg/ acre in 1980-81. This reflects the introduction of HYV (Wheat) coupled with the correspondening rise in the level of fertiliser consumption.

The daily wage of agricultural labourer increased but the real position is that the real wage rate of agricultural labourers and their dependents declined, while due to increased yield rates and farm prices the income of the landowner class increased substantially. Distribution of income and output among these two classes grew more skewed and concentration increased together with deprivation.<sup>22</sup> The agrarian class structure of Purnia is similarly like the finds in Bhojpur. The distribution of landownership, thus, was skewed and indicates concentration of land under a few ownerships. The benefits of growth are unequitably distributed between the land owners and land-less agricultural labourer class. In case of Purnia, the extent of land concentration is more than Bhojpur district.<sup>23</sup>

#### Comparative Analysis

On Comparison, Bhojpur appears to be ahead of Purnia in respect of major agricultural indices. Thus, the index of cropping intensity for Bhojpur is 1.5 while it is 1.4 for Purnia district. Similar trend is noticeable also in respect of net sown area and gross cropped area (Annexure 3 and 8).

Use of modern techniques of agriculture such as fertilisers, improved quality of seeds, oil engines, electric pumps and tractors



is more evident in Bhojpur than in Purnia district. This reflects not only the lack of innovations among farmers but also the poor development of infrastructural facility namely irrigation in Purnia district. Bhojpur district had the facility of some canal even in pre independent era. Some command Area Development Project further consolidated the infrastructural base of modern agriculture. It was this infrastructural base that led to the introduction of IADP in Shahabad district. Purnia district naturally could not avail this governmental incentives.

Furthermore, if these two districts are to be compared on such criteria as percentage of gross irrigated area over gross cropped area, gross irrigated area over net Sown area, it will appear that Index points are more favourable in case of Bhojpur than that of Purnia district. These again are explicable in terms of presence and absence of infrastructural facilities in two districts of Bhojpur and Purnia respectively (see Annexure 3 and 8).

An index wise comparison will substantiate our points more succinctly. % of gross irrigated area over gross cropped area increased from 43.9 in 1960-61 to 61.4 in 1975-76 in case of Bhojpur while it increased from mere 0.7 in 1960-61 to 15.3 in 1977-78. Clearly purnia district is picking up rapidly, but still lags far behind Bhojpur district on this scale.

Similarly the area under HYV (Rice) in Bhojpur was 223543 acres as against 127513 acres in Purnia in 1980-81. Area under HYV (wheat) also repeats the same pattern. Here Bhojpur took lead over Purnia.

In terms of fertiliser consumption, Bhojpur district recorded higher growth than Purnia. Thus it increased by 7.76 times between 1970-71 to 1980-81 in Bhojpur while it increased only by 2.14 times over the same period in Purnia district. The consumption of fertiliser per unit of agricultural land was also higher than Purnia district. Hence the rate of mechanization of agriculture is faster in Bhojpur district than in Purnia district.

But contrary to the general explanations, Purnia district stands at par with Bhojpur in the use of tractors and oil engines. However, Purnia district lagged far behind Bhojpur in respect of the number of electric pumps. Taken these indices together we can safely conclude that though mechanization of agriculture has started off in Purnia district, but its rate is rather slow than Bhojpur district.

Irrigation facility, too, reflects a wide differences between Purnia and Bhojpur district. Canal irrigation is the chief source of irrigation in Bhojpur while it is Tube Well that constitute the chief source of irrigation in Purnia district.

Productivity ratio for different crops especially rice and wheat is likewise higher in Bhojpur than in Purnia district. However, wheat productivity does not reflect marked difference between these two districts.

Reports of the Task Force presents a picture which shows that agriculturally Bhojpur district is better - off than Purnia district. On the relative scale of the level of development of the agricultural sector, Bhojpur is one of the top ranking district.<sup>24</sup> For Shahabad, S.K. Mishra reached to same conclusion.<sup>25</sup>

Taken all these indices together, we can conclude that Bhojpur district is agriculturally more developed than Purnia. Purnia district can best be characterized as still practising subsistence agriculture. Agriculture in this district continues to depend on the vagaries of moonsoon. In short Bhojpur district has witnessed moderate rate of agrarian transformation, while Purnia has witnessed at best some agrarian growth.

The package of green revolution was not utilized on a large scale in Bhojpur and Purnia district. However, Bhojpur fared better in this respect. The reasons for lack of adoption seem to be partly economic and partly social and actors.

The lack of response of a small farmer to the HYV programme, particularly in rice producing area is less function of his conservative attitudes, and more a reflection of the material condition under which he operated.<sup>26</sup> The stratified village society dominated by a small clique of wealthy farmers tends to limit his access to information vital for decision making. Even when the small farmer is well motivated towards HYV cultivation, despite the risk involved, the bias against small farmers in the operation of cooperative and banks makes the task of raising money of a low interest rate a difficult one. This is not case so in wheat producing area.<sup>26</sup>

B. Das-Gupta analysis is also applicable to Bhojpur and Prunia districts. This explains why HYV programme was not adopted on large scale. In case of Shahabad district (Bhojpur, part of Shahabad), Sachchidananda reached the same conclusion. His study revealed that the upper and Lower cast with more education, higher Socio.- economic status and larger holdings are credited with maximum adoption of improved practices, seeds, fertilisers etc. The medium - sized family shows the largest adoptions. <sup>27</sup>

There is strong correlation between education and adoption especially in case of IADP blocks as Sachchidananda study revealed. Those farmers in whose family there are members serving in towns adopt faster than others. There is also strong correlation between optimism, planning and credit orientation and adoption of agricultural innovations. In Shahabad district, the farmers do not have disposition towards deferred satisfaction towards ~~deferred satisfaction~~ or risk taking. <sup>28</sup> This factor is true for Bhojpur and Prunia district. The adoption of new technology depends on heads of households. Heads of Households in the age group '20 to 34' lead in adoptions in Shahabad district. <sup>29</sup>

Lack of awareness, disinterest and high cost was also factor in preventing people from adopting new seeds and fertilisers in Shahabad district. <sup>30</sup>, this factor is also true for Bhojpur and Prunia districts. These factors explain why HYV Programme was not adopted on large scale in these two districts ?

The Green Revolution - like the land reform and Bhoodan programme prior to it - has not been able to bring about any significant social changes in Bihar. Rather it has contributed to increase in land concentration, domination of upper caste, big landowners and increased agrarian tensions. In Shahabad district,<sup>31</sup> it may be estimated that in 1971 more than 65% of farmers owned less than three acres of land. No less than 65% of the farmers owned less than the minimum standard. The benefits of growth are unequitably distributed between the landowners and landless agricultural labourers.<sup>32</sup> This is also true for Bhojpur district.<sup>33</sup> In case of Purnia district, it is also true. Here land is even more concentrated in a few hands. M. Mitra and Vijayendra states: "Sahu Parbatta is such a case in Purnia. He evicted tenants, engaged under tenants ... He is supposed to have some 30,000 acres".<sup>34</sup> By and large upper castes still continue to hold land which is far in excess of their proportion to total population. As S.S.Jha writes that "most of the Zamindars in Bihar were either a Bhumihar, or Maithili, or a Rajput or a Kayastha".<sup>35</sup> This is also true for both Bhojpur and Purnia district. Agricultural development and the resultant prosperity have not made much difference in the matter of observance of caste norms as Sachchidananda, in his study of Shahabad district, states.<sup>36</sup> The process of modernization has not made any impact on any social institutions. The scheduled castes, according to him, are discriminated and oppressed by the higher caste people. There is a strong opposition to inter-caste marriage

and even to inter-sub-caste marriage. The Inter-caste social distance is almost the same as before. Caste is still governing principle of social behaviour. <sup>37</sup> This is, however, seen in both Bhojpur and Purnia district.

