

**TRENDS IN THE GROWTH OF AGRICULTURAL OUTPUT
AND 'FARMERS' INCOMES IN INDIA SINCE 1973-74
WITH SPECIAL REFERENCE TO UTTAR PRADESH**

*Thesis submitted to Jawaharlal Nehru University for the
award of the degree of*

DOCTOR OF PHILOSOPHY

SHILPY NAGALIA



**Centre for Economic Studies and Planning
School of Social Sciences
Jawaharlal Nehru University
New Delhi 110067**

2017



CENTRE FOR ECONOMIC STUDIES & PLANNING
SCHOOL OF SOCIAL SCIENCES
JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI- 110 067 (INDIA)

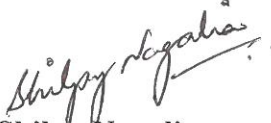
Phone : 91-11-26742575, 26741557,
26742676 Ext. 4421
Direct : 26704421
Fax : 91-11-26741504, 26741586

Date: May, 2017

CERTIFICATE

This is to certify that the thesis titled “Trends in the Growth of Agricultural Output and ‘Farmers’ Incomes in India Since 1973-74 with Special Reference to Uttar Pradesh”, submitted by me is in partial fulfillment of the requirements for the award of the degree of Doctor of Philosophy of Jawaharlal Nehru University. This thesis is my original work and has not been previously submitted, in part or full, for the award of any other degree of this University or any other University.

I request that this thesis be placed before the examiners for evaluation.


Shilpy Nagalia

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



Prof. Sugata Dasgupta
(Chairperson)



Prof. Utsa Patnaik
(Co-Supervisor)



Prof. Praveen Jha
(Supervisor)

अध्यक्ष / Chairperson
आर्थिक अध्ययन और नियोजन केन्द्र
Centre for Economic Studies & Planning
सामाजिक विज्ञान संस्थान / School of Social Sciences
जवाहरलाल नेहरू विश्वविद्यालय
Jawaharlal Nehru University
नई दिल्ली - 110067 / New Delhi-110067

Supervisor
CESP, SSS, JNU
New Delhi-110067

To Papa (1940 - 2007)

You will always be in our thoughts.

To the happiness on the faces of farmers whenever it rained.... which made me realize that rainfall does not just give much needed respite from the searing heat of Delhi's extreme climate but how the economy and lives of farmers in a primarily rainfed country depend on it in a very real sense.

Acknowledgement

I want to thank my Supervisor, Prof. Utsa Patnaik, for her patience and guidance over this long drawn-out process of writing my thesis. Without her supervision at every step, the thesis could not have been completed. She has taught me to read Economics critically and politically. Her incisive comments have always helped me put things in perspective. I'm deeply indebted to her for her generosity and time that she has given me over these many years.

I would like to thank Prof. Praveen Jha for his co-operation and support whenever it was needed.

The fieldwork undertaken in this study would not have been possible without the assistance of Mr. Pundir, the Field Operations Division (FOD) Officer of NSSO, who was in charge of Saharanpur and Muzaffarnagar districts at the time I conducted the survey in 2005-06 but has now retired. He not only made arrangements for my stay, especially in the two villages of Karori and Kamruddin-Nagar but also accompanied me to the field the first time I went there for the pilot survey in December 2005. I'm grateful to Dr. Ishwar Singh, Mr. Ratan Singh and Mr. Subhash, my hosts at Karori, Kamruddin-Nagar and Bhainswal villages, for welcoming me into their homes and for giving me their valuable time to take me around their villages, introducing me to the villagers and helping me conduct the survey. I would also like to thank Mr. Satyendra Singh, retired CACP official and a resident of Karori, for his valuable inputs in farm data collection. Special thanks are due to Mr. Yogendra Kumar, for not only helping me out with the smooth conduct of the survey in Nagla-Kabir but also for the delicious meals he offered me at his place numerous times while I was interviewing farmers of that village. I cannot help remembering the late Palturam uncle, aunty, Mridula di and Niti, at whose place I stayed in Muzaffarnagar city while covering the three villages of Nagla-Kabir, Kawal and Kheri-Sarai. Thankyou for being so warm and for facilitating my work by welcoming me in your home.

I must thank Mr. Harikishan of Kheri Sarai, Mr. Gaurav Tyagi at NIC, Muzaffarnagar, Mohd. Raziullah at Krishi Bhavan, Lucknow and Dr. Harendra, Economics and Statistics Officer at Meerut for helping me procure village, district and state level data at different stages of the work. The then District Agriculture Officer (Mr. J.P. Chaudhary), District Statistical Officer (Mr. Satyaprakash Tyagi), Deputy Director (Agriculture Ext.) Mr. Saini and various other government officials especially Mr. Mahendra Singh, Mr. Dharamveer Singh and Mr. Ashwini in the district agriculture and statistical offices helped me in broadly identifying the area for detailed field study. I am grateful for their assistance in gathering information on the socio-economic conditions of Muzaffarnagar district.

I deeply acknowledge the support of the numerous farmers and agricultural labourers who gave their valuable time and patiently answered all my queries during the fieldwork. Though they were fearful and suspicious initially that I might be some government official who would impose a tax on their incomes, they opened up when reassured that I was just a student and even took me to the fields to show me how agricultural operations were actually performed. I owe the valuable practical experience gained to all the farmers of my study area.

To all the women of the several homes where I stayed, especially Parvesh didi, who made me realize how harsh and difficult the living conditions, particularly of women in rural areas continue to be, I want to deeply thank them all for their generosity and resilience in the face of such adversities.

The library staff of JNU, NIPFP, IEG, Ratan Tata and ISI have been extremely helpful and co-operative.

I would also like to thank my colleagues at I.E.G., Shyam Lal and S.R.C.C. for the period that I worked there in between. Thanks to my students of Economic History at S.R.C.C. who made teaching an enjoyable and memorable experience for me. Their love and support gave me the much needed confidence in those difficult times.

I want to thank Anup for helping me out with the budget documents and with the employment-unemployment data of NSSO. Thanks are also due to Srini and Shubha who kept up the pressure by asking me each time I bumped into them while on evening walks to NCERT campus if I had submitted or not. To Rajeev who patiently helped me with Stata whenever I tended to get stuck or needed a clarification or two. To Jhumur, Gargi, Nidhi and Vidyut who always had words of support in moments of self-doubt and uncertainty.

To my family- Ma-Papa, Rachu di and Shubbie di, Kakali, Pranay da and Shakti- whose unwavering belief in me and constant love, support and patience has always kept me going, even in the darkest of hours. To Shamshad for always keeping up our spirits through his cheerfulness and positivity throughout. Special thanks and love to Kartik whose innocence provided much needed relief and joy in periods of monotony and uncertainty. Last but not the least, to Kakali, whose solid support all these years, gave me the strength, courage and confidence to not give up and carry on despite all odds.

Contents

Acknowledgement	i-ii
List of Tables	vi-xii
List of Figures	xiii
	Pages
Introduction	1-11
Chapter 1 Colonial Indian Economy under the Twin Influences of Tribute Extraction and Transfer to the Metropolis	12-33
1.1. <i>Locating the Economic Importance of India as a Colony to Overall British Imperial Order.</i>	12
1.2. <i>Land Revenue Settlements and Surplus Appropriation as its Underlying Basis</i>	20
1.3. <i>Commercialization of Agriculture, “Free Trade” and Tribute Transfer</i>	25
1.4. <i>Structural Stagnation of Colonial Economy- An Inevitable Fallout of Tribute Extraction and Realisation</i>	30
Chapter 2 Theoretical Positions and Approaches to Analyzing Changing Agrarian Structure of India	34-66
2.1. <i>Capitalist Development in Indian Agriculture: The Debate</i>	36
2.2. <i>A Critical Review of Populist and Neo-Populist Approaches to Analysing Agrarian Structure and their Implications for the Nature of Desirable Agrarian Change</i>	44
2.3. <i>Alternative Methodological Approaches to Identifying the Rural Poor and the Importance of a Class Based Approach</i>	61
<i>Appendix to Chapter 2</i>	66
Chapter 3 Land Reforms, New Technology and Capitalist Development in Post-colonial Indian Agriculture	67-93
3.1. <i>Path of Agrarian Development in Independent India</i>	68
3.2. <i>Land Reforms- Role of the State and the Aspect of Equity</i>	72
3.3. <i>Introduction of ‘New Agricultural Strategy’ and the Growing Socio-Economic and Political Influence of Rural Elite</i>	78
Chapter 4 Trends in the Growth of Agricultural Output in India and in Uttar Pradesh	94-116
4.1. <i>Long-term Trends in Foodgrains Output and Domestic Consumption, 1951 to 2010</i>	95

4.2.	<i>Growth Performance of Indian Agriculture: Trends in Output, Area and Productivity of Major Crops</i>	101
4.3.	<i>Long-term Trends in Growth of Agricultural Production, Area and Productivity of Major Crops in Uttar Pradesh</i>	108
	<i>Appendix</i>	116
Chapter 5	Trends in the Concentration of Landholding in India with Special Reference to Uttar Pradesh	117-145
5.1.	<i>New Technology and Increasing Polarization of Peasant Classes</i>	117
5.2.	<i>Increased Concentration of Landholding, Increasing Landlessness and Reverse Tenancy</i>	120
	Concluding Remarks	131
	<i>Appendix</i>	134
Chapter 6	Agrarian Crisis in the Economic Reforms Period	146-189
	<i>Introduction</i>	146
6.1.	<i>A Critical Review of Debates Underlying Economic Reforms in Indian Agriculture</i>	149
6.2.	<i>Impact of Neoliberal Reforms on Indian Agriculture: Some Evidence from Agrarian India with Special Emphasis on Rural Uttar-Pradesh</i>	158
	<i>Appendix</i>	181
Chapter 7	An Overview of Agro-climatic and Socio-Economic Profile of the Chosen Villages	190-208
	Sampling Design and Sample Size	199
Chapter 8	Determining the Economic Class Status of Sample Households	209-228
8.1.	<i>The “Labour Exploitation Criterion”</i>	211
8.2.	<i>Complexities Involved in the Computation of E-ratios in the Specific Context of Muzaffarnagar District</i>	213
8.3.	<i>Identifying Economic Classes in our Sample Households</i>	218
8.4.	<i>Degree of Association Between the Two Methods of Grouping</i>	224
Chapter 9	Structure of Asset Ownership and Patterns of Labour Use by Economic Class and Farm Size	229-255
9.1.	<i>Structure of Ownership of Farm Assets (Land and Non-Land) in our Sample Households</i>	230
9.2.	<i>Differences in the Form and Extent of Labour Use by Class and Acreage</i>	244

Chapter 10	Inputs, Output and Productivity	256-278
10.1.	<i>Commercialization of Agriculture and Variation over Classes</i>	257
10.2.	<i>Differential Access to Essential Farm Inputs by Class and Farm Size</i>	259
10.3.	<i>Agricultural Production Concentration</i>	270
Chapter 11	Output and Incomes of Farming Households by Class and Farm Size	279-311
11.1.	<i>Gross Output Value from Crop and Livestock Production</i>	280
11.2.	<i>Incomes by Class and by Farm Size</i>	284
11.3.	<i>Actual Farm Disposable Income Levels Compared with Poverty Level Incomes</i>	290
11.4.	<i>Income from Sources other than Crop and Livestock Farming</i>	294
11.5.	<i>Actual Total Income Levels Compared with 'Poverty' Level Incomes</i>	299
11.6.	<i>Situation Assessment Survey of Farming Households</i>	306
	Concluding Remarks	312-318
	Bibliography	319-337

List of Tables

1.1.	Workers in agriculture and manufacture per hundred workers: India, 1881 to 1951	30
3.1.	Production growth rates of Foodgrains by Five-Year Plans of India	90
3.2.	Trends in Per Capita Net Availability of Foodgrains in India (Five-year average), 1897-1902 to 1986-90	91
3.3.	Uneven geographical spread of modern farming across 15 major Indian states	92
3.4.	State and Region Foodgrains Output Per Capita, 1960-2010	93
4.1.	Trends in average net output per capita of cereals and foodgrains in India (five-year average)	99
4.2.	Trends in the growth of foodgrain and non-foodgrain output in All-India	104
4.3.	Trends in the growth of area under foodgrain and non-foodgrain crops in All-India	105
4.4.	Trends in the growth of yield of foodgrain and non-foodgrain crops in All-India	107
4.5.	Trends in the growth of foodgrain and major non-foodgrain crops in Uttar Pradesh	111
4.6.	Trends in the growth of area under foodgrain and major non- foodgrain crops in Uttar Pradesh	112
4.7.	Trends in the growth of yield of foodgrain and major non- foodgrain crops in Uttar Pradesh	113
5.1.	Trends in the concentration of Area Owned in U.P. in relation to All-India, 1953-4 to 2013 (Percent)	122
5.2.	Percentage of landless and semi-landless households, 1953-4 to 2013	122
5.3.	Concentration ratios (adjusted and unadjusted) for household ownership holdings	126
5.4.	Trends In The Concentration Of Area Operated In U.P. In Relation To All-India, 1953-54 to 2013 (Percent)	127