All developmental programmes of the government are mostly usurped by the rural oligarchy in collusion with the state functionaries and the bureaucracy. This is widespread in Bihar where semi-feudal production relations are strong. <sup>38</sup> It applies for both Bhojpur and Purnia district.

As in case of Bhojpur and Purnia district, we have mentioned that the deterioration of the economic condition of small farmers cum-cultivators has taken place due to new technology. Francis Frankel, who studied the impact of the new strategy on the Socio-economic relations of the peasantry came to much the same conclusions. <sup>39</sup>

As far as agrarian classes are concerned, Pradhan H. Prasad has classified the rural sector of Bihar into three categories: Top peasantry (landlords and Rich farmers), middle and poor peasantry and agricultural labourers. <sup>40</sup> Following the entire process of land reforms and rural development, a new section of landlords comprising erstwhile Zamindars, Naibs, rent receiving farmers, moneylenders, sections of well-off occupancy ryots and traders, on one hand, and huge expansion of bataidars-poor, lower middle peasants and agricultural labourers, on the other, has emer-

ged in Bihar. <sup>41</sup> A.N. Das classified rural class<sup>in</sup> the following manner; landlords who comprise feudal landowners and usurers, rich peasants (Kulaks), middle peasants, poor peasants and agricultural labourers. <sup>42</sup> This classification of agrarian class also applies to Bhojpur and Purnia district.

The well - off section of the occupancy ryots have taken benefit of agrarian policy of the government in Bihar and have also consolidated themselves as middle and rich peasants. These occupancy ryots once constituted leading core of the old Kisan Sabha movements, but now they are aggressive and inflicting damage to lower section. <sup>43</sup> The newly emerged rich peasants are entrenched in state politics. Observing change in the political economy of Bihar, Harry W. Blair states that the forward or "twice born" caste groups, that had been dominant in Bihar since independence, are being replaced by the 'Backward Castes' as the dominant stratum in the State. <sup>44</sup> This shows change in power relationship in State politics.

The Green Revolution has also contributed to and increased agrarian unrest. The Home ministry of the Government of India made, a study in 1969, on the causes and nature of agrarian tensions in parts of India. It came to the conclusion that the Green Revolution instead of being an instrument of social transformation became an instrument of social oppression and generated new tensions. <sup>45</sup> Pointed attention to this dangerous position has been drawn by Gunnar Myrdal in his "Asian Drama". He says that "The India village is like a complex molecule among whose parts extreme tensions have been built up ..... The green Revolution, as it is now working, might be that onslaught." <sup>46</sup>

The increased commercialization, according to K. Mukherjee, is only the causes of agrarian unrest in Bhojpur district during 70's.<sup>47</sup>

Traditionally, payment to 'attached' labourer has been in terms of both cash/kind wages and the grant of 0.20 acres for foodgrains cultivation in Bhojpur district. As the prices of foodcrops increased and agriculture became more and more remunerative, the landowners started taking back these lands and paying the workers subsistence wages in cash or very inferior grains. All said and done the situation, as existed there, presented fertile ground for the ideological manipulation by the so-called Naxalites.<sup>48</sup> The poor peasants showed natural readiness for a showdown. They became sensitive to their deprivation. A sense of idealized justice and political equality made them really impatient to throw apart the feudal domination of upper castes.

Such an occasion arose for example in village Ekwar<sup>1</sup> in Sahar police station of Bho<sup>J</sup>pur district on Feb 12, 1967 when a political worker intellectual Jagdish Mahto objected to poll rigging by one of the biggest Bhumihar landlord Nathuni Singh.<sup>49</sup> The case of Jagdish Mahto is not an isolated one. This reflects that it is not only the fact of inequality in agrarian setup but also the enhanced political consciousness of the poor that go into the making of a political movement.



Another significant non economic dimension of agrarian protest movement is the growing sense of 'self-respect' among the poor. It is precisely because of this reason that many poor village labourers can wage their war against landlords as 'izzat ki Ladai'.<sup>50</sup> Agrarian unrest occurred in different parts of Bhojpur district but especially where IADP was introduced.

The suppressions of Naxalite movement by the combined might of landlords and the police could not restore the status quo of the traditional type. The seeds of suspicion sown between the landlords and labourers is still not dead. On economic front, issues that proved to be rallying point for the peasants were invariably redistribution of land, and minimum wages etc.

In Purnia district, the struggle was centred on the land question. By the middle of 1970, the peasants were already moving on to lands, forcibly occupying them, harvesting the rabi crops and sowing the Kharif seeds. This movement was strongest in Purnia districts. It was owned up by the Naxalites.<sup>51</sup> The struggle of agricultural labourer has evolved around issues of batai, hamestead, moneylending and wages.<sup>52</sup>

The agrarian unrest, to some extent, has enhanced political consciousness of down-trodden people. Political consciousness can be seen as part of political transformation. It has also, to some extent, changed the status quo of Traditional type in terms of relation between landlords and poor people.

Notes and References

1. Shahabad district was bifurcated into Bhojpur and Rohtas distt. in year 1972.
2. The district census Handbook, 1961, Shahabad, P.3.
3. Before 1972, Bhojpur district was part of Shahabad district.
4. District census Handbook, 1961.
5. Ibid.
6. Ibid.
7. Report of IADP, OR cit, P.117.
8. Quoted in ibid, PP. 121-122.
9. Ibid, P.122.
10. Ibid, PP.124-125.
11. Ibid, P.125.
12. District census Handbook, 1961, Punia district.
13. Ibid.
14. Ibid.
15. Ibid.
16. S.K.Mishra, Evaluation of public policies for Agricultural Development in less developed regions,  
Indian Institute of Technology, Kharagpur,  
1985, PP.214-15.
17. Ibid, P.213.
18. Biplab Dasgupta, The New Agrarian Technology and India,  
United Nations, Geneva, 1977, P.29.

19. S.K.Mishra, OP. cit, PP.215-16.
20. P.N.Bhargava, V.S.Rastogi and R.R.Pandey, "Study of Marketable surplus of paddy in Shahabad District."  
Economic Affairs, Vol.20, No.1-2, Jan-1975.
21. S.K.Mishra, OP. cit, PP-216-218.
22. Manoshi and T.Vijayendra, "Agricultural labourers and peasant politics: Rural proletarianization in Purnia, Bihar", (ed) Mitra,  
A.N.Das, OP. cit, P.109.
23. Ibid, PP.102-103.
24. Framework Action Plan for Foodgrain Production, Report of the Task Force, Planning commission, Government of India, March, 1988, PP.4-11.
25. S.K.Mishra, OP. cit, P.218.
26. B.Das Dupta, OP. cit, P.250.
27. Sachidanand, Social Dimensions and Agricultural Development, National Publishing House, Delhi, 1972, P.82.
28. Ibid, P.154-155.
29. Ibid, P.155.
30. Ibid.
31. S.K.Mishra, OP, cit, P.217.
32. Ibid.
33. Ibid.

34. M.Mitra, and T.Vijayendra OP. cit, P.98.
35. S.S.Jha, Political Elite in Bihar, Vora and Co., 1972, P.232.
36. Sachidananda, OP,cit, P.156.
37. Ibid.
38. H.P.Pradhan, "Institutional Reforms and Agricultural Growth", Social Scientist, OP, cit.

Also see R.N.Maharaj, Survey of peasant organization. A case study of kisan Sabha in Bihar, (m.), A.N.S.Institute of Social Studies, Patna, 1974.