5.5.	Concentration of Area Owned and Operated in Western and Eastern U.P. in 1971-72 (viz., NSS Round No. 26 th) (Percent)	128
5.6a	Distribution of total area leased-in in U.P. and All-India, 1953-4 to 2003 (Percent)	127
5.6.b	Trends in the Distribution of Total Area Leased-in All-India (Percent)	127
6.1	Shifts in sectoral distribution of workforce in terms of usual (principal + subsidiary) status in India	159
6.2	Sectoral share in GDP (constant at 1999-2000 prices) in India	159
6.3	Growth Rates of Agricultural Output of Various Sub-Sectors at 1993-94 prices	161
6.4	Total and Average Area Operated as well as Percentage of Operating Households to all Rural Households in India, 1971-72 to 2012-13	163
6.5a	Budgetary Expenditure on Components of 'Rural Economy' and its share in Combined Total Budgetary Expenditure (Rs. Crore) in Uttar-Pradesh, Current Prices	164
6.5b	Shares of Components of 'RE' in Total Budgetary Expenditure on 'RE' in Uttar-Pradesh (Percent)	164
6.5c	Budgetary Expenditure on 'Rural Economy' (RE) and its share in combined budgetary expenditure and GDP, 1950-51 to 2009-10 in Rs. crore, at current prices, All-India	165
6.6a	Growth Rates of Total Employed Population in Agriculture by Usual Principal and Subsidiary Activity Status (UPSS), 1972-73 to 2009-10, All-India	167
6.6b	Growth Rates of Total Employed Population in Agriculture by Usual Principal and Subsidiary Activity Status (UPSS), 1977-78 to 2009-10, Uttar-Pradesh	167
6.7a	Percentage of rural population below 'Official Poverty Line' (OPL) and 'Direct Poverty Line' (DPL) in Uttar Pradesh	179
6.7b	Percentage of rural population below 'Official Poverty Line' (OPL) and 'Direct Poverty Line' (DPL) in All-India	180
7.1	Demographic profile of the sample villages	191
7.2	Land utilization pattern and irrigated area by source	193

7.3	Cropping pattern: Area under principle crops in the chosen villages	194
7.4	Concentration of area owned in the six surveyed villages in relation to the district landholding structure	197
7.5	Occupational distribution of total population and total workers by category of work in our sample villages	198
7.6	Village-wise Distribution of Sampled Holdings	200
7.7	Socio-Economic Indicators of the Extent of Development at Block Level	204- 205
7.8	Percentage Distribution of Sample Holdings and Area Operated by Groupings of Operational Area	207
8.1a	Distribution of sample holdings and operated area by economic class and size-groups of area operated	221
8.1b	Average net labour days hired-in/hired-out in farm work by economic class and farm-size groups	222
8.1c	Average net labour days hired-out/hired-in in farm and non-farm work by economic class and farm-size groups	223
8.2a	Distribution of sample holdings by economic class and farm-size group	224
8.2b	3 by 2 Contingency Table	225
8.2c	2 by 2 Contingency Table	226
9.1a	Distribution of Sample Holdings and Owned Area by Economic Class and Size-groups of Area Owned	231
9.1b	Percentage Distribution of Sample Holdings and Area Owned by Economic Class	231
9.2	Percentage Distribution of Sample Holdings and Area Operated by Economic Class	233
9.3	Area Leased-out as Percentage to Total Owned Area by Economic Class	234
9.4a	Distribution of Total Leased-in Area and by type of lease for each Economic Class	234
9.4b	Percentage Distribution of Total Leased-in Area and by Type of Lease by Economic Class	234

9.5a	Distribution of Total (Net) Area Leased-out and by type of lease for each Economic Class	236
9.5b	Percentage Distribution of Total (Net) Area Leased-out and by Type of Lease for each Economic Class	236
9.6a	Distribution of Total (Gross) Area Leased-out and by type of lease for each Economic Class	237
9.6b	Percentage Distribution of Total (Gross) Area Leased-out and by Type of Lease for each Economic Class	237
9.7a	Percentage of Households to Total Number of Households in Each Class Owning Means of Production	239
9.7b	Percentage of Households to Total Number of Households in Each Acreage Group Owning Means of Production	240
9.8a	Concentration of Ownership of Means of Production by Economic Class	242
9.8b	Concentration of Ownership of Means of Production by Farm-size Group	242
9.9a	Percentage Distribution of Total Value of Farm Assets (Other than Land) Owned and their Value Per Household by Economic Class	243
9.9b	Percentage Distribution of Total Value of Farm Assets (Other than Land) Owned and their Value Per Household by Farm-size Group	243
9.10	Potential Maximum of Family Labour Days per Household as well as Average Area that can be Cultivated Per Household Using Family Labour by Economic Class	246
9.11a	Aggregate of Total and Hired-in Labour Days and Percentage of Hired-in Labour Days to Total Labour Days Worked on Operational Holdings by Economic Class	249
9.11b	Aggregate of Total and Hired-in Labour Days and Percentage of Hired-in Labour days to Total Labour Days Worked on Operational Holdings by Farm-size group	250
9.12a	Form of Labour Use per Holding and Average Value of E-ratios by Economic Class in Agricultural Production	251
9.12b	Direct and Indirect Components of (Net) Hired-in Labour Days per Holding in Agricultural Production by Economic Class	252

9.12c	Form of Labour Use per Holding and Average Value of E-ratios by Farm-size Group	252
9.12d	Direct and Indirect Components of (Net) Hired-in Labour Days per Holding in Agricultural Production by Farm-size Group	253
10.1	Gross Sown and Net Sown Area per Household by Class	257
10.2	Cropping Intensity by Class	258
10.3	Percentage Distribution of Gross Sown Area (in acres) under Different Crops Sown for each Class	261
10.4a	Component-wise Percentage Distribution of Paid-out Costs of Cultivation for each Class	261
10.4b	Material Costs of Cultivation Per Holding (in Rs.) by Class	262
10.4c	Material Costs of Cultivation Per Acre (in Rs.) by Class	262
10.4d	Material Costs of Cultivation Per Acre (in Rs.) by Farm-size groups	264
10.5a	Percentage Distribution of Total Outlay on Hired-in Labour and its Breakup by Class	265
10.5b	Total Labour Outlay Per Holding and Per Acre (in Rs.) and its break-up by Class	264
10.5c	Percentage Distribution of Total Outlay on Hired-in Labour and its Breakup by Farm-size groups	267
10.5d	Total Labour Outlay Per Holding and Per Acre (in Rs.) as well as its break-up by Farm-size Groups	267
10.6a	Percentage Share of Hired-in Labour in Gross Value of Output and in Total Paid-out Costs by Class	269
10.6b	Percentage Share of Hired-in Labour in Gross Value of Output and in Total Paid-out Costs by Farm-size groups	269
10.7	Percentage Distribution of Gross Value of Output (Main Product + By-Product) by Crops Sown for each Class	272
10.8	Crop-wise Percentage Distribution of Output by Class	272
10.9a	Crop Output Per Holding by Economic Class (in quintal)	273
10.9b	Crop Output Per Capita by Economic Class (in quintal)	274
10.10a	Output Per Acre of Crops Sown by Economic Class	274

10.10b	Labour Productivity, i.e., Output Per Labour Day (1 Labour Day=8 hours) of Crops Sown by Economic Class	275
10.10c	Land Productivity, i.e., Output (in quintals) Per Acre of Crops Sown by Farm-Size Category	276
10.10d	Labour Productivity, i.e., Output Per Labour Day (1 Labour Day=8 Hours) of Crops Sown by Farm-Size Groups	276
11.1	Share of Crop and Livestock Output in Combined Gross Output Value by Class	282
11.2a	Gross Output Value per annum by Economic Class	283
11.2b	Gross Output Value from Crop and Livestock per annum by Farm-size Grouping	283
11.3a	Farm Labour Income (FLI) Per Annum from Crop and Livestock Production by Economic Class	285
11.3b	Farm Labour Income (FLI) per annum (in Rs.) from Crop and Livestock Production by Farm-size	285
11.4a	Rent and Interest Payments, Farm Labour Income, Farm Disposable Incomes from Combined Output of Crops and Livestock by Economic Class	287
11.4b	Farm Disposable Incomes Per Annum from Crops and Livestock by Economic Class	288
11.4c	Rent and Interest Payments, Farm Labour Income, Farm Disposable Incomes from Combined Output of Crops and Livestock by Farm-size	289
11.4d	Farm Disposable Incomes from Combined Output of Crop and Livestock by Farm Size	289
11.5a	Annual Shares of Rent and Rent plus Loan Interest in Farm Labour Income by Economic Class (Percent)	288
11.5b	Annual Shares of Rent and Rent plus Loan Interest in Farm Labour Income by farm size-group (Percentage)	290
11.6a	Per Household Family Labour Days and Imputed value of family labour by Economic Class	292
11.6b	Monthly Farm Disposable Surplus per Household from Cultivation and Livestock by Economic Class	292

11.6c	Per Household Family Labour Days and Imputed value of family labour by Farm-Size	293
11.6d	Monthly Farm Disposable Surplus per Household from Cultivation and Livestock by Farm-Size	294
11.7a	Incomes per household by Class from Sources other than direct cultivation and its percentage distribution	296
11.7b	Incomes per household by Farm Size from Sources other than direct cultivation and its percentage distribution	296
11.7c	Distribution of Total Income by Source for Class	298
11.7d	Distribution of Total Income by Source for each Farm-Size Group	298
11.8a	Class-wise Monthly Per Household Actual Incomes and Minimum Required Consumption Expenditure based on Poverty Lines in U.P., 2005-06	302
11.8b	Deviation of Monthly Per Household Actual Incomes from Poverty Level Incomes in U.P. by Class, 2005-06	302
11.9a	Monthly Per Household Actual Incomes and Minimum Required Consumption Expenditure based on Poverty Lines in U.P. by Farm-Size, 2005-06	303
11.9b	Deviation of Monthly Per Household Actual Incomes from Poverty Level Incomes in U.P. by Farm-Size, 2005-06	303
11.10a	Monthly Income from all sources, consumption and investment, All-India 2013	307
11.10b	Average monthly income from all sources, consumption and investment, Uttar-Pradesh 2013	308
11.11	Distribution of Average Monthly Income of an Agricultural Household by Source of Income, 2003 and 2013	309

List of Figures

- 11.1. Farm Disposable Income and Total Income from all Sources, by Class 304
- 11.2. Farm Disposable Surplus over Official Poverty level Spending and (2200 calories) Direct Poverty level Spending, by Class 305
- 11.3. Total Disposable Surplus over Official Poverty level Spending and (2200 calories) Direct Poverty level Spending, by Class. 305

Introduction

Contextualising the Issue of Agricultural Growth and Farmers' Incomes

The question of agricultural growth and farmers' incomes is inextricably linked to that of investment. Whether or not productive investment on land for agriculture will be undertaken depends on the prevailing mode of production and the role that the state plays in transforming the agrarian base of an economy. This process of transition from a predominantly agrarian to a developing and industrializing economy entails simultaneous changes in technology and production relations in both agriculture and industry. Inevitably, such changes in the way agricultural production is organized result in changing the balance of class forces in the countryside. Any study which seeks to examine long-term trends in agricultural growth and overall standards of living of 'farmers' must be based on a careful understanding of the nature of dominant and subordinate classes in rural areas.

In the absence of radical land reforms (as carried out historically in Russia after the 1917 revolution and in China from 1947¹), the level and extent to which accumulated surpluses are reinvested into agricultural production is dictated as much by profitability of agricultural production as by the existence of a class which is able and willing to undertake such investments for raising farm output and productivity. Clearly, profit earned in direct cultivation must be high enough to overcome pre-capitalist barriers (such as absolute ground rent and usurious interest under feudal relations) which inhibit the appropriators of accumulated surpluses from reinvesting them for raising agricultural growth and productivity.

That such a barrier to investment in agriculture was historically overcome in the present day capitalist nations of the industrial North (with significantly diverse paths to agrarian transition) is well known. If it was a class of capitalist farmers that emerged from within the ranks of an increasingly differentiated peasantry as

¹ (a) W. Hinton. 1966. *Fanshen: A Documentary of Revolution in a Chinese Village*. Monthly Review Press. (b) M. Dobb. 1951. *Some Aspects of Economic Development*. Especially the third lecture, 'The Process of Industrialization in the U.S.S.R.'. pp. 63-92. (c) M. Dobb. 1948. *Soviet Economic Development Since 1917*.

happened in Britain² as also in pre-revolutionary Russia with a significantly different socio-economic background and in a different historical context³, it was the ‘Junker’ turned capitalist class of landed elite which organized production along capitalist lines in Prussia.⁴

The analysis of rural class formation and its differentiation plays a significant part in understanding issues related to agrarian transformation in modern day developing nations of the third world. The history of all capitalist nations with an imperial past that have “resolved” their agrarian question highlights this. It is precisely keeping this historical context in mind that the present study, with its focus on agricultural growth and farmers’ incomes in India, demarcates itself from the widely prevalent mainstream literature on the subject which abstracts from class analysis. Specifically, it distinguishes itself from the static and a-historical nature of populist and neo-populist approaches by attempting to address this issue from the Marxist perspective of an agrarian society divided into classes, which may or may not be antagonistic.

The class structure is in critical ways determined and shaped by the pivotal role that the state plays in modernizing the overall economy. This is as true of countries that have historically successfully completed their industrialization drive along a capitalist path as of those that have adopted a socialist path of agrarian transition. Whether it be the enclosure movement of Britain of the 18th century, or the Prussian Edict of 1807, the numerous state supported programmes carried out in the U.S. or state led industrialization and modernization in Meiji Japan, all point towards the fact of significant state intervention for purposes of transforming the agrarian structure, particularly with regard to the ownership and operation of landholding, necessary for the development of capitalist mode of production.⁵

² T.J. Byres. 1991. ‘The Agrarian Question and Differing Forms of Capitalist Agrarian Transition: An Essay with Reference to Asia’ in Breman, Jan and Sudipto Mundle (ed.) *Rural Transformation in Asia*. pp.3-76 (see especially pp. 13-22 on ‘The English Path’).

³ V.I. Lenin. 1977. *Development of Capitalism in Russia*. Collected Works. Vol.3. See Chapters I to IV on Agriculture. pp. 37-330.

⁴ T.J. Byres in Breman, Jan and Sudipto Mundle (ed.) 1991. pp.3-76 (see especially pp. 22-27 on ‘The Prussian Path’). Also, see T.J. Byres. 1996. *Capitalism from Above and Capitalism from Below: An Essay in Comparative Political Economy*.

⁵ T.J. Byres in Breman and Mundle (ed.). 1991. Also, see G.C. Allen. 1946. *A Short Economic History of Modern Japan: 1867-1937*.

It is indeed ironical that today, these very advanced capitalist nations of the global North, in whose industrialisation the systematic implementation of protectionist policies such as infant industry protection, tariff and export subsidies played so crucial a role, have been advocating neoliberal policies to the third world developing countries of Asia, Africa and Latin America.⁶ As has been extensively discussed in the literature, the neoliberal reforms policy package implies imposition of mass demand-deflating fiscal and monetary policies on the one hand and opening up of the economy of developing countries in particular to “free trade” by a dismantling of the existing trade and investment barriers on the other. At the same time, it seeks to dismantle all price support mechanisms in place for stabilisation of prices to peasant producers in developing countries.⁷

The Bretton Woods institutions and the WTO, dominated by the U.S. and its allies in the Western world are today pressurizing the modern day developing countries in Asia and Africa to kick away the same ladder (viz., protectionism) that they themselves have used historically to attain the level of development that the third world is now seeking to attain. The neo-liberal economic reforms policy package with its emphasis on “free trade” and “fiscal discipline” is, in relation to the developing world, nothing but an economic tool used by the present-day industrialized Western countries to ensure their continued socio-economic and political domination.

It has been pointed out that the U.S., supposedly the home of the ‘free market’ and ‘free trade’ and the leader of the global capitalist world, had the highest GDP growth rates during the periods of particularly high protectionism in its history.⁸ The significance of the state’s role in the industrialization and modernization of all present day advanced capitalist countries is a fact that can hardly be ignored today. Moreover, this was true of today’s capitalist countries with an imperial past, with uninhibited access to colonial resources and markets, in whose industrialization transfers from their colonies played a major role (the most notable case in this regard being that of Britain). The significance of the state’s role for

⁶ Ha-Joon Chang. 2002. *Kicking Away the Ladder. Development Strategy in Historical Perspective.*

⁷ U. Patnaik. 2012. ‘Some Aspects of the Contemporary Agrarian Question’. *Agrarian South: Journal of Political Economy*. Vol. 1,3. pp.233-254. Also, see U. Patnaik. 1999. ‘Export-Oriented Agriculture and Food Security in Developing Countries and in India’ in *The Long Transition: Essays on political Economy*. pp. 351-416.

⁸ Ha-Joon Chang. 2002. *Kicking Away the Ladder*. p.30.

initiating and maintaining development to benefit the mass of their populations, is all the more for present day third world developing countries of Asia, Africa and Latin America which have no such possibility of free access to resources or markets. Any discussion on agricultural growth and living standards in the countryside sought to be achieved via agrarian transformation remains incomplete so long as it ignores the crucial part played by the state in facilitating such a transition. In India, state intervention in the post-independence period has mainly taken the form of attempting to promote capitalism in its countryside.

It has been argued that capitalist transition in general (whether it be 'capitalism from above' as happened in Germany or 'capitalism from below' as unfolded historically in North America⁹) is socio-economically and politically far more regressive compared to the progressive nature of the latter path of socialist transition as has been historically witnessed in erstwhile Soviet Union and China.¹⁰ This is essentially because of differences in the social spread of investment undertaken across the cultivating population in the two widely varying trajectories of agrarian reform noted above. In the former scenario, surplus appropriation and its reinvestment is by and large confined to a class of rich capitalist farmers who constitute a tiny minority of the total cultivating peasantry. This is in sharp contrast to an investment strategy pursued in the latter which has been one that is primarily socially broad based, thereby making it more egalitarian as well as enabling full utilisation of potential surpluses of labour that typically exist in all third world underdeveloped economies like ours.¹¹

A careful evaluation of post-independence developments in the specific context of the Indian economy would reveal that the Indian experience has been one of state led capitalist development in agriculture.¹² In the absence of redistributive land reforms, it has been one wherein the state has indeed played a critical role in

⁹ See T.J. Byres. 1996. *Capitalism from Above and Capitalism from Below: An Essay in Comparative Political Economy*.

¹⁰ (a) U. Patnaik. 1998. 'Alternative Strategies of Agrarian Change in Relation to Resources for Development in India and China' in D. Nayyar (ed.) *Economics As Ideology And Experience: Essays in Honour of Ashok Mitra*. pp. 223-259. Also, see (b) U. Patnaik. 1997. 'India's Agricultural Development in the Light of Historical Experience' in T.J. Byres (ed.) *The State, Development Planning and Liberalisation in India*. pp.172-197. (c) M. Dobb. 1951. *Some Aspects of Economic Development*. (d) W. Hinton. 2008. *Fanshen*.

¹¹ Ibid. M. Dobb. 1951 and U. Patnaik. 1997.

¹² U. Patnaik (ed.). 1990. *Agrarian Relations and Accumulation: The 'Mode of Production' Debate in India*.

rural class formation and accentuation of class differences within the peasantry over time. The specific form that state intervention took in our economy in the immediate post-independence period was however primarily dictated by the need to address and reverse the long-term stagnation that characterised the Indian economy in the half century prior to independence.

The first chapter seeks to analyse the impact on the colonial Indian economy and its people, of tribute extraction and its transfer to the metropolis throughout the two long centuries of British rule in India. It attempts to draw a link between the land revenue settlements introduced by the British on the one hand and the simultaneous emphasis on ‘forced commercialization’ of agriculture and ‘free trade’ policy on the other. The resultant agrarian structure and relations from colonial exploitation not only shaped the formation of peasant classes in her countryside but also dictated the pattern of agricultural development carried out by the state in independent India.

Given the structural stagnation of the economy under the burden of heavy and sustained unilateral transfer of investible surpluses to Britain for nearly two long centuries, the question of how to transform its agrarian structure so as to raise agricultural output and incomes, especially in rural areas, was bound to be the topmost priority of our policymakers in the period after decolonisation. This effectively required changing the social forms of surplus appropriation in the agrarian sphere, from unproductive forms like rents and loan interest, to productive forms like profit, which implied nothing less than transforming the mode of production. The feasibility and limits of change in the context of an ex-colonised country like India rested on an appropriate understanding of the nature of production relations that characterised the Indian countryside in the period after political independence from Britain.

The second chapter undertakes a review of the theoretical positions and approaches to analysing the changing agrarian structure of India. Beginning with a review of literature on the ‘mode of production debate’ in India, it discusses the critical issue of whether or not the period after decolonisation represents a distinct qualitative break from the colonial period with respect to the dominant production relations in Indian agriculture. An analysis of the agrarian structure of India must however not only be based on an understanding of the nature of agrarian relations

that exist but must also involve a careful study of the process of rural class formation and its differentiation. We critically review, the theoretically highly influential approach of the agrarian populists and the modern day versions of neo-populist theories, that are predicated on assuming relative homogeneity of production conditions within the agricultural population. But this assumption certainly goes against the available data for India which show that command over land, livestock and other assets varies widely even after adjusting for the size of family.

Given the reality of a peasantry which is highly differentiated socio-economically into different classes, in order to understand the dynamics of the changing rural structure, we need to use statistical methods which enable us to aggregate and interpret farm data meaningfully by locating the position of households within the system of production relations. This chapter briefly discusses the alternative approaches to identifying the rural poor in Indian agriculture and the reasons for the importance of a class based approach. The thesis demarcates itself from the widely prevalent, in our view flawed mainstream populist and neo-populist perspectives which completely disregard the processes associated with the development of capitalism in Indian countryside.

The third chapter, on the post-colonial Indian economy, examines the manner in which the independent Indian state has addressed the issue of raising agricultural output and improving the overall well-being of the toiling masses. It addresses the issue of the changing nature of agrarian relations in independent India compared to those that prevailed during the colonial period. It focuses on the role played by the state not only in peasant class formation and its differentiation but equally crucially, in raising investment levels and hence, the profitability of agricultural production. It asks the questions - how far did the state's efforts in transforming the agrarian structure via land reforms and promoting green revolution technology, succeed in inducing the dominant rural classes with surplus funds, to invest in agricultural production? To what extent was the green revolution technology successful in raising the abysmally low levels of per capita foodgrains production and availability that prevailed during the half century prior to Indian independence across rural India?

In the fourth chapter, an attempt is made to discuss the economic implications of relying on a development strategy that promoted capitalism in Indian

agriculture. The contradiction of attaining the primary objective of national 'self-sufficiency' by raising average per capita foodgrains availability but not addressing distribution adequately, as reflected in the continuing lack of access to food for the majority, is highlighted. A discussion follows of the impact of technological change introduced in a largely unreformed agrarian structure, on the pattern of agricultural growth in Uttar Pradesh and in India. Neoliberal policies of fiscal contraction which led to sharp cutbacks in state development expenditures, especially in the rural economy, seem to be reflected in the observed slowing down of long-term growth rates of crop production from the mid-1990s. The absence of high rates of inflation suggest that the demand side was also seriously affected by the deflationary policies of the state.

The fifth chapter examines long-term trends in the concentration of landholding in rural Uttar Pradesh in relation to All-India. It seeks to analyse the impact of land reforms, modern technology and neoliberal economic reforms on the changing structure of land ownership and operation in U.P. and India over the course of six decades starting from the early nineteen fifties, using data from NSSO on household ownership and operation.

Chapter six, focussing on the quarter century since the implementation of Fund-Bank and WTO advocated economic policies, analyses the nature of the neoliberal policy reforms being implemented in Indian agriculture. As the dominant discourse on economic development shifted from post-war reconstruction imperatives, to poverty eradication during the seventies and finally to neoliberal 'adjustment' of crisis ridden developing economies since the eighties, the policy prescription by the Bretton Woods institutions for developing countries in particular has accordingly changed over time. We review the debates surrounding those arguments and their implications in the context of India's agrarian sector.