39. Cited in Sachidanand, OP,cit, P.157.
40. H.P.Prasad, "Caste and Class in Bihar", EPW, Annual No. Feb 1979.
41. V.Mishra, OP.cit, P.46.
42. A.N.Das, Agrarian Unrest and Socio-economic change in Bihar, OP.cit, P.14.
43. V.Mishra, OP.cit, P.46.
44. Blair Harry W, "Rising Kulaks and Backward classes in Bihar: Social change in the late 1970", EPW, Vol XV No.2, 1980.
45. Cited in Sachidanand, OP.cit, P.157.
46. Quoted in Ibid, P.158.
47. K.Mukherjee and R.S.Yadav, Bhojpur: Naxalism in the plains of Bihar, Radha Krishna, New Delhi, 1980, P.38.
48. A.N.Das, Agrarian Unrest and Socio-economic change in Bihar, OP. cit, P.248.

49. K.Mukherjee and R.S.Yadav, OP.cit, PP.43-44.
50. A.N.Das, OP.cit, P.253.
51. Ibid, P.251.
52. M.Mishra and T.Vijayendra, OP.cit, P.113.

A SUMMING UP

After failure of land reform and Bhoodan movement, Indian planners reviewed the whole agrarian policy. Indian government invited Ford Foundation sponsored team of American experts to review the situation and to suggest steps 'to meet Indian food crisis'. On the basis of its recommendation, new agricultural strategy was evolved - one of the highlights the new strategy was the intensive Agricultural District Programme (IADP) popularly called the 'Package programme'. It was introduced in Shahabad district (Bihar) in 1960-61. The new agricultural strategy relied on HYV fertilisers, pesticides, mechanization and irrigation expansion.

Prior to introduction of Green Revolution, level of commercialization of agricultural sector was low in Bhojpur district (Shahabad). Most farmers practised subsistence agriculture. Taking all indices of agrarian development together, Bhojpur district was better off than Purnia district during late 50's and early 60's. Between 1960-61 to 62-63, due to IADP, Bhojpur witnessed some development in the agricultural sector. The average yield per acre of rice and wheat registered an increase compared to previous years in Bhojpur district.

With the introduction of IADP, cropping intensity in Bhojpur district was 1.7 in 1960-61 as against 1.5 for Purnia district. The index for Bhojpur reached 1.4 in 1973-74 and has remained almost constant. The average index of cropping intensity for Purnia was 1.4 after 1960-61. In this respect, Bhojpur fared better than Purnia. In both districts intensive and extensive cultivation was practised.

Taking all indices together such as cropping intensity, percentage of gross irrigated area over gross cropped area, percentage of gross cropped area over net sown area, the number of modern agricultural implements such as tractors, oil engines, and electric pumps, net irrigated area by main different sources, fertiliser consumption, average yield per acre of wheat and rice and area under HYV, Bhojpur district witnessed moderate rate of agrarian transformation while Purnia experienced merely a steady increase in agricultural growth.

In case of Bhojpur, canal and (Sone canal system) Tubewell was main source of irrigation while in Purnia, Tubewell was important source. In Bhojpur modernization took place at slow rate in respect of irrigation. In Purnia tank irrigation, too, reflects a poor show, as is evident from Annexure.

The area covered by HYV (rice) in Bhojpur district was 223543 acres as against 127513 acres for Purnia district in 1980-81. In this aspect also, Purnia district lagged far behind Bhojpur district, In case of wheat, area under HYV in Bhojpur district was in steady progress than Purnia district.

The total fertiliser consumption ( $N+P_2O_5+K_2O$ ) increased 7.76 times between 1970-71 to 1980-81 in Bhojpur while 2.14 times increased in case of Purnia during the same period. The fertiliser consumption per unit of agri-



cultural land was more in Bhojpur than in Purnia. In Purnia the fertiliser have not been used as constantly and intensively as in Bhojpur. Rapid increase in fertiliser consumption reflects the use of modern technology and mechanization of agriculture in Bhojpur.

As far as the use of agricultural implements are concerned, a very different picture emerged from our analysis. Purnia is, more or less, at par with Bhojpur in the use of oil engine and tractor. But Purnia lagged behind Bhojpur in the use of electric pumps. In Bhojpur, the mechanization of larger holdings took place. This has resulted in the marginalization of agricultural labourers as shown in Annexure 14. In case of mechanization of agriculture Bhojpur was better off than Purnia.

In case of average yield per acre of rice and wheat, Bhojpur witnessed more growth rate than Purnia. On the relative scale of the level of development of agriculture, Shahabad <sup>is top ranking</sup> district in Bihar <sup>as</sup> it is clear from Table-8.

TABLE-8

Name of the distt.	Index of development level	
	Agricultural	Overall
Patna	1.195	1.225
Gaya	1.141	1.050
Shohabad	1.218	1.117
Purnia	1.024	0.908
Saharsa	1.043	0.948
Dhanbad	0.764	1.115

Source:- Mishra.S.K, OP cit, P.218.

In case of Bhojpur, same conclusion has been reached by the study of planning commission as it is evident from Table - 9.

Table - 9

Distt	Rice yield Kg/hect	Wheat yield Kg/hect	% gross area irrigated	Fertiliser consumption Kg/hect	cropping intensity %
Bhojpur	1303	1659	68.80	79.00	139.40
Purnia	782	1454	18.30	40.00	146.60

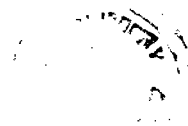
Source:- Framework Action Plan For Foodgrain Production  
OP, cit, P.4.

HYV seeds, fertilisers, and the consumption of fertilisers was not adopted not on large scale. The reason was partly economic and partly social. The lack of response of a small farmers to the HYV programme in Bhojpur and Purnia district, was more reflection of the material condition under which he operated. Lack of information, the personality of V.L.W, taking of risk, <sup>connection with</sup> urban centres were main factor for the adoption of HYV programme.

The new agricultural strategy failed in changing social relationships in both district. It did not alter any norms of caste system which is principal mode of social behaviour. In state politics, especially these two districts, ~~rye~~ <sup>castes</sup> emerged as dominant stratum. The new technology gave fertile ground in which agrarian unrest took place in Bhojpur

district. The agrarian movement also took place in Purnia during the same period. The agrarian movement itself showed the political consciousness of poor peasantry and agricultural labourers. However, the movement was crushed by the state authority in collusion with the landlords and rich peasantry. The movement changed status-quo of traditional type that existed between agricultural labourer and the landlords.

ANNEXTURE



## ANNEXURE - I

## Land utilisation and irrigation

## SHAHABAD

(Hundred hectares)

Type of area according to use	1957-58	1958-59	1959-60	Average
1	2	3	4	5
1. Geographical area (according to village papers)	11,375	11,375	11,375	11,375 (4,056)
2. Forests	2,460	2,699	2,518	2,559
3. Barren and uncultivable land.	283	267	409	320
4. Land put to non-aggricultural uses including homesteads, grave yards, roads, canals, lakes etc.	1,027	1,005	976	1,003
5. Cultivable waste	145	190	211	182
6. Permanent pasture and other grass lands	10	11	12	11
7. Land under miscellaneous tree crops and groves not included in the net area sown	Nil	Nil	Nil	Nil
8. Current fallows	925	327	356	536
9. Fallow land other than current fallows	97	188	95	127
10. New area sown	6,428	6,688	6,798	6,638 (3,970)
11. Net area sown expressed as percentage of geographical area	57	59	60	58 (98)
12. Area sown more than once	3,287	4,985	4,814	4,362 (2,870)
13. Area sown more than once expressed as percentage of net area sown	51	75	71	65 (72)
14. Gross cropped area	9,715	11,673	11,612	11,000 (6,840)
15. Gross irrigated area	4,737	5,109	4,836	4,894
16. Gross irrigated area as percentage of gross cropped area	48	44	42	44

Note : Figures in brackets pertain to 20 blocks in which the programme is operating.

Source : Report on IADP, 1961 - 63, India, Assessment and Evaluation (expert Committee on).

TH-3296

ANNEXURE - 2

Estimates area and production of major crops (SHAHABAD)

Crop	Area (Hectares)				Production (metric tons)			Yield (Quintals per hectare)				
	1957-58	1958-59	1959-60*	Average 1957-60	1957-58*	1958-59*	1959-60*	1957-58	1958-59	1959-60	Aver. 1957-60	
	1	2	3	4	5	6	7	8	9	10	11	12
1. Rice	459,111	482,737	476,359	472,736	318,258	539,959	421,323	6.9	11.2	8.8	8.9	
2. Jowar	456	802	684	647	221	459	419	4.8	5.7	6.1	5.7	
3. Bajra	367	758	875	667	327	347	369	8.9	4.6	4.2	5.1	
4. Maize	11,943	15,145	15,012	14,033	10,211	10,028	7,228	8.5	6.6	4.8	6.5	
5. Ragi	801	1,401	1,125	1,109	426	599	370	5.3	4.3	3.3	4.2	
6. Small Millets	15,710	18,758	16,219	16,896	10,729	11,679	8,833	6.8	6.2	5.4	6.2	
7. Wheat	101,294	125,864	134,060	120,406	54,093	90,547	81,780	5.3	7.2	6.1	6.3	
8. Barley	18,166	23,776	24,086	22,009	9,366	12,697	10,006	5.2	5.3	4.2	4.8	
9. Total												
Cereals	607,848	669,241	668,420	648,503	403,631	666,315	530,328	6.6	10.0	7.9	8.2	

\*Partially revised.

+Production figures are in terms of gur.

Source : Report on IADP, 1961 - 63,  
India, Assessment and Evaluation (Expert Committee on),  
New Delhi,  
1963, P - 127

ANNEXURE - 3

Distt. - Bhojpur

Year	Net Sown Area (N SA) Acre	Gross cropped Area (GCA) Acre	Cropping intensity GCA / NSA	Percentage of Gross irrigated area over Gross cropped area	Percentage of Gross irrigated area over Net sown area	Percentage of net irrigated area over NSA
1	2	3	4	5	6	7
1960-1961	16,79,906 (575031)	28,56,520 (977786)	1.7	43.9	74.6	50.3
1965-1966	18,95,800	29,69,443	1.5	50.4	79.0	56.7
1970-1971	19,07,270	28,14,890	1.4	61.4	90.6	64.7
1971-1972	18,53,562	27,19,244	1.46	63.5	93.1	72.9
1972-1973	18,06,624	27,15,261	1.50	63.2	95.1	79.3
1973-1974	8,10,249	11,41,394	1.4	57.9	81.5	59.6
1974-1975	8,05,600	12,28,117	1.5	58.9	89.8	63.5
1975-1976	8,16,930	12,31,412	1.5	61.4	92.6	74.0
1976-1977	8,21,017	11,93,736	1.4	62.9	91.5	72.5
1977-1978	8,21,068	11,95,452	1.4	65.8	95.8	65.4
1978-1979	8,34,748	12,01,114	1.438	66.5	95.6	78.2
1979-1980	8,16,319	11,93,621	1.46	48.3	70.5	70.5
1980-1981	8,23,787	11,48,242	1.39	68.1	94.9	77.5

Source : Annual season and crop report, Bihar, Patna Directorate of Statistics and Evaluations, Government of Bihar.  
Statistical Handbook, Bihar, Patna, Directorate of Statistics and Evaluations, Government of Bihar.

Note :- Figures in Bracket pertain to Bhojpur District.  
Data from 1960 - 1973 relates to Shahabad District.

ANNEXURE - 4

Distt. Bhojpur

Year	Net Irrigated Area (Acre)	Gross Irrigated Area (Acre)	Area Under HYV (Acre)		Average Yield Kg/Acre		Consumption of Fertiliser Kg/Acre				Consumption of Fertiliser (tonnes)				% Increase over previous year, Rate of growth of consumption of fertiliser.
			Rice	Wheat	Rice	Wheat	N	P2O5	K2O	Total	N	P2O5	K2O	Total	
1960-61	845507	1253305 (429006)	N.A.	N.A.	299	298					1786	192		1978 (677)	
1965-66	1076353 (368435)	1496815	N.A.	N.A.	378	296					4805	972	355	6132 (2099)	
1970-71	1235798	1727665	N.A.	N.A.	367	393					14398	5183	935	19581	- 10.4
1971-72	1350916	1726495	N.A.	N.A.	362	424					18982	3581	1513	24075	22.9
1972-73	1432096	1717264	N.A.	N.A.	387	435	6.51	1.79	0.74	9.04	17711	4874	2012	24597	21.6
1973-74	482969	660483	N.A.	N.A.	412	487	2.91	0.52	0.24	3.67	3554	375	214	4143	
1974-75	511680	723696	252125	222571	412	477	5.38	1.01	0.56	6.95	6166	117	690	6973	68.3
1975-76	604627	756210	173560	197080	408	490	N.A.	N.A.	N.A.	N.A.	8566	1154	357	10077	44.5
1976-77	595446	751536	119460	222642	437	490	11.45	1.17	0.56	13.18	13084	1347	631	15062	49.4
1977-78	537286	787107	207568	229808	506	561	10.76	1.17	0.44	12.37	13115	1446	551	15112	- 0.33
1978-79	653116	798251	12510	237221	511	572	12.62	1.41	0.56	14.59	15055	1690	698	17443	+ 15.4
1979-80	575302	575366	217452	242163	516	578	10.31	1.41	0.56	12.28	12336	1619	684	14639	- 16.0
1980-81	638395	781581	223543	248132	518	586	11.89	1.41	0.48	13.78	13992	1713	585	16290	11.2

Source : Annual season and crop report, Op. cit.

Statistics on Fertiliser and Agriculture in Eastern India, F.A.I., Eastern Region Calcutta

Note : Figures in Bracket pertain to Bhojpur district,

Data from 1960 - 73 relates to Shahabad district, Data in Bracket pertain to Bhojpur district.



ANNEXURE - 5

DISTT. BHOJPUR

Year	Net Area irrigated by different Main Source (in acre)		
	Canal	Tanks	Tubewell
1	2	3	4
1960 - 1961			
1965 - 1966	7,12,894	1,00,094	56,143
1970 - 1971	8,25,284	82,741	1,74,162
1971 - 1972	9,16,053	1,00,576	1,79,988
1972 - 1973	9,82,957	1,00,329	1,94,020
1973 - 1974	3,52,424	11,139	55,562
1974 - 1975	3,60,617	19,164	68,572
1975 - 1976	4,16,440	29,498	94,224
1976 - 1977	4,17,648	30,177	77,867
1977 - 1978	3,94,648	40,402	77,867
1978 - 1979	3,87,522	35,677	74,082
1979 - 1980	2,64,404	15,672	65,000
1980 - 1981	3,80,069	17,721	72,160

125

Source : Annual season arid crop report, Op. cit

Statistical Op.cit.

Note : Data from 1973 relates to Shahabad district.

ANNEXURE - 6

Distt. Bhojpur

Year	Use of Agricultural Implements				Iron and Wooden Plough
	Oil Engines	Electric Pumps	Tractors	Sugarcane crushers	
1956	N.A.	86	61		200595
	(82)	(29)	(20)		
1961	242	↓ 380	↓ 113	7789	237096
1966	259	1644	312	8833	261315
1972	1834	9530 (3300)	1101 (377)	14830	277521
1977	1952	2770	699	3831	128729
1982	9232	3620	833	2788	116039

Source : Annual season and crop report, Op.cit

Statistical Handbook, Op. cit.

Notice : Data in Bracket pertain to Bhojpur district,

Data from 1956 to 1972 relates to Shahabad district.