Throughout the first part of the thesis, our primary concern has been twofold: first, to identify and apply an appropriate theoretical framework within which to analyse issues pertaining to agricultural growth and farmers' incomes and their overall well-being. The static and a-historical perspective of agrarian populist and neo-populist approaches which perceive 'the peasantry' as a socially undifferentiated homogeneous mass was found to be unsatisfactory and rather, the alternative dynamic class based approach to analysing the agrarian question in India

seemed to be more fruitful. Second, to the extent the existing official Indian data sources permit, we examined some of the broad macroeconomic trends that have a direct bearing on agricultural growth and the socio-economic conditions of cultivators in Uttar Pradesh and India – namely, trends in per capita foodgrains output and availability, growth rates of agricultural production, area and productivity, landholding pattern, tenancy, employment, public expenditure, calorie intake and poverty.

The existing official data sources are adequate if the objective is to study broad macroeconomic trends at the All-India or even state level. However, exclusive reliance on them is far from satisfactory if our aim is to examine the socio-economic well-being of farmers in Uttar-Pradesh, especially questions of their viability and profitability. The fact that ‘farmer’ is not a homogeneous category but is highly differentiated economically into different classes renders the existing data sources woefully inadequate for our purpose. For instance, though Comprehensive Scheme (CS) provides us a wealth of data on cost structure of as many as twenty nine crops for twenty states, it does not give us disaggregated data by economic class or even farm size. The lacunae in official data sources can only be addressed by undertaking intensive field studies.

For our field work we chose *Muzaffarnagar*, a district lying in the relatively agriculturally advanced western region of Uttar Pradesh. In chapter seven, we start with a description of the key features of our selected villages such as demographic profile, land utilization pattern, structure of landholding, cropping pattern and irrigation resources. The methodology adopted for selection of the sample villages and households is outlined.

Chapter eight discusses the many complex forms in which surplus labour is found to be appropriated by the dominant cultivating classes at the expense of the poor and marginalized in our study area. The “labour exploitation index” is adopted to determine the economic class status of sample households, and using the values of the index, we classify the cultivating households into three broad classes, namely landlords-turning capitalists plus rich peasants, middle peasants and poor peasants. The same data are also aggregated by using the standard method of farm-size groups. This enables us to see what difference if any, is made by directly applying a labour-use based index to households to separate out classes, compared to the

standard method of grouping according to farm size. While we expect the two methods of grouping to be associated, they would not give identical results. To establish the extent of association between economic class and farm-size, we applied a non-parametric statistical test namely the *chi-square* test of association.

On the basis of our two methods of grouping data, the factors affecting farmers' incomes and their overall ability or otherwise to make ends meet and to generate surpluses, have been examined in chapters nine, ten and eleven. Given that inequalities within the peasantry essentially stem from a highly skewed distribution of the means of production, the ninth chapter examines the structure of asset ownership and labour use among the three cultivating classes and over varying farm-size groups. The highly unequal access to resources for farming – land, livestock and other assets like agricultural machinery and implements – emerge clearly from the analysis. The extremely unequal distribution of farm assets between peasant classes is found to generate clearly differential patterns of labour use which separates one peasant class from another, with a minority depending mainly on hired and tenant labour, the middle group being mainly self-employed and the poor class mainly dependent on working for others. This chapter highlights the variations in the extent and type of labour use across the cultivating classes and finds that the farm size grouping does blunt the actual extent of differentiation.

Clearly the class which already owns most of the means of production, namely the landlord-capitalists and rich farmers, and who are also found to own most of the powered machinery, is precisely the one which is in a good position to accumulate further wealth through its ability to generate most of the agricultural output and economic surplus. At the other pole, it is the semi-landless and landless class of the rural poor, divorced from any substantial ownership of the means of production, which is found to suffer extreme poverty and deprivation. The tenth chapter analyses the variation in input, output and productivity among the sample households, both by class and acreage grouping. It presents the data showing the differential access to and use of farm inputs by the different classes and farm-size groups within the sample holdings. An extreme concentration of agricultural output is found to prevail with the privileged class of landlords-turning capitalists and rich farmers who have been seen already to monopolise the ownership of means of production. It finds ample support for the harsh reality of exploitation of the vast

mass of the landless and semi-landless rural poor at the hands of the class of landlord-capitalists and rich peasants. The spurious nature of the prevalent explanation for the well-known 'inverse' relationship between farm size and land productivity is discussed.

Chapter 11 calculates from the field data, the incomes of farming households by class and farm-size, and as expected finds a very high degree of inequality. It employs the concepts of farm labour income and farm disposable income and finds that inequality in the disposable income is higher compared to that in farm labour income, owing to a much higher burden of rent and interest payments on the poor which takes away more than half of their farm labour income. To examine the viability of the farms and their ability to generate surplus, the concept of farm disposable surplus is employed by deducting the estimated required poverty level spending by the household, using both the official estimate and an independent estimate of the latter. It is found that the poor cannot meet their consumption needs even at a minimal level from their farm activities and are in considerable deficit. The same result is found for the smallest sized farms.

This chapter also compares the final total income position with poverty level incomes to determine whether the rural poor who are below the poverty level consumption when relying on farm production alone, are able to pull themselves out of poverty when supplementary income sources are taken into account. The importance of additional earnings outside of direct cultivation becomes clear as it is found that only with these earnings, primarily from wage paid work, that the poor reach near a bare subsistence on the official measure.

The NSS data on the monthly income, consumption and investment pattern of agricultural households is available from the Situation Assessment Survey of farming households carried out in 2003 and 2013. The reasons that might account for the changing structure of average income during this decade are examined.

The on-going agrarian depression in the country, which has reached crisis proportions in many areas, throws up a number of questions not only with regard to the relative profitability of investment and output growth in agriculture but also as regards the crucial questions of the employment possibilities and living standards of the mass of the rural poor, namely the marginalized peasantry and agricultural

labourers. We have tried to address a wide range of questions, and while some answers have resulted, our investigation has thrown up many more questions which may well form the agenda for further research.

Chapter 1

Colonial Indian Economy under the Twin Influences of Tribute Extraction and Transfer to the Metropolis

The first chapter shows that far from re-investing agricultural surpluses extracted by way of land revenue taxes imposed by the Colonial state, their siphoning off from the economy altogether through ‘imperialism of free trade’ to serve British imperial interests had far-reaching consequences for the colonial economy. It resulted, on the one hand, in de-industrialization in the periphery and on the other, in an agrarian structure with many feudal and pre-capitalist growth inhibiting features. A long term structural stagnation of the economy in the fifty years prior to India’s independence was nothing but a manifestation of the adverse trends in the two productive sectors of the economy.

This chapter is divided into four sections. The first section outlines the economic rationale behind colonization of Indian economy by the British. It highlights the crucial role played by India as a colony in maintaining the overall British imperial order. The second section focuses on land revenue settlements introduced by the British as a mechanism to extract tribute from the toiling masses across the Indian countryside. The unilateral transfer of ‘tribute’ from the colony to the metropolis required large scale shifts in colonial India’s cropping pattern in favour of high valued commercial crops as also an emphasis on *laissez faire* policy. The third section examines the process of forced commercialization of agriculture in nineteenth century British India and the impact it had on colonial India’s agrarian sector. The far reaching implications of the process of surplus appropriation from the colony for nearly two long centuries and its unilateral transfer to the metropolis for colonial Indian economy and its people have been dealt with in the fourth and final section.

1.1. Locating the Economic Importance of India as a Colony to Overall British Imperial Order

Let us state at the outset that the main motive behind nearly two long centuries of British imperialism in India was the ‘Tribute’ or the ‘Drain of wealth’. As is well known, these were unilateral transfers of tax revenues from the colony to the metropolis which formed a crucial source of primary accumulation of capital in

Britain. The colony's direct merchandise export surplus to Britain was the measure of such transfers during the early period of British imperialism spanning roughly between 1770 and 1820 when the East India Company had trade monopoly over India. However, it was primarily through the politically imposed invisible charges such as the 'Home Charges' or 'expenditures incurred abroad', interest charges, gifts etc. in colonial India's current account that the colony's crucial foreign exchange earnings from its export surpluses to the rest of the world continued to be unilaterally transferred to Britain throughout the century marked by 'free trade' since the 1820s.¹

That the exchange earnings from the export surplus of colonial goods to the world were indeed a transfer and not a normal export surplus (as in trade between sovereign nations) is clear from the fact that the producers of such primary exportable commodities were paid for these goods out of land and other indirect taxes they themselves had given to the colonial state. So, while the agrarian producers of such export goods were actually not paid at all, the crucial foreign exchange earnings from the colony's net exports (both to the metropolis and to the rest of the world) were not permitted to flow back to the colony, but were appropriated by the metropole to settle its own trade deficits with other sovereign countries.²

The importance of 'Indian tribute' to British industrialization can be gauged from the fact that as much as 30 percent of net British domestic investment in 1801 came from such transfers from India alone.³ Taking all British colonies in Asia and West Indies together, the combined transfer expressed as percentage of gross domestic capital formation out of domestic savings in Britain increased from 62.2 percent in 1770 to as much as 86.4 percent in 1801 while as percentage of Britain's

¹ (i) Y.S. Pandit. 1937. *India's Balance of Indebtedness 1898-1913*. (ii) A.K. Banerji. 1982. *Aspects of Indo-British Economic Relations*. See Chapter 8 on 'Drain: The Concept and Reformulation'. pp. 176-206. (iii) B.N. Ganguli. 1965. *Dadabhai Naoroji and the Drain Theory*. (iv) U. Patnaik. 1984. 'Tribute Transfer and the Balance of Payments in The Cambridge Economic History of India, Volume II'. *Social Scientist*. Vol.12, 12, Reprinted in *The Long Transition: Essays on Political Economy*. pp. 305-322. (v) U. Patnaik. 2006. 'The Free Lunch: Transfers from the Tropical Colonies and Their Role in Capital Formation in Britain during the Industrial Revolution' in K.S. Jomo (ed.). *Globalization Under Hegemony: The Changing World Economy*. pp. 30-70. (vi) I. Habib. 2006. *Indian Economy 1858-1914*.

² U. Patnaik. 2006. 'The Free Lunch: Transfers from the Tropical Colonies and Their Role in Capital Formation in Britain during the Industrial Revolution' pp. 30-70. Especially see pp. 31-43.

³ I. Habib. 1995. 'Colonialization of the Indian Economy: 1757-1900' in *Essays in Indian History. Towards a Marxist Perception*. pp. 305-306.

GDP, it doubled from 3 to 6 percent during the same period.⁴ Such high levels of colonial transfers throughout the early period of British imperialism, the period of Industrial Revolution, meant that “Britons could have their cake and eat it too: maintain high consumption, reflected in a low savings rate, yet succeed in nearly doubling the investment rate between 1770 and 1800, maintaining it throughout the war years and into the post-War deflation.”⁵ Indeed, the purchasing power of Britain’s domestic exports rose by as much as 53.5 percent during the early period of British imperialism, viz., 1765-1804, attributed solely to re-exports of tropical colonial goods to the rest of the world.⁶

The importance of India as a colony to the overall British economy for almost two long centuries, from the acquisition of the *diwani* rights in Bengal in 1765 by the East India Company right up to independence, was however much more than such unilateral transfers alone. As British imperialism in India passed from one stage to the next, the form of surplus appropriation (or exploitation of the colony by the metropolis) and its realization itself underwent changes. Therefore, when the charter acts of 1813 and 1833 (which ended East India Company’s trade monopoly with India) posed a threat to the transfer of tribute from the colony to the metropolis, the ‘colonial objective itself changed from seizing Indian exportable commodities (such as muslin, calicoes, chintz, silk, indigo, spices etc.) to seizing the Indian market’. Thus, began the era of ‘free trade’ whereby colonial Indian economy was opened up to unhindered imports of British cotton textiles as well as other manufactured goods comprising iron, copper, gems, hardware and cutlery, guns, glass and modern machinery, even as her own exports of cotton textiles were subjected to various

⁴ U. Patnaik. 2006. ‘The Free Lunch: Transfers from the Tropical Colonies and Their Role in Capital Formation in Britain during the Industrial Revolution’ in K.S. Jomo (ed.). *Globalization Under Hegemony: The Changing World Economy*. See Table 2.6 on p.58. The combined transfer from British colonies in Asia and West Indies expressed as percentage of GDCF out of domestic savings in Britain remained at a high 85.9 percent in 1811 and drops to 65.9 percent in 1821. Furthermore, the transfer as a percentage of Britain’s GDP continued to be high at 6.01 percent in 1811 and drops only slightly to 5.27 percent in 1821. (See Table 2.6 on p.58). It must be noted that even such appallingly high estimates of transfer arrived at by the author are deliberate underestimates and are higher than Sayera Habib’s estimate of 70 percent for the year 1801 owing to greater accuracy of estimation procedure adopted. See pp. 49-62.