A N N E X U R E - 7  
DIST. BHOJPUR

STATEMENT SHOWING TOTAL RAINFALL (mm)

Year	South - West Monsoon	North - East Monsoon	Winter period	Hot - weather Period	Grand Total	
	June - Sept.	Oct. - December	Jan. - Feb.	March + May	R.F.	R.D
1959	764.4	164.9			919.6	44.7
60	837.7	39.2	5.0	52.4	753.8	38.9
61	1155.1	115.4			1025	51.6
62				18.6	1339.7	66.3
64	1003.0	94.8			665.1	52.2
65	724.6	28.1	0.4	23.9	962.0	52.2
66			24.3	00.7		
69	891.8	31.3			858.7	
70	848.8	37.3	63.5	9.1		
71	1201.6	68.0	50.5	88.4		
72	570.2	70.7	70.1	00.0		
73	834.0	121.5	16.0	8.2		
74	749.8	28.1	0.5	6.0		
75	792.8	53.8	118.0	12.0		
76	939.5	21.2	11.5	48.0		
77	681.7	211.4	3.1	46.6		
78			86.5	53.0		

127

Source : Annual season and crop Report, op.cit  
- Statistical Hand book, op cit.

ANNEXURE - 8District - Purnia

Years	Net sown Area (Acre)	Gross cropped Area (Acre)	Cropping Intensity $\frac{GCA}{NSA}$	% of Gross irrigated Area over Gross Cropped area	% of Gross irrigated area over Net sown area	% of Net Irrigated Area over N.S.A.
1960-61	13,90,012 (1001503)	21,14,248 (1523315)	1.52	0.7	1.0	
1965-66	15,97,805	20,15,917	1.26	6.1	7.8	
1970-71	17,46,265	23,26,940	1.332	9.8	13.1	9.1
1971-72	16,59,552	23,01,221	1.38	10.1	14.0	9.8
1972-73	16,93,890	22,11,232	1.30	12.1	15.7	11.0
1973-74	12,45,032	16,14,589	1.29	10.5	13.6	9.4
1974-75	11,93,958	16,32,597	1.36	11.1	15.2	10.9
1975-76	12,35,176	1,82,223	1.46	13.2	19.4	11.1
1976-77	12,49,200	19,23,950	1.54	13.6	20.9	12.4
1977-78	13,07,333	19,92,396	1.52	15.3	23.3	11.8
1978-79	13,24,966	19,06,447	1.43	14.7	21.5	13.2
1979-80	12,70,697	18,84,071	1.48	13.6	20.1	12.8
1980-81	12,90,057	18,95,370	1.46	15.5	22.8	13.2

Source : Annual Season and Crop Report, op.cit.

- Statistical Handbook, op.cit.

Note : Figures in Bracket pertains to separate Purnia District  
Data from 1960-74 relates to combined Purnia District.

**ANNEUXRE - 9**  
**DISTRICT - PURNIA**

Year	Net Irrigated Area (acre)	Gross Irrigated Area (acre)	Area under HYV (acre)		Average Yield Kg/Acre		Consumption of Fertilizer per unit of agricultural land kg/acre				Consumption of Fertilizer K (tonnes)				% increase over previous year Rate of growth of consumption of fertilizer
			Rice	Wheat	Rice	Wheat	N	P205	K20	Total	N	P205	K20	Total	
1960-61	N.A.	14,480 (10432)	NA		269	247	NA	NA	NA	NA	65	4		(50) 69	
1965-66	N.A.	6,972	NA		293	275	NA	NA	NA	NA	266	76		342	
1970-71	1,59,494 (114919)	2,29,105	NA		195	404	NA	NA	NA	NA	1864	1320	569	3753 (2704)	75.2
1971-72	1,62,815	2,32,009	NA								1481	587	280	2348	-37.4
1972-73	1,85,815	2,66,765	NA		251	424	0.95	0.44	0.19	1.58	2196	1015	455	3666	56.1
1973-74	1,17,117	1,69,341	NA		342	575	1.13	0.32	0.20	1.65	1948	665	388	3001	
1974-75	1,29,896	1,81,978	140829	131676	300	424	1.90	0.32	0.24	2.46	3113	577	439	4129	37.5
1975-76	1,37,721	2,39,599	93177	130553	280	515					3203	611	395	4209	1.9
1976-77	1,55,115	2,62,265	92017	150714	361	558	2.02	0.56	0.24	2.82	3307	938	386	4631	10.0
1977-78	1,54,395	3,05,070	126023	160618	264	561	1.78	0.32	0.20	2.30	3173	514	398	4135	-10.7
1978-79	1,75,253	2,85,300	133436	163089	271	568	1.94	0.44	0.24	2.62	3732	857	470	5059	22.3
1979-80	1,62,302	2,55,854	123552	168031	276	569	1.78	0.52	0.28	2.58	3432	1010	562	5004	1.08
1980-81	1,71,527	2,94,134	127513	171175	271	571	2.18	0.56	0.32	3.06	4218	1085	631	5934	18.5

Source :- Annual Season and Crop Report, op.cit.

- Statistics on Fertilizers and Agriculture in Eastern India, op.cit.

Note :- Figures in Bracket pertain to separate Purnia District

Data from 1960-74 relates to combined Purnia District

ANNEXURE - 10PURNIA

Year	Net Area Irrigated by Different Main Source (in Acre)		
	Canals	Tanks	Tubewell
1956	NA	NA	NA
1960-61	NA	NA	NA
1965-66	1640	30	208
1970-71	122893 (88544)	296	24703 (17798)
1971-72	123502	388	21370
1972-73	117298	1116	45293
1973-74	76793	46	27722
1974-75	74417	17	37582
1975-76	66118	335	52123
1976-77	73520	542	69801
1977-78	85996	420	59696
1978-79	107015	334	49611
1979-80	95846	617	42044
1980-81	93891	449	53988

Source :- Annual Season and Crop Report, op.cit.

- Statistical Handbook, op.cit.

Note : Figures in Bracket pertain to separate Purnia District.

Data from 1960-74 relates to combined Purnia District.

ANNEXURE - 11DISTRICT - PURNIA

Year	Number of Agricultural Implements			Sugarcane Crusher	Iron and Wooden Plough
	Oil Engines	Electric Pump	Tractors		
1956	54 (39)	2	161		2,90,207
1961	151	2	234	465	3,31,001
1966	198	18	289	618	3,29,487
1972	3769 (2716)	164 (118)	796 (573)		3,14,794
1977	8439	66	981	872	2,19,706
1982	9853	193	1162	87	2,38,417

Source :- Annual Season and Crop Report, op.cit.

- Statistical Handbook, op.cit.

Notes : Figures in Brackets pertain to separate Purnia District.  
Data from 1956 to 72 relates to combined Purnia District

ANNEXURE - 12DISTRICT - PURNIASTATEMENT SHOWING TOTAL RAINFALL (m.m.)

Year	<u>S.W.M.</u>	<u>N.E.M.</u>	<u>W.D.</u>		<u>H.W.</u>	<u>Grand Total</u>	
	<u>June-Sept.</u>	<u>Oct.-Dec.</u>	<u>Jan.</u>	<u>Feb.</u>	<u>March-May</u>	<u>R.F.</u>	<u>R.D.</u>
1959	928.0	592.0				1535.4	59.1
1960	1360.8	66.4	0		207.0	1291.2	50.3
1961	1030.4	241.1	48.4		59.8	1505.6	65.5
1962						44.8	3.5
1964	1018.4	100.9				1227.0	-68.0
1965	972.2	14.0	0.8		03.1	1665.0	-68.0
1966			11.2		85.6		
1969	1045.5	114.3					
1970	1243.6	18.0	18.2		24.3		
1971	N.A.	N.A.	53.6		232.8		
1972	882.2	25.5	23.6		21.2		
1973	1054.4	212.9	34.1		285.2		
1974	1750.0	52.5	39.0		358.7		
1975	1178.8	62.6	9.1		202.3		
1976	1524.7	39.1	17.3		154.9		
1977	1376.2	46.8	0.2		253.4		
1978			11.2		223.0		

Source :- Annual Season and Crop Report, op.cit.