⁵ Ibid. Despite the domestic savings rate as percentage of GDP being low and varying between 5 to 8 percent during 1770 to 1821, GDCF as percentage of Britain’s GDP rose from 8.11 percent in 1770 to 13.27 percent in 1821 mainly on account of such colonial transfers to the metropolis. See Table 2.8 on p.60.

⁶ Ibid. See Table 2.2 on p.35.

mercantile and protectionist policies for more than a century and a half starting from 1700 at the hands of her colonial masters.⁷

In other words, the end of East India Company's trade monopoly over India and the beginning of the era of 'free trade' since the 1820s⁸ saw colonial India's merchandise trade surplus with Britain turn into a deficit owing to the flooding of Indian markets with British cotton textiles. Yet, barring a brief three year period immediately after World War I when the colony had an import surplus vis-a-vis Britain, its merchandise trade with the rest of the world was always in surplus, thereby ensuring an overall trade surplus in its current account for more than a century and a quarter.⁹ It was the foreign exchange earnings from colonial India's consistent and prolonged export surpluses with the rest of the world that was usurped by Britain using the council bills mechanism which ensured a unilateral transfer of as much as 25 to 27 percent of India's budgetary revenues even during the crisis years of the Great Depression of early 1930s when export prices were falling.¹⁰

Infact, it has been pointed out that the widely recognised 'large current account surplus' of Britain with India too existed only because of the politically imposed tribute on the subjugated colony. In reality, Britain did not have a large surplus with India as claimed by it if normal items of trade are considered.¹¹ Furthermore, even in years when Britain did have a surplus in merchandise and gold vis-a-vis India such as in 1910 as also in 1928 or even during World War I, the

⁷ I. Habib. 1995. 'Colonialization of the Indian Economy: 1757-1900'. pp. 296-335. Also see K.N.Chaudhuri. 1983. 'Foreign Trade and Balance of Payments' in *Cambridge Economic History of India (CEHI)*. Vol. II and U. Patnaik. 1984. 'Tribute Transfer and the Balance of Payments in *The Cambridge Economic History of India, Volume II*' reprinted in *The Long Transition: Essays on Political Economy* for a scathing critique of K.N. Chaudhari's article. pp. 305-322.

⁸ The century since the 1820s to 1913 witnessed an unprecedented growth in world foreign trade- either total or per capita. Neither the eighteenth century nor the half a century following 1913 saw such high rates of growth of foreign trade as prevailed during the nineteenth century. This is evident from the fact that the share of world trade per capita grew at a rate of 37 percent per decade for 1820-1913 as opposed to a decennial rate of growth of only 8 percent for 1913-1963. In terms of the share of world output that entered international markets, rate of growth of world trade grew at rates varying between close to 50 percent and 64 percent between 1820 and 1870 and fell to rates varying between 35 to 40 percent in the period marked by protectionism, viz., 1870-1913. See S. Kuznets. 1967. 'Quantitative Aspects of the Economic Growth of Nations: Level and Structure of Foreign Trade: Long-Term Trends'. *Economic Development and Cultural Change*. Vol. 15,2. pp. 1-140.

⁹ U. Patnaik. 2014. 'India in the World Economy 1900 to 1935: The Inter-War Depression and Britain's Demise as World Capitalist Leader'. *Social Scientist*. Vol. 42, 1-2, Jan.-Feb., pp. 13-35.

¹⁰ *Ibid.* p.20.

¹¹ *Ibid.*

surplus claimed by it was much more than the surplus that actually existed.¹² The difference between actual surplus and surplus claimed constituted the politically imposed tribute and was unilaterally transferred to the metropolis. The appropriation of rapidly rising colonial transfers which grew particularly sharply at a rate of 7.5 percent per annum between 1900 and 1925, enabled Britain to stimulate demand in the global economy by not only running huge current account deficits with North America, Europe and regions of recent settlement (Argentina, Australia and Canada) but by simultaneously exporting capital to these regions. The ever increasing BOP deficits were then settled by Britain using the politically imposed invisible liabilities in the colony's current account. In other words, colonial tribute played a major role in stabilising the gold standard, thereby allowing Britain to establish and retain its supremacy as a global capitalist leader for more than a century following the conclusion of Napoleonic Wars.¹³

Even though surplus appropriation was evidently the real basis underlying the imposition of 'free trade' in India, we find colonial rulers justifying it in terms of Ricardo's theory of comparative advantage according to which international trade is mutually beneficial for both the trading countries.¹⁴ It is however important to understand that quite apart from the fact that the Ricardian theory of comparative advantage even when used to justify trade between sovereign nations is logically wrong as it contains a 'verbal fallacy', its application to trade between the colony and colonizer is completely unwarranted.¹⁵ This is so because colonial trade was different from normal trade that takes place between sovereign countries. It was different because unlike in the latter case, trade and investment relations between the subjugated colony and the colonizer were based on relations of domination and were thus, far from being 'free' or 'fair'. While the use of military force and extra-

¹² Ibid. In 1910, whereas U.K.'s merchandise and gold surplus vis-à-vis India was £19 million, the surplus it actually claimed as its credit with India was a massive £60 million pounds. Similarly in 1928, against a merchandise and gold surplus of a mere £38 million that Britain had with India, the surplus claimed by it was an enormous £126 million which constituted colonial India's entire global export surplus earnings. Even during World War I, as much as £100 million of India's wartime exchange earnings were appropriated as 'gift' by Britain. See pp. 17-18.

¹³ Ibid.

¹⁴ P. R. Krugman and M. Obstfeld. 2003. *International Economics: Theory and Policy*. See Chapter 2 for the basic Ricardian Model of Comparative Advantage. pp. 10-35.

¹⁵ U. Patnaik. 2006. 'The Free Lunch: Transfers from the Tropical Colonies and Their Role in Capital Formation in Britain during the Industrial Revolution' in K.S. Jomo (ed.). *Globalization Under Hegemony: The Changing World Economy*. See pp. 31-43.

economic coercion through heavy rent and tax burden on colonial masses in making them grow exportable primary commodities made 'free trade' inherently unfree, the fact of surplus transfer from the colony to the metropolis made it hugely exploitative and hence, by its very nature, unfair.¹⁶

In other words, contrary to the claims made by Britain that foreign trade was as advantageous for the colony as it was for the coloniser, reality spoke otherwise. The benefits that accrued to Britain from keeping the colonial Indian market compulsorily open to its cotton textiles on the one hand and the devastating impact of such 'imperialism of free trade'¹⁷ on Indian artisans on the other is a well-known fact of Indian history.

The importance of India as a market for the virtual dumping of cheap British manufactured goods can be ascertained from the fact that by 1870, Britain was supplying as much as 80 percent of all India's imports.¹⁸ Though this percentage declined in the period marked by protectionism in all the major industrialising nations of the world (notably Germany, U.S.A., Belgium etc.), including in the British Dominions (comprising Canada, Australia, New-Zealand, parts of North America, South Africa and Ireland), it was still very high and ranged between 61 percent and 66.7 percent during the first decade and a half of the twentieth century preceding the outbreak of First world War.¹⁹

Cotton textiles, 'the pacemaker of industrial change' in Britain, the first industrial nation of the world,²⁰ accounted for as much as 50-60 percent of India's imports of goods from Britain throughout this period of new multilateralism spanning the last quarter of the nineteenth century to the first world war.²¹ Even during the great depression of 1873-96 which hit markets of Europe and North America equally hard, British cotton industry was saved from the 'worst excesses of the Franco-Prussian war boom and the ravages of the slump' only because of its heavy

¹⁶ Ibid.

¹⁷ I. Habib. 2006. 'Colonialism and the Indian Economy' in *Indian Economy: A People's History of India: 1858-1914*. See pp. 30-35.

¹⁸ S.B. Saul. 1960. *Studies in British Overseas Trade: 1870-1914*. See p.198.

¹⁹ A.K. Bagchi. 1972. 'The Economic Policy of the Government of India' in *Private Investment in India: 1900-1939*. pp. 34-67.

²⁰ E.J. Hobsbawm. 1999. 'The Industrial Revolution: 1780-1840' and 'The Origin of the Industrial Revolution' in *Industry and Empire*. See pp. 12-56.

²¹ S.B. Saul. 1960. 'British Trade with the Empire' in *Studies in British Overseas Trade*. pp. 188-207.

dependence on colonial Indian market over which it enjoyed unrivalled access owing to its supremacy in international imperial order.²²

The half a century or so following improvements in internal and external trade and transportation networks (which included construction of railways in most parts of the world, opening up of the Suez Canal in 1869, introduction of telegraph services etc.) saw bilateralism giving way to multilateralism in international trade settlements. At a time when the rapidly industrializing countries of Europe and North America were erecting stiff tariff barriers, particularly against British goods, the latter's reliance on her Indian colony was, if anything, greater than ever before. For, more than one-third of Britain's trade deficits with Europe and North America were financed by India alone in 1880.²³ Taking Britain's total merchandise trade deficits with the rest of the world during 1900-13, an even larger proportion, viz., more than two-fifths of the total was financed by re-exporting colonial India's primary goods such as wheat, rice, jute etc. to countries with which the U.K. had import surpluses on her merchandise trade account.²⁴

In other words, this insistence on 'free trade' policy by the colonial state in India throughout the century preceding the First World War suited British imperial needs and is therefore, hardly surprising. It provided them with a ready market in India for their own industrial products at a time when Britain was losing her hitherto established markets in Europe, mainly to Germany as also to Belgium as well as the U.S. who were all rapidly industrializing and erecting tariff barriers, particularly against British goods. At the same time, it enabled them to import goods from continental Europe (such as chemicals, synthetic dyestuffs etc. from Germany) and the U.S. (scientific instruments, motor-cars and parts, iron, steel and machinery etc.²⁵) by forcing India to maintain huge merchandise export surpluses with these very countries with which the U.K. had trade deficits in her current account.

In short, the nearly two centuries of sustained and sizeable colonial transfers to Britain, by offsetting the latter's ever rising BOP deficits on the one hand and

²² Ibid. Especially see pp. 100-105 wherein it has been noted that despite the crisis of 1873, Britain managed to increase its total exports of plain cottons by 11.5 percent between 1872-1879, primarily owing to its imperial access to colonial Indian markets.

²³ S.B. Saul. 1960. 'The Pattern of Settlements' in *Studies in British Overseas Trade: 1870-1914*. p. 56.

²⁴ Ibid. p. 62.

²⁵ Ibid. p. 37.

financing its capital exports on the other played a key role in establishing international investors' confidence in British currency, which enabled Britain to be the world capitalist leader and perform the demand management role in global economy so smoothly for so long. The fact that Britain could no longer do so and was forced off gold in 1931 when a prolonged fall in primary product prices since 1926 led to an 80 percent decline in India's trade surplus earnings with the rest of the world, shows that a decline in tribute was indeed a major cause of Britain's demise as world capitalist leader.²⁶

To sum up, while the substantial and rapidly rising surplus transfers from the colony continued to make the British better-off as a result of 'free trade' by offering them a far superior consumption basket than would have been possible in the absence of such transfers, such trade only resulted in declining foodgrains availability per head and nutrition levels and hence, a gradual impoverishment of the colonial economy and its people over time. (See section IV of this chapter).

It is then no wonder that this 'brightest jewel in the British Crown' on which the then industrializing metropolis depended so heavily, was herself by 1900, one of the poorest nations of the world.²⁷ It is indeed ironical that despite having the second largest merchandise export surplus in the world (next only to the U.S.) on the eve of First World War²⁸, nineteenth century colonial Indian economy, far from industrializing, witnessed de-industrialization throughout.²⁹

The explanation of this paradox lie as much in the moulding of the colony's entire agrarian structure to extract 'tribute' by way of imposing heavy land revenue demands on the peasantry as on the realization of this 'tribute' via the opening up of colonial Indian markets to virtual dumping of British manufactured goods for as long

²⁶ U. Patnaik. 2014. 'India in the World Economy 1900 to 1935: The Inter-War Depression and Britain's Demise as World Capitalist Leader'. *Social Scientist*. Vol. 42, 1-2, Jan.-Feb., pp. 13-35.

²⁷ A.K. Bagchi. 1972. *Private Investment in India: 1900-1939*.

²⁸ U. Patnaik. 1984. 'Tribute Transfer and Balance of Payments' reprinted in *The Long Transition*. p. 320. For a much more detailed analysis, see U. Patnaik. 2006. 'The Free Lunch: Transfers from the Tropical Colonies and Their Role in Capital Formation in Britain during the Industrial Revolution' in K.S. Jomo (ed.). *Globalization Under Hegemony: The Changing World Economy*.

²⁹ (a) A.K. Bagchi. 1976. 'De-industrialization in India in the Nineteenth Century: Some Theoretical Implications'. *The Journal of Development Studies*. Vol.12,2. pp. 135-164. (b) A.K. Bagchi. 1976. 'De-industrialization in Gangetic Bihar: 1809-1901' in B. De (ed.) *Essays in Honour of Professor S.C. Sarkar*. pp. 499-522. Also see (c) D. Thorner. 1962. 'De-Industrialization' in India, 1881-1931' in Daniel and Alice Thorner's *Land And Labour In India*. pp. 70-81.

as 175 years. This nearly two centuries long process of tribute extraction and its unilateral transfer to Britain, needless to mention, had disastrous consequences for the colonial Indian economy.

Below, we examine the mechanisms underlying the process of tribute extraction and its transfer to the metropolis. Specifically, we examine land revenue policy of the British, on which depended the extraction of tribute and the simultaneous emphasis on commercialization of agriculture and 'free trade' which were the only means through which the tribute thus extracted could be unilaterally transferred to Britain. A long-term structural stagnation of the colony, an inevitable fallout of the processes of tribute extraction and transfer, has been briefly touched upon in the concluding part of this chapter.

1.2. Land Revenue Settlements and Surplus Appropriation as its Underlying Basis

An assured and a steady supply of revenue resources, so crucial for the preservation of the empire thus acquired, was the main reason behind the introduction of land revenue settlements by the British in India. Revenue from land being the primary source of state's income, formulation of a comprehensive policy of land revenue taxes therefore became the top priority of the imperialists. A system of permanent and transferable private property rights in land vested in a certain class in society were to exist conditional upon the payment of a fixed monetary sum to the state as tax on land (as opposed to the customary tax on the produce of the land). Precisely on which class in society such ownership rights were to be conferred in turn depended on the overall agrarian structure of the area to be assessed.

The total rental of an estate was defined, following the prevalent economic concepts in Britain, as the gross output value less all costs of production and less return on stock. This rental was to be the source of government's revenue, after allowing the proprietor to retain a portion of the estimated rental. All this was to be simultaneously accompanied by a strict maintenance of law and order meant primarily to protect such private property rights, which in turn would guarantee a stable and a secured source of revenue from land to the colonial state.

The appropriation of bulk of agricultural surplus was indeed the true motive behind the introduction of all the land revenue settlements introduced by the British in India- the Permanent settlement in eastern parts of the country (covering Bengal, Bihar and Orissa), coastal areas of Andhra Pradesh and some parts of modern Uttar-Pradesh mainly Banaras districts; *Raiyatwari* settlement in Madras Presidency and the Deccan and finally, the *Mahalwari* or the temporary settlement in northern parts of the country, notably the Ceded and Conquered Provinces (modern U.P.), the Greater Punjab and the Central Provinces (modern M.P.).

Permanent Settlement³⁰, introduced first in Bengal by Cornwallis in 1793 was subsequently extended to Bihar and Orissa and finally to Banaras districts in 1795. According to this settlement, private ownership rights (permanent and transferable) in land were granted to the class of landed aristocracy, i.e., the *Zamindars* in each of these areas who in return, had to pay a tax fixed in perpetuity at 91 percent of the estimated rental to the colonial government.³¹ It has been reported that as much as 44 percent of the entire gross expenditure incurred by the British administrators in India during 1814-15 to 1818-19, i.e., the period when the Maratha wars were being fought, was paid for out of the Bengal land revenues alone³². Further, as much as 66 percent of the total expenditure incurred during this period was financed out of the gross revenues obtained from Bengal.

In other words, Bengal revenues not only helped the British in establishing themselves as a stable political power in large parts of India but very crucially, also provided them a politically loyal segment from within the local ruling classes. For it must be noted that in the absence of any legal restriction on the class of landed aristocracy to increase the rent extracted from actual tillers, incomes accruing to the *Zamindars* rose as the margin between the ever increasing gross rent and fixed revenue paid to the colonial state widened over time. Thus, with the expansion in physical area under cultivation and a rise in prices of primary produce (especially from the mid-nineteenth century onwards in response to the rapidly increasing demand for foodgrains from the fast industrializing nations of Europe and North America), land revenue in Bengal fell from 91 percent of gross rent (or estimated

³⁰ R. Guha. 1963. *A Rule of Property for Bengal*.

³¹ R.C. Dutt. 1906. 'Introduction' in *The Economic History of India*. Vol.1. p.xxiii.

³² *Ibid*.

rental) to between a quarter to one-third by the late nineteenth century.³³ However, far from re-investing such surpluses into agricultural production for raising productivity, the *Zamindars* resorted to subinfeudation which only tended to reinforce the system of rent exactions.

Thus, while the increased incomes of the *Zamindari* class of landed proprietors did not get translated into higher productivity via re-investment of those surpluses into agricultural production as happened in Britain, this experience with Permanent Settlement in Bengal led the colonialists to abandon it subsequently in favour of *Mahalwari* or Temporary settlement. The latter was a slight variant of the above *Zamindari* settlement of the Bengal type and called '*Mahalwari*' in the Ceded and Conquered Provinces as the unit of assessment was a '*mahal*' there. According to this settlement, revenue demand instead of being fixed in perpetuity was periodically revised upwards every 20-30 years. By doing so, the colonialists wanted to appropriate any possible increase in surplus over and above the share of the intermediary.

Raiyatwari, in contrast to the above permanent settlement was however, a direct settlement between the government and the *raiya*t, thereby eliminating intermediaries in the process.³⁴ The main principle behind the abolition of intermediaries was the appropriation by the colonial state of entire agricultural surplus (including the share of the intermediary) over and above the tiller's share constituting wages and normal profits. In all *Raiyatwari* areas, the *ryot* was to be given full proprietary rights in the land he cultivated in return for a fixed cash payment which was periodically revised upwards. This policy of direct settlement with the *ryots* was however practised only in areas where there were no *Mirasdars* (holders of hereditary property rights). But, in areas where such private property rights did exist, notably on the eastern side of the peninsula, the government continued to preserve the agrarian structure as such and made settlements with the *Mirasdars*.³⁵

³³ Ibid. R.C. Dutt quoted in U. Patnaik 'The Process of Commercialization Under Colonial Conditions' in *The Long Transition*. p.261.

³⁴ E. Stokes. 1989. *The English Utilitarians and India*. pp. 81-93. Also, see N. Mukherjee. 1962. *The Raiyatwari System in Madras, 1792-1827*. For Deccan, see Ravindra Kumar. 1968. *Western India in the Nineteenth Century*.

³⁵ N. Mukherjee. 1962. *The Raiyatwari System in Madras, 1792-1827*. pp. 204, 214-222.

Given fixity of revenue demand in permanently settled areas and its periodic revision in all other regions under temporary settlement including *mahalwari* and *raiayatwari*, it is not surprising that public investment in agriculture, particularly irrigation, was largely concentrated in the naturally fertile tracts of North Western Provinces and Punjab, which were all temporarily settled.³⁶ Thus, with the building of the East *Jamuna* Canal in the 1820s followed by the Ganges canal in the mid-1850s, a vast network of canal irrigation was initially developed in the richest of the Doab districts (comprising Meerut, *Muzaffarnagar* and Saharanpur) and was subsequently extended to the middle and lower Doab, the Rohilkhand as well as in a few districts to the south in Bundelkhand. In Punjab, public investment in irrigation, completed between 1874 and 1914, represented the largest public works undertaken by the British in India. Consequently, several thousand miles of hitherto barren and uncultivable lands could now be brought under the plough.³⁷

This emphasis by the colonial government on canal irrigated cultivation can be fully understood only when seen in the context of the massive revenues it generated not only by way of lucrative rate of return on British capital that financed such investments³⁸ but more crucially, by way of a rise in government revenues brought about by an increase in the value of agricultural produce. Therefore, as the value of agricultural produce in Northern areas of temporary settlement rose owing to state investment in public works such as irrigation, roads, railways etc., initial conditions were indeed created for the development of capitalism in agriculture in that region. After all, it was precisely this region comprising modern day Punjab, Haryana and Western U.P. where public investment in irrigation was historically concentrated, which emerged as agriculturally more advanced in terms of surplus generation than the permanently settled eastern region covering Bengal, Bihar and Orissa in the period after political independence from Britain. Moreover, it was the former region where a class of dynamic capitalist farmers could and did emerge after independence precisely because the initial conditions necessary for the emergence of this class were

³⁶ (a) E. Whitcombe. 1971. *Agrarian Conditions in Northern India*. Vol.I. The United Provinces Under British Rule, 1860-1900. pp. 62-70. (b) A.K. Bagchi quoted in U. Patnaik. 'The Process of Commercialization under Colonial Conditions' in *The Long Transition*. pp. 279-280.

³⁷ Ibid.

³⁸ E. Whitcombe. 1971. *Agrarian Conditions in Northern India*. In this regard, it has been noted that the rate of return on British capital invested in the East *Jamuna* canal, one of the most remunerative canals of British India, was as high as 23 percent. p. 64.

historically created there. However, despite the conditions for capitalist development being present, there was clearly no discernable change in techniques of production employed in agricultural production, which continued to be primitive and backward, even in this otherwise extremely lucrative region under British rule. Reasons for this lie in the overall macroeconomic environment within which agricultural production was carried out, which was such as to preclude their further growth and development in British India.

The devastating impact, especially on the small and marginal cultivators of unendurable rental burdens enforced by the colonial land revenue settlements is well known. This was true of all areas under British domination, whether permanently or temporarily settled (*Mahalwari* or *Raiyatwari*). While in the permanently settled areas, as much as 91 percent of the estimated rental fixed in perpetuity was initially paid as tax to the colonial government (as noted above), it was fixed at an equally high level of over 80 percent in the temporarily settled areas of the North including Awadh of modern Uttar-Pradesh. That the situation was no different in all the *raitwari* areas is once again a historical fact that hardly needs to be stated! If anything, land revenue rates in all such “peasant proprietorship” areas of the Madras Presidency and the Deccan as a rule were in fact relatively higher compared to the permanently settled areas.³⁹

So high was the burden of gross rent borne by the wretched peasantry that a governmental enquiry in nine districts of Madras Presidency in 1950 revealed that the rental was 9 to 33 times more than the land revenue assessment!⁴⁰ A similar situation prevailed in Bombay Presidency, Punjab and most other *raitwari* areas. Though 50 to 60 percent of the gross produce was normally paid as rent by the *raiyyat*, in some cases, the rents exceeded the rise in agricultural prices and reached the level of three-quarters of the gross produce in the twentieth century. In Tiruchirapalli district of Madras for instance, while prices were doubled, rents tripled between 1901-1926. In Punjab, in the same period, though prices went up by 50 percent, rents increased by 200 percent.⁴¹

³⁹ N. Mukherjee. 1962. *The Raitwari System in Madras*.

⁴⁰ National Commission on Agriculture, 1975. Report of the National Commission on Agriculture. Section XV on Agrarian Reforms. p. 11.

⁴¹ *Ibid.*

In short, colonial India witnessed virtually no ploughing back of agricultural surpluses into its agrarian lands for improving productivity and hence, output and income levels in its countryside. Instead, bulk of the surplus produce was appropriated by the colonial state via imposition of heavy land revenue taxes on the cultivating peasantry to serve British imperial needs. The unilateral transfer to Britain of the surpluses thus extracted known as the ‘drain of wealth’, however, required large scale shifts in cropping pattern in favour of high valued cash crops in India’s agrarian sector. It is this widespread commercialization of agriculture which colonial India witnessed and its crucial link with the policy of ‘laissez faire’ strictly adhered to by the British throughout the nineteenth century, that we turn our attention to in the following section.