- Statistical Handbook, op.cit.



ANNEXURE - 13DISTRICT-PURNIADISTRICT - BHOJPURPERCENTAGE OF NUMBER OF OPERATIONAL HOLDINGS ACCORDING TO SIZE GROUPS

Farm size (Hectares)	% of holdings		% of holdings		% of holdings		% of holdings	
	1961	No.	1971	No.	No. 1961	No.	No. 1971	
Less than 0.5	9.64		37.10		13.5	45		
0.5 - 1.0	16.96	51.26	18.96	73.28	19.43	55.95	17.74	78.28
1 - 2	24.66		17.22		23.02		15.54	
2 - 3	18.94		8.69		15.81		7.82	
3 - 4	8.65	27.59	5.24	13.93	7.64	23.45	4.54	12.36
4 - 5	6.66		3.43		6.13		2.87	
5 - 6	3.02		-		3.42			
6 - 12	8.19	13.43	-	8.23	8.46	14.09		6.02
12 - 20	2.22		-		2.21			
Above 20	1.06		1.13		0.73		0.19	

Source : - Report on Agricultural Census, Revenue (Department of  
Agricultural Census, Government of Bihar, Bihar, Patna)

## ANNEXURE - 14

STATEMENT SHOWING RURAL POPULATION CLASSIFIED  
INTO LIVELIHOOD CLASSES

State/Distt.	1961		1971		1981		% of		
	Agricul- tural labourer	Total Popu- lation	Agricul- tural labourer	Total Popu- lation	Agricul- tural labourer	Total Popu- lation	Agricul- tural labour to total popula- tion	1961	1971
Bhojpur	278693	2986316	219847	1824575	216807	2149443	9.3	12.0	10.0
Purnia	355973	2103531	400696	2634946	615069	3308921	12.26	15.20	18.5
Bihar									

Source: Statistical Hand Book

Note : Data of 1961 relates to combined Shahabad and Purnia District

BIBLIOGRAPHY

OFFICIAL SOURCES

- Bihar, Annual Season and Crop Report, Bihar, Directorate of Statistics, and Evaluations, Government of Bihar, Patna.
- Bihar, Bihar Through Figures, Directorate of Statistics and Evaluations, Government of Bihar, Patna.
- Bihar, Problems of Small Farmers of Kosi Area, Patna 1969.
- Bihar, Bihar State Planning Board, Selected Plan Statistics, Patna 1976.
- Bihar, Guide and Glossary to the Survey and Settlement Operation Under the Bihar Tenancy Act, Patna 1938.
- Bihar, Laws, Statutes, etc., Bihar State Acquisition of Zamindaris Bill 1947, Patna 1947.
- Bihar, Bihar Agricultural Lands (Ceiling and Management) Bill 1955, Patna 1955.
- Bihar, Estimates of State income 1948-49 to 1966-67, Directorate of Statistics and Evaluations, Planning Department, Government of Bihar.
- Bihar, Agricultural Census, Report on Revenue (Department of) Agricultural Census, 1970-71, Government of Bihar, Bihar.
- Bihar, Statistical Hand Book, Directorate of Statistics and Evaluation, Government of Bihar.
- Bihar, Statistics on Fertiliser and Agriculture in Eastern India, Fertiliser Association of India, Eastern Region, Calcutta.
- India, Government of India, Ministry of Home Affairs, Research and Policy Division, The Causes and Nature of Agrarian Unrest, Delhi, December 1969.
- India, Indian Agriculture in Brief, Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi, 1986.
- India, Consolidated Report on Land Revenue Administration, State of Bihar; Part-I: Land Reforms for the year 1960-61; New Delhi, n.d.
- India, Land Reforms in India, Delhi, 1955.

- India, Royal Commission on Agriculture in India, Vol. XIII, Evidence Taken in Bihar and Orissa, London, 1928.
- India, Agriculture and Irrigation Ministry, Report of the National Commission on Agriculture, 1976, Delhi, 1976.
- India, Report on Intensive Agricultural District Programme, 1961-63, New Delhi, 1964.
- India, Planning Commission, First Five Year Plan, New Delhi, 1952.
- India, Second Five Year Plan, New Delhi, 1956.
- India, Appraisal and Prospects of the Second Five Year Plan, New Delhi, 1958.
- India, Land Reforms in India, New Delhi, 1959.
- India, Third Five Year Plan, Delhi, 1962.
- India, Fourth Five Year Plan - A Draft Outline, New Delhi, 1966.
- National Council of Applied Economic Research (NCAER), A Techno-economic Survey of Bihar, New Delhi, 1959.
- Prasad, Ranchor, Census of India, District Census Hand Books, Patna, 1956.
- India, Abstract of Agricultural Statistics of India (Annual) Delhi.
- India, Agricultural Situation in India, (Monthly), Delhi.

#### B O O K S

- Ahmad, Z.A., Agrarian Problems in India, 1936.
- Althusser, L. Reading Capital, London, 1970.
- Anderson,  
Robert S. (ed), Science, Politics and the Agricultural Revolution in Asia, AAAS Selected Symposium Series, Washington, Westview Press, Inc.,
- Baden-Powell B.H., Land Systems of British India, London 1892.
- Bailey, F.G., Caste and the Economic Frontier, Manchester 1957.
- Banerjee, D.N., Early Revenue System in Bengal and Bihar, 1765-72 Calcutta 1936.

- Baran, P., Political Economy of Growth, New York 1957.
- Bardhan, K., Wage and Employment of Agricultural Labourers in India.- Some Cross Section Analysis, AERC, Delhi, 1970.
- Bellerby, J.R., Agricultural Economic Theory and the Indian Economy, VORA and Co., Bombay, 1961.
- Bettelheim, C., India Independent, London 1968.
- Bhalla, G.S., Changing Structure of Agriculture in Haryana (a Study of the Impact of the green revolution), Chandigarh, Punjab University, 1972.
- Bhardwaj, K., Production Conditions in Indian Agriculture - A Study Based on Farm Management Surveys, Cambridge, Cambridge Univ. Press, 1974.
- Bhave, Vinobha, Bhoodan Yajna, Ahmedabad, 1953.  
-  
- Principles and Philosophy of the Bhoodan Yajna, Tanjore, 1956.
- Blyn, G., Agricultural Trends in India 1891-1947: Output, Availability and Productivity, Philadelphia 1966.
- Bose, S.R., Bihar Population Problems, Calcutta 1969.  
- Economy of Bihar, Calcutta, 1971.  
- Income and its Distribution in Bihar, Calcutta, 1969.  
- A Study in Bihar Agriculture, Calcutta, 1967.
- Bose, S.R., and Ghosh, P.P., Agro-Economic Survey of Bihar, Patna, 1976.
- Bouton, M.M., Agrarian Radicalism in South India, Princeton, Princeton University Press, 1985.
- Brown, D.D., Agricultural Development in India, Districts, Harvard, 1971.
- Brown, L.R., Seeds of Change - The Green Revolution and Development in the 1970's, New York, Praeger, 1970.
- Buchanan, F., An Account of the District of Purnea in 1809-10, Patna, 1928.  
- An Account of the District of Shahabad in 1812-13, Patna, n.d.