1.3. Commercialization of Agriculture, “Free Trade” and Tribute Transfer

The unprecedented growth of commercial agriculture carried out under the newly emerging class of traders and merchants throughout the nineteenth century colonial India is a well known fact of Indian history.⁴² This emphasis on cultivation of cash crops for export purposes by the British was however crucially linked to the changes in property rights structure brought about by the introduction of land revenue settlements on the one hand and their insistence on pursuing the policy of ‘free trade’ on the other. That foreign demand for primary commodities was indeed very high is evident from the fact that world trade was dominated by such commodities from the last quarter of nineteenth century to 1937, a period which witnessed industrialization of presently developed countries and the consequent shift in composition of world output in favour of manufactured goods.⁴³ Let us begin by outlining the primary motive of the Colonial state behind the tremendous expansion of cash crop cultivation in nineteenth century colonial India.

⁴² (i) U. Patnaik. 1999. ‘The Process of Commercialization under Colonial Conditions’ in *The Long Transition*. (ii) B.B. Chowdhury. 1964. *Growth of Commercial Agriculture in Bengal:1757-1900*. (iii) E. Whitcombe. 1971. *Agrarian Conditions in Northern India*.

⁴³ The share of primary commodities in world trade, whether looked at in terms of volumes in current prices or constant (1913) prices remained consistently high at well above 60 percent from 1876 through to 1937. See Simon Kuznets. 1967. ‘Quantitative Aspects of the Economic Growth of Nations: Level and Structure of Foreign Trade: Long-Term Trends’. *Economic Development and Cultural Change*. Vol. 15,2. See Table 6 on p.33.

The rationale behind cash crop promotion by the colonial state in Indian agriculture was tribute transfer. It was mainly through the export of such high valued commercial crops like indigo, opium, tea, coffee, sugar, jute, cotton, etc. that a substantial part of Indian tax revenues set aside for financing investments incurred abroad or the 'Home Charges' were unilaterally transferred to Britain. Further, there were two ways through which a major proportion of the annual agricultural surplus was transferred to the U.K. One was through the direct export of commercial crops from India to Britain like tea, coffee, indigo, cotton etc.- commodities which the U.K. was simply incapable of producing. The other was through an indirect trilateral transfer involving countries with which Britain had a trade deficit.

The significance to Britain of India's trade with the rest of the world in the era of multilateral trade settlements throughout the century following *Pax Britannica* can hardly be exaggerated. In the early nineteenth century, when a decline in Indian exports of indigo, silk and cotton textiles posed a problem of realisation of tribute, the solution was found in exporting opium from India to China.⁴⁴ The triangular trading pattern that emerged between India, China and Britain after the infamous Opium wars (1840-42 and 1856-58) the British forced upon Chinese people was the mechanism by which British imports of Chinese tea and silk were financed using India's merchandise export surpluses with China. However, as China's tea exports to Britain declined from the mid-1870s and were replaced by those arising from industrialisation in Europe, Japan and America, this triangular trading arrangement between India, China and the U.K. collapsed, giving way to yet another pattern of multilateralism involving India, U.K. and countries of the Industrial North comprising Europe and North America. Indian exports of jute and jute goods (which developed into a major commercial crop after the Crimean War of 1854-56⁴⁵) to the U.S. to settle U.K.'s imports of automobiles and machinery etc. from the U.S. in the two decades prior to WW-I are a case in point.⁴⁶

⁴⁴ As much as one-third of total exports of colonial India in the late 1850s were of opium. This fell to about 7 percent in the 1890s. See A.K. Banerji. 1982. Chapter 2. 'Foreign Trade' in *Aspects of Indo-British Economic Relations 1858-1898*. pp. 12-15.

⁴⁵ B. Chowdhury. 1964. *Growth of Commercial Agriculture in Bengal: 1757-1900*. p.ii

⁴⁶ I. Habib. 1995. 'Colonialization of the Indian Economy: 1757-1900' in *Essays in Indian History. Towards a Marxist Perception*. pp. 323-326. Also, see S.B. Saul. 1960. 'British Trade with the Empire: India' and 'The Pattern of Settlements' in *Studies in British Overseas Trade*. pp. 63 and 197.

In other words, shifts in cropping pattern away from foodgrains and in favour of high valued commercial crops throughout the colonial Indian countryside were dictated as much by Britain's need to finance its trade deficits with the rest of the world as by the raw-material requirements of its own domestic industry. Thus, as Britain industrialized, cultivation of such primary products as indigo, cotton, poppy, sugarcane, jute, wheat, oilseeds etc. grew in hinterland in response to their rising demand in the metropolis.

The early phase of commercialization of agriculture in colonial India began in the last quarter of eighteenth century under the East India Company in Bengal, the earliest conquest of the British in India, and was marked by a tremendous growth in cultivation of commercial crops, notably indigo and poppy, primarily for export purposes. Faced with a stiff competition from West Indian sugar and Russian hemp and flax on the one hand, and its own inability to produce raw cotton in sufficient quantity on the other, it is not unnatural that "indigo, until superseded by opium, was the principle article for investment of capital as a medium of remittance to England."

⁴⁷ While direct coercion was exercised by the European planters to virtually force peasants to grow indigo, it was mainly indirect economic coercion based on the system of cash advances that was resorted to by the newly emerging class of merchants and traders to induce peasants to cultivate almost all other cash crops (except ofcourse poppy which was a monopoly of the British) throughout rural India. This was as true of permanently settled areas as of *raiayatwari* or *mahalwari* regions of temporary settlement.

In other words, whether we look at the expansion of opium and jute in Greater Bengal or of sugarcane, opium and wheat in the United Provinces, the cotton growing tracts of the Deccan and the Madras Presidency or the growth of wheat and cotton in Greater Punjab, all had small peasant economy as its basis of production and relied heavily on the system of cash advances under the newly emerging class of 'moneyed' people to economically coerce the peasants into growing them.⁴⁸ Clearly, high

⁴⁷ B. Chowdhury. 1964. *Growth of Commercial Agriculture in Bengal: 1757-1900*. Chapter II. p.83. It has been noted in this regard that between 1800 and 1826-30, there was a threefold increase in the export of Indigo from Bengal alone from 40,000 mds to approx. 1, 20,000 mds.

⁴⁸ See U. Patnaik. 'The Process of Commercialization under Colonial Conditions' in *The Long Transition* for an overview of how the process of commercialization was carried out in all areas under British domination. For specific case studies, see (i) E. Whitcombe. 1971. *Agrarian Conditions in*

working capital requirement of cash crops combined with the obligation to meet heavy and rigid revenue demands on the one hand and the timing of relatively cheap loans (relative to that offered by traditional moneylenders) advanced by traders and merchants on the other, left the tillers with virtually no option but to accept such cash advances for growing commercial crops.

The inevitable fallout of this process of enforced commercialisation on the structure of land ownership on the one hand and the emerging class of landless and semi-landless agricultural labourers is well known. As cultivators increasingly became indebted under the burden of excessive gross rents and highly unremunerative 'contract' prices fixed for their produce under the system of cash advances, profit margins accruing to traders and merchants kept rising. Under the circumstances, the structure of property rights put in place by the British land revenue settlements ensured a smooth transfer of land into the hands of this newly emerging class of moneylenders. In Bengal, widespread peasant discontent and anger against the feudal landlords manifested in the indigo disturbances of 1859-62 or the Pabna revolts during 1873-85,⁴⁹ led the colonial state to enact tenancy laws of 1859 and 1885 which only served to facilitate the transfer of property rights to such 'monied' people through sale or mortgage of land for arrears of revenue. Not surprisingly then, in a single year in Bengal, in 1881-82, as many as 34,000 *raiya* holdings were sold.⁵⁰ Further, in Kanpur alone, such moneylending classes extended their hold from 15.7 percent of the land in 1802 to 41.7 percent in 1900.⁵¹

A similar process of dispossession of *kunbis* from their lands by *vanis* can be observed in nineteenth century Maharashtra where this process of land transfers was greatly facilitated by the setting up of new courts of law. The well known Deccan riots of 1875 were nothing but a reflection of the sharpening contradictions between

Northern India. Also, see (ii) S. Amin. 1984. *Sugarcane and Sugar in Gorakhpur*. (iii) B. Chowdhury. 1964. *Growth of Commercial Agriculture in Bengal*. (iv) S. C. Mishra. 1982. 'Commercialisation, Peasant Differentiation and Merchant Capital in Late Nineteenth-Century Bombay and Punjab'. *The Journal of Peasant Studies*. Vol.10,1, pp. 3-51. (v) Also, see S.B. Saul. *Studies in British Overseas Trade*. Chapter VIII.

⁴⁹ K.K. Sengupta. 1974. *Pabna Disturbances and the Politics of Rent*. Also, see B.B. Choudhari. 1973. 'Peasant Movements in Bengal: 1850-1900'. *Nineteenth Century Studies*. Vol.3, July, pp. 341-397.

⁵⁰ U. Patnaik. 1999. 'The Process of Commercialization under Colonial Conditions' in *The Long Transition*. pp. 262-63.

⁵¹ E. Stokes. 1975. 'The Structure of Landholding in Uttar Pradesh, 1860-1948'. *The Indian Economic and Social History Review*. Vol. 12, No. 2, pp. 113-132. Reprinted in E. Stokes. 1978. *The Peasant And The Raj: Studies in agrarian society and peasant rebellion in colonial India*. p. 213.

these two classes.⁵² Despite the enactment of Deccan Agriculturists Relief Act restricting land transfers for debt, at least a quarter of the cultivators in Deccan are reported to have lost their land since 1875.⁵³

Thus, even as traders and merchants exercised an increasing hold over peasant production process including their landholdings, capital investment into agricultural lands continued to evade the agrarian sector at large. Technology used to produce agricultural output continued to be primitive and the overall socio-economic environment one in which parasitism flourished. Evictions and insecurity of tenants and rack-renting became a general phenomenon leading to increasing indebtedness and ultimately, loss of land among bulk of the rural masses. This pattern of land transfers, whereby a major proportion of the marginal and small cultivators were forced to give up their land under economic duress and join the ranks of landless agricultural labourers was observed in all areas under British domination, whether permanently or temporarily settled with the *ryots*. The tendency was particularly marked in all *raiyatwari* areas (including Bombay Presidency, Madras Presidency and Central Province), supposedly ‘the land of peasant proprietors’, where the proportion of agricultural labourers to total agricultural working population was more than half (53.8 percent) as against one-third in permanently settled areas of the eastern region in 1931.⁵⁴ For India as a whole, the proportion of agricultural labourers to total agricultural population was nearly 30 percent and when ‘general labour’ is added, it rises to approximately two-fifths (38 percent) in 1931. Labourers formed the single largest group within the total agricultural population.⁵⁵

In short, the process of forced commercialization under colonial conditions had a two-fold impact on our agrarian sector. While the use of a subtle form of economic exploitation in the form of cash advances to induce the peasants to grow commercial crops ensured a heavily concentrated structure of landholdings in favour of those forwarding such cash advances, (viz., merchants and traders as also feudal landlords), unendurable burden of gross rents on the cultivating tillers led to their increasing pauperization, rather than proletarianization. An increased polarization

⁵² R. Kumar. 1968. ‘The Deccan Riots of 1875’ in *Western India in the Nineteenth Century*. pp. 151-88.

⁵³ U. Patnaik. ‘The Process of Commercialization under Colonial Conditions’ in *The Long Transition*. p.278.

⁵⁴ S.J. Patel. *Agricultural Labourers in Modern India and Pakistan*. Chapter 3.

⁵⁵ *Ibid.* pp. 14-15.

within the peasantry could thus be seen as a result of the above two trends set in motion by the growth of commercial agriculture largely carried out under conditions of duress. Further, far from industry absorbing such reserves of surplus labour (as would indeed have been an ideal scenario had there been a progressive structural transformation in the colony of the type witnessed in the metropolis), the ‘one –way free trade’ policy of the British resulting in deindustrialization tended to reinforce the existing state of backwardness in our agrarian sector. With productive potential of both agriculture and industry thwarted under the twin influence of tribute extraction and its transfer for nearly two long centuries, it is hardly surprising that colonial Indian economy witnessed a long-term stagnation in the fifty years preceding decolonization.

1.4. Structural Stagnation of Colonial Economy- An Inevitable Fallout of Tribute Extraction and Realisation

A long-term structural stagnation of the colonial economy was an inevitable fallout of the process of tribute extraction and its transfer carried out for nearly two long centuries to suit British imperial interests. Far from witnessing an industrial transformation of the type seen in all modern day advanced capitalist countries, the all- India figures on occupational distribution of workforce for 1881 to 1951 distinctly reveal a structurally stagnant economy.⁵⁶ (See Table 1.1 below).

Table 1.1: Workers in agriculture and manufacture per hundred workers: India, 1881 to 1951

Year	Agriculture		Manufacture	
	Males	Females	Males	Females
1881	70	69	..	..
1891	..	..	..	..
1901	72	78	..	..
1911	74	77	11	11
1921	75	79	10	10
1931	74	78	10	9
1941	..	..	..	..
1951	69	80	11	7

Source: Thorner and Thorner (1960: 13) quoted in Byres, T.J. “India: Capitalist Industrialization or Structural Stasis?” in Bienfeld, Manfred and Martin Godfrey (Ed.) ‘The Struggle for Development: National Strategies in an International Context’. p.139.

Note: The figures have been calculated from Census data and there was no Census in 1941. They are for the Indian Union (i.e., they exclude Burma and Pakistan).

⁵⁶ T.J. Byres. 1985. ‘India: Capitalist Industrialization or Structural Stasis?’ in Bienfeld, Manfred and Martin Godfrey (Ed.) *The Struggle for development: National Strategies in an International Context*. pp. 135-164.

As is evident from Table 1.1 above, the shift in workforce from agriculture to industry, so crucial for the overall progressive development of an economy in the capitalist direction, clearly did not take place in colonial India. While the percentage of male workforce employed in agriculture remained roughly constant between 1881 and 1951, proportion of female workforce actually rose significantly from 69 percent to 80 percent. A similar trend can be seen in manufacturing, wherein the percentage of male workforce remained constant at 11 percent between 1911 and 1951, while females registered a noticeable decline from an already low of 11 percent to 7 percent.

So, while the gradually disintegrating industry failed to absorb an increasing number of pauperized peasants rendered landless and semi-landless by the colonial state's economic policies, the agrarian sector itself was characterized by a long-term stagnation. The rate of growth of foodgrains output increased at an average rate of barely 0.11 percent for British India as a whole between 1891 to 1947, with Greater Bengal registering a negative rate of growth of 0.73 percent per year for foodgrains while the combined growth rate for the other five regions taken together registered an average of 0.47 percent per year for the same period.⁵⁷ This stagnation was mainly on account of rice output which declined in Bengal at an average rate of 0.76 percent per year in contrast to 0.09 percent for British India as a whole. Further, population grew at an average rate of 0.67 percent between 1891 and 1947. This implied an average rate of decline in per capita foodgrains output of one percent or more per year between 1911-12 and 1941 (i.e., the period of declining trend of foodgrains) for British India. In Bengal, this period of decline was thirty years and the reduction in per capita foodgrains availability was 38 percent.⁵⁸

In sharp contrast to the trends in foodgrains noted above, average growth rate of non-foodgrains was 1.31 percent per year between 1891 and 1947. Per capita non-foodgrains output had increased by 28 percent between 1893-94 and 1911-12 and further increased by another 14 percent during 1911-12 and 1941-42. This increase in the latter period took place despite a decline in crop output and a slow acceleration in population growth.

⁵⁷ G. Blyn. 1966. *Agricultural Trends in India: 1891-1947. Output, Availability and Productivity*. Chapter IX. p.241. The other five regions include the Central Provinces, Madras Presidency, Bombay-Sind, Greater Punjab and the United Provinces.

⁵⁸ Ibid.

Thus, the economy was faced with a situation where a decline in per capita foodgrains output was combined with an increase in per capita cash crop production. Against the background of a stagnant per capita real national income between 1918 and 1947, this more than ten-fold rise in the rate of growth of non-foodgrains output even as per head foodgrains production declined by as much as 25 percent makes sense only when we understand how crucially significant the growth of commercial agriculture was for the transfer of tribute to Britain. That the politically imposed “Home Charges” increased from 16 percent of the total tax revenue receipts in the 1880s to 27 percent by the 1930s could largely be attributed to the forced commercialization that nineteenth century colonial Indian agriculture was subjected to.⁵⁹

The situation was further worsened by falling agricultural prices in India during the Great Depression. Consequently, the international barter terms of trade for India fell by 30 percent between 1922 and 1932. Within the economy, the intersectoral terms of trade for agriculture declined by 33 percent between 1918 and 1929-30 and a further decline of 17 percent upto 1934-35. This had a disastrous impact on the rural economy whereby peasants were forced to sell increasing levels of output at declining prices to meet unchanged revenue demands. To this effect, it has been stated that around two-fifths of the rural population was immiserised in the process.⁶⁰ Added to this was the burden of inflationary war financing in which total government outlays added up to 38 billion rupees during 1941-46. Bengal, due to its strategic location was the worst affected. The period between 1941 and 1943 saw a four fold increase in rice prices. This completely devastated Bengal’s rural population and ultimately resulted in the disastrous **Bengal Famine** of 1943-44, which claimed atleast 2.7 to 3.1 million lives.⁶¹

It was against this extremely adverse socio-economic and political background that the post-colonial Indian state had to embark on the process of industrialization and modernization, with a simultaneous emphasis on stimulating the growth of agricultural output and farmers’ incomes in rural India. How far were these concerns addressed by the independent Indian state in the decades following decolonization?

⁵⁹ U. Patnaik. 1999. ‘Food Availability and Famine: A Longer View’ in *The Long Transition*. pp. 329-330.

⁶⁰ *Ibid.* p.335.

⁶¹ *Ibid.*

Specifically, to what extent were the workings of the “built-in-depressor”⁶² inherent in India’s agrarian structure on the eve of her independence dealt with by the post-colonial Indian state? This is what we turn to in the next chapter.

⁶² D. Thorner. 1976. *The Agrarian Prospect in India*. pp. 15-17.

Chapter 2

Theoretical Positions and Approaches to Analyzing Changing Agrarian Structure of India

The pattern of agricultural and hence, overall growth and development of an economy, particularly in modern day transition to capitalism societies like India, depends as much upon the nature of productive forces in agriculture as on the prevailing production relations in its countryside. The crucial significance of agrarian relations particularly that of peasant class differentiation, in the transformation of modern day advanced European societies from feudalism to capitalism has been highlighted by Marxist academics like Dobb and Hilton, among others, in the well-known transition debate from feudalism to capitalism in Europe (Dobb, 1946; Hilton, 1976).¹

In an ex-colonial country like India specifically, there are two aspects to analyzing its agrarian structure. The first aspect relates to the nature of production relations in Indian agriculture. How has the process of massive surplus transfers from the colony to the metropolis throughout the two centuries of its socio-economic and political subjugation to Britain affected the development of capitalism in Indian agriculture in the post-independence period? Specifically, does the period after political independence from Britain represent a distinct qualitative break from the colonial period with respect to the dominant production relations across the Indian countryside? Or is it marked by the persistence of relations of production that prevailed during the colonial period?

The second aspect, closely linked to the first, is the theoretical aspect of rural class formation and its differentiation over time. Following the Marxist-Leninist analytical method, should the peasantry be viewed as being economically differentiated into different classes with conflicting interests? Or should it be treated

¹ M. Dobb. 1946. *Studies In The Development Of Capitalism*. See especially chapter 2, viz., 'The Decline of Feudalism and the Growth of Towns'. pp. 33-82. Revised edition, 1963 (Paperback). Also, see R. Hilton (ed.). 1976. 'The Transition from Feudalism to Capitalism' with an Introduction by Rodney Hilton and contributions by Dobb and Hilton, among others. For a contrasting perspective on the origins of agrarian capitalism in medieval England, see R. Brenner. 1976. 'Agrarian Class Structure And Economic Development In Pre-Industrial Europe'. *Past and Present*. Vol. 70, 1. pp. 30-75. Also, see T.J. Byres. 2006. 'Differentiation of the Peasantry Under Feudalism and the Transition to Capitalism: In Defence of Rodney Hilton'. *Journal of Agrarian Change*. Vol. 6,1. pp. 17-68.

as an undifferentiated homogeneous mass, as the static and ahistorical school of thought of the populist Narodniks and the neo-populists like Chayanov would have us believe? How we look at the class structure of 'the peasantry' is crucially determined by our understanding of the nature of production relations that prevail in Indian agriculture.

The chapter is divided into three sections. The first section seeks to examine the debate surrounding the nature of production relations in India's agrarian sector. Specifically, it attempts to analyse the two key positions that either deny or acknowledge the development of capitalism in Indian agriculture in the period after political independence from Britain. It argues that the nature of developing capitalist relations alongside the existing feudal relations of surplus extraction (such as usurious moneylending and petty tenancy) in the period following the introduction of modern technology was indeed qualitatively different from the predominantly pre-capitalist feudal relations of production that characterized Indian agriculture throughout the colonial period.

However, those who argue that there exists no qualitative break in the nature of dominant agrarian relations between the colonial and post-colonial Indian countryside are also the ones who fail to capture the harsh reality of socio-economic differentiation that exists within the peasantry. Their conception of the peasantry as a socially undifferentiated homogeneous mass owes its theoretical lineage to the late nineteenth and early twentieth century Russian populist Narodniks and the neo-populist Chayanovian school of thought. The second section attempts to critically review, from a Marxist-Leninist perspective, all such populist and modern day versions of neo-populist theories that are currently being invoked by the advocates of neoliberalism to justify increasing trade liberalization and globalization of third world agricultures. It emphasizes the fact that the static and ahistorical nature of agrarian populism and neo-populism lie in its complete disregard for the processes associated with the development of capitalism in the countryside. It argues that the emphasis on the continued superiority of 'peasant' farming over 'landlord' farming by the neo-populists even in dynamic situations of differential access to improved technology among an increasingly differentiated peasantry results from their failure to address the

impact of changing agrarian relations on technological progress and rural class structure.

The third section briefly evaluates the alternative methodological approaches to identifying the rural poor in Indian agriculture. Given the inadequacy of the widely used statistical indices like landholding size for demarcating rural households into varying socio-economic groups, this section points to an urgent need for an alternative criterion that is rooted in the reality of antagonistic class relations which can fruitfully capture the several ways in which those at the margins of our society are socio-economically and politically exploited by those at the top of the rural class hierarchy. “Labour exploitation index”, it is argued, is indeed one such index that can be used for the empirical classification of rural households into different socio-economic classes.

2.1. Capitalist Development in Indian Agriculture: The Debate

Maurice Dobb states that the essence of capitalism lies neither in the ‘capitalist spirit’ of calculation and rationality nor in the notion of capitalism conceived as primarily a commercial enterprise. Arguing from a historical materialist perspective, he gives the meaning of capitalism as a distinctive socio-economic order whose essence must be seen in a particular ‘mode of production’ (Dobb, 1946).² It is this Marxist conception of capitalism as a specific ‘mode of production’ that we adopt throughout our study.

By the Marxist analytical concept of the ‘mode of production’ is meant an internally balanced whole comprising of the social productive forces and the production relations connected with them and based on a given type of ownership of the means of production (Lange, 1963).³ The mode of production at a definite stage in social development of any society can be antagonistic or non-antagonistic depending on whether there is monopoly ownership or social ownership of the means of production. All antagonistic modes of production where society is divided into classes are based on exploitative class relations. However, the mode of surplus

² M. Dobb. 1946. *Studies in the Development of Capitalism*. See Chapter 1. ‘Capitalism’. pp. 1-32.

³ Oscar Lange. 1963. *Political Economy*. Vol. I. General Problems. Translated from Polish by A.H. Walker. See Chapters 1 and 2 for elementary Marxist concepts. pp. 1-48. Also, see ‘Preface to A Contribution To The Critique Of Political Economy’ in Karl Marx and Frederick Engels (ed.). 1977. *Selected Works*. Vol. 1. pp. 503-504.

appropriation or the manner in which the exploitation of one class by another is carried out is a fundamental feature on the basis of which to distinguish one social formation from another (Dobb, 1946; U. Patnaik, 1990).

Thus, feudalism is analytically distinct from capitalism owing primarily to a fundamental difference in the nature of production relations in the two types of social formations. In a feudal society marked by very low levels of land and labour productivity, surplus is coercively extracted directly by the dominant land owning