- Chaudhary, B., Growth Commercial Agriculture in Bengal (1757-1900), Vol. I, Calcutta, 1964.
- Chaudhury, N.K., (ed.), Trends in Socio-Economics Changes in India, 1871-1961, Simla, 1969.
- Chandhury R.K., History of Bihar, Patna, 1958.
- Daniel, A.V., Strategy for Agricultural Development, Bombay, 1976.
- Das, A.N., and Nilakant, (ed.), Agrarian Relations in India, New Delhi, Manohar, 1977.
- Das, A.N., Does Bihar Show the Way? (Apathy, Agitation, and Alternatives in the Unchanging State), Calcutta, Research India Publication, 1979.
- (ed.), Agrarian Movements in India; Studies on 20th Century Bihar, Great Britain, Frankcass, 1982.
- Agrarian Unrest and Socio-Economic Change in Bihar, 1900-1980, Delhi, Manohar, 1983.
- Dasgupta, B., The New Agrarian Technology and India, Delhi, Macmillan, 1980.
- Datta, K.K., Life and Thought of the Poeples of Bihar, Calcutta, 1967.
- Dayal, P., Bihar in Maps, Patna, 1953.
- Desai, A.R., (ed.), Rural Sociology in India, Bombay, 1959.
- Social Background of Indian Nationalism, Bombay, 1966.
- Desai, D.K., Impact of Farm Tractorisation on Employment and Productivity, Ahmedabad, Indian Institute of Management, 1973.
- Diwakar, R.R., (ed.), Bihar Through the Ages, Calcutta, 1959.
- Dutt, R.C., The Economic History of India Under Early British Rule, (1757-1837), Delhi, 1963.
- Frankel, F.R., India's Green Revolution; Economic Gains and Political Costs, Bombay, 1971.
- Frykenberg, R.E., Studies in Land Control and Social Structure in Indian History, Wisconsin, 1969.

- Frykenberg, R.E., Land Tenure and Peasant in South Asia, New Delhi, Manohar, 1984.
- Gopal, S., The Permanent Settlement in Bengal and its Results, London, 1949.
- Griffin, Keith, The Political Economy of Agrarian Change, London, Macmillan, 1975.
- Grierson, G.A., Bihar Peasant Life, Patna, 1926.
- Guha, A.C., A Brief Sketch of the Land Systems of Bengal and Bihar, Calcutta, 1915.
- Guha, R., A Rule of Property for Bengal, Paris, 1963.
- Gupta, Rakesh, Peasant Struggles : A Case Study of Bihar, Ph.D Thesis, J.N.U., New Delhi, 1978.
- Gupta S.C., Agrarian Relations and Early British Rule in India, Bombay, 1963.
- Habib, Infan, The Agrarian System of Mughal India, Bombay, 1963.
- Hayami Y. and Vernon W.R., Agricultural Development : An International Perspective, Baltimore : John Hopkins Press, 1971.
- Houlton, John, Bihar : The Heart of India, Calcutta, 1949.
- Jeffery M.P., Agrarian Revolution, Social Movements and Export Agriculture in the Underdeveloped World. The Free Press, New York, 1975.
- Jha, S.S., Political Elite in Bihar, Bombay, 1972.
- Joshi, P.C., Land Reforms in India, Delhi, 1975.
- - Problems and Prospects of Landholding in India, Delhi, 1960.
- Mandal, G.C., Technology, Growth and Welfare in Indian Agriculture, New Delhi, Agricole Publishing Academy, 1989.
- Mellor, J.W., The Economics of Agricultural Development, Vora & Co., Publishers Private Limited, Bombay, 1966.
- The New Economics of Growth : A Strategy for India and the Developing World, Ithaca : Cornell University Press, 1976.



- Misra, B.R., Economics of the Bhudan Movement, Bombay, 1956.
- Mishra, Girish, The Agrarian Problems of Permanent Settlement : A Case Study of Champaran, New Delhi, 1978.
- Mishra, J., (ed.), Land Reform in Bihar, Patna, 1974.
- Mishra, Ramnandan, Kisanon Ki Samasyayen (in Hindi), Darbhanga, 1952.
- Mishra, S.K., Evaluation of Public Policies for Agricultural Development in Less Developed Regions, Department of Archaeology and Regional Planning, IIT Kharagpur, West Bengal, India.
- Moore, Barrington, Social Origin of Dictatorship and Democracy; Lord and Peasant in the Making of the Modern World, Penguin 1967.
- Moreland, W.H., The Agrarian System of Moslem India, Cambridge 1929.
- Mukerji, Karuna Moy, Problems of Land Transfer : A study of the Problems of land Alienation in Bengal, Santiniketan 1957.
- Mukherjee, Kalyan and Rajendra Singh Yadav, Bhojpur : Naxalism in the Plains of Bihar, Radha Krishna Prakashan, New Delhi - 1980.
- Neale, W.C., Economic Change in Rural India: Land Tenure and Reform in Uttar Pradesh, 1800-1955, New Haven, 1962.
- Ojha, G., Land Problems and Land Reforms : A Study with Reference to Bihar, Sultan Chand AND Sons, New Delhi.
- Rao, C.H. Hanumant, and B. Hanumanth Baba, HXX Programme - Variables that Matter: A Comment Economic and Political Weekly, Bombay, June, 1970.
- Patel, Govindlal D., The Indian Land Problem and Legislation, Bombay, 1954.
- Prasad, H., Waste Lands in Bihar and Their Reclamation, Patna, 1964.
- Raj. K.N., et al (ed), Essays on the Commercialization of Indian Agriculture, Oxford University Press, Delhi.
- Ramabhai, Suresh, Vinobha and His Mission, Sevagram, 1954.
- Randhawa, M.S., Green Revolution, Delhi, 1974.
- Rao, C.H. Hanumant, Technological Change and the Distribution of Gains in Indian Agriculture, Macmilan, Delhi - 1975.

- Rosen, George, Peasant Society in a Changing Economy : Comparative Development in Southeast Asia and India Urbana. University of Illinois Press, 1975.
- Ray, Choudhry, P.C., Inside Bihar, Calcutta 1962.
- \_\_\_\_\_ Trends in Socio-economic Change in India, 1941-1951, Simla, 1969.
- Sachidanand, Social Dimensions of Agricultural Development, NPH, 1972.
- Sarkar, Jagannath, Economics of British India, Calcutta, 1917.
- Sen, Sudhir, Reaping the Green Revolution : Food and Jobs for All, New Delhi, 1975.
- Sharma T.C., Green Revolution Gaps: A Geographical Analysis, An ICSSR - Funded Study, Rawat Publications, Jaipur, 1989.
- Shenoi, P.V., Agricultural Development in India : A New Strategy in Management, Delhi, Vikash Publishing House Pvt. Ltd., 1975.
- Sinha, R.N., Bihar Tenantry 1785 - 1833, Bombay 1968.
- Tennyson, H., India's Walking Saint : The Story of Vinoba Bhave, New York 1955.
- Thonner, Daniel, Agrarian Prospect in India, Delhi - 1956.
- Thonner, Daniel & Alice, Land and Labour in India, Bombay, 1962.
- Wadhwa, D.C., Agrarian Legislation in India (1793-1966), Vol.1, Poona 1973.
- Warriner, Doreen, Land Reform in Principle and Practice, Oxford 1969.

A R T I C L E S

- Ahmad, Z.M., "The Social and Economic Implication of the Green Revolution in Asia", International Labour Review, Geneva, January, 1972.
- Bagchi, Amiya Kumar, "Deindustrialisation in Gangetic Bihar, 1809-1901" in Essays in Honour of Prof. S.C. Sarkar, New Delhi - 1976.
- Bandopadhyay, D., "Agrarian Relations in Two Bihar Districts", Mainstream, Vol. III, No. - 40, 2 June, 1973.
- Bardhan, P.K. and Srinivas, T.N, "Income Distribution : Patterns, Trends and Policies," EPW , Vol. 6, 1971.
- Bhaduri, Amit, "An Analysis of Semifeudation in East India", Frontier, Autumn No. 1973.
- Bhaduri, Amit, "Study of Agricultural Backwardness Under Semifeudalism", Economic Journal, March 1973.
- Billings, M.M, and Singh, A. "Labour and Green Revolution: An Experience in Punjab", EPW, Review of Agriculture, Vol. 4: A, 1969.
- Bose, S.K., "Land Reform Legislation in Bihar and its Implementation", Indian Journal of Agricultural Economics, Vol. XVII, No. 2, January-March, 1962.
- Bose, S.R., "Land Sales and Land Values in Bihar", Indian Journal of Agricultural Economics, Vol. XXV, No. 2, April - June 1970.
- Bose, S.R., "Levels of Poverty in Rural Bihar", The Searchlight, 21, April, 1970.
- Byres, T.J., "The Dialectics of India's Green Revolution", South Asian Review, London, January, 1972.
- Catanach, I.J., "Agrarian Disturbances in Nineteenth Century India", IESHR, Vol. III, No. 1, March, 1966.
- Chatterjee, B.B., "Bhoodan Changes Life" Yojana, 26 January, 1967.
- Chaudhari, B.B., "Agrarian Movements in Bengal and Bihar 1919-1939" in B.R. Nanda (ed), Socialism in India, Delhi 1972.

- Chaudhuri, B.B., "Agrarian Economy and Agrarian Relations in Bengal, 1859 - 1885" in N.K. Sinha (ed), History of Bengal, Calcutta 1967.
- Chaudhuri, B.B., "Land Market in Eastern India, 1793 - 1940", IESHR, Vol. XIII, Nos. 1 & 2, January, June 1975.
- Chaudhuri, B.B., "The Process of Depeasantisation in Bengal and Bihar, 1885 - 1947", Indian Historical Review, Vol. II, No. 1, Delhi 1975.
- Dhar, Hiranmay, "The JP Movement in Bihar: A postscript", Frontier, 6 August 1977.
- Feder, Earnest, "McNamara's Little Green Revolution", EPW, 3 April 1976.
- Franknel, F., "Agricultural Modernisation and Social Change", Mainstream, 29 November 1969.
- Gandhi, P.C., "Leading Bihar to Caste War", Sunday 9 April 1978.
- Gandhi, M.K., "The Zamindars and the Ryots", Young India, New Series, Vol. III, No. 153, 18 May, 1921.
- Guha, Amalendu, "Marxist Approach to Indian History: A Framework", in K. Mathew Kurien (ed), India - State and Society, Orient Longman, Madras 1975.
- Jaiswal, N.K. and Vyas, U.K., "Impact of Kosi Embarkment : A study or Two Villages in North Bihar", EPW, 4(47) 22 November, 1969.
- Jha, Dayanath, "Agricultural Growth, Technology and Equity", Indian Journal of Agricultural Economics, Conference Number, Bombay July-September, 1974.
- Joshi, P.C., "Agrarian Social Structure and Social Change", in K. Mathew Kurien (ed), India State and Society, Orient Longmans, Madras, 1975.
- Joshi, P.C., "A review Article on Factors Underlying Agrarian Unrest", Seminar, No. 129, May 1970.
- Joshi, P.C., "Land Hunger: The problem", Seminar No. 14, April 1971.
- Khusro, A.M., "Farm Size and Land Tenure in India", Indian Economic Review, Vol. 14, 1979.

- Konar, Hare Krishna, "Our Land Problem", Mainstream, 29 July 1967.
- Krishna, Raj, "Agrarian Reform in India: The Debate on Ceilings", Economic Development and Cultural Change, Vol. 8, No. 3, April 1959.
- Ladjensky, Wolf, "Green Revolution in Bihar: The Kosi Area - A field Trip", EPW September 1969.
- Lahiri, R.K. , "Impact of HYV on Rural Labour Market", EPW, Sept. 26, 1970.
- Mandal, S.C. And Kulkarni, V.R., "Scope for Expansion of High-Yielding Varieties in Bihar", Indian Farming Indian Council of Agricultural Research, New Delhi.
- Mencher, P.J., "Conflicts and contradictions in the Green Revolution : The Case of Tamil Nadu", EPW, Annual No. 1974.
- Minhas, B.S. and T.N. Srinivasan, "New Agricultural Strategy Analysed", Yojana, Delhi, January 26, 1966.
- Mishra, Girish, "Caste in Bihar Politics", Mainstream, 7 December 1963.
- Mukherjee, Kalyan and Kala, Manju, "Bhojpur: The Long War", Mainstream, Vol. 6, Nos. 45-46, 8 and 15, July, 1978.
- Narayan, Jaya prakash, "Bhoodan Movement in India", Asian Review, October 1958.
- Narayan, Jaya Prakash, "The Land Grabbers", The Hindustan Times, 9 August, 1970.
- Narayan, Jaya Prakash, "Politics of Violence: The Roots", Amrit Bazar Patrika, 29 November 1970.
- Oommen, T.K., " Agrarian Tension in a Kerala District: An Analysis", Indian Journal of Industrial Relations, Vol. 7, No. 1, July 1971.
- Prasad, Pradhan H, "Production relations: Achilles Heel of Indian Agriculture", EPW, 12 May 1973.
- Prasad, Pradhan H., "Reactionary Role of Usurers Capital" EPW, August 1974.

- Prasad, Pradhan H., "Agrarian Unrest and Socio-Economic Change in Bihar: Three Case Studies", EPW, June 1975.
- Ray, N.K., "An Analysis of Economic Structure of East Bihar Villages", Khadi Gramodyog, 21(7), April, 1975.
- Rudra, A., "The Green Revolution and Greedy Revolution", South Asian Review, Vol. IV, No. 9, July 1971.
- Rudra, Asok, A.Majed And B.D. Talib, "Big Farmers of Punjab", Economic and Political Weekly, Bombay, September 27, 1969.
- Sachchidanand et. al, "Sarvodaya and Development", Journal of Social and Economic Studies, Vol. IV, No. 1, Patna, March 1976.
- Shah, Ghanshyam, "Revolution, Reform or Protest? A study of the Bihar Movement", EPW, 8, 16 & 23 April 1977.
- Shastri, C.P., "Investment on Farm and Capital formation in Agriculture With Particular Reference to Bihar," IJAE, 20 (1), January-March, 1965.
- Singh, K.K., "Factors Determining Agricultural Wages: A case Study", IJAE, 29 (3), January 1974.
- Singh, L.P., "Sarvoday Movement in Musahari", Mainstream, 23, Feb. 1973.
- Sinha, Arun, "The 'Twenty Point' Toll", The Times of India, 26, June 1977.
- Sinha, Arun, "Murder of a Peasant Leader", EPW, 30 June 1977.
- Sinha, Arun, "On a Direction-less Movement", Frontier, 21, May 1977.
- Sinha, Arun, "Angry Harijans: Dangerous Naxalites", Frontier, 9 July 1977.
- Sinha, Arun, "Kulak's Offensive", Frontier, 13, August 1977.
- Sinha, Indradeep, "Struggle for Agrarian Reform in Bihar", Mainstream, 7 February 1968.
- Sinha, Indradeep, "Land Liberation Movement in Bihar", Mainstream, 10 October 1970.

- Sinha, Manju, "Changing Agricultural Income in Bihar", Commerce (Supplement), 127 (3263), 17 Nov. 1973.
- Thapar, Ashok, "Warning From Tanjore: New Tensions in Rural Areas", Times of India, January 20, 1969.
- ~~Srinivasan, M. N., "The Remembered Villages", EPW, 1979.~~
- Srivastava, U.K., Crown, R. W., And Mendy Earlo, "Green Revolution and Farm Income Distribution, EPW, Review of Agriculture, Vol. 6 : A, 1971.
- Von Blankenberg, Peter, "Who Leads Agricultural Modernisation in India? A study of Some Progressive Farmers in Mysore and Punjab", Economic and Political Weekly, Bombay, September 30, 1972.
- Vyas, V.S., "Structural Change in Agriculture and the small Farm Sector", EPW , Vol. XI, No. 1 and 2, 10 January 1976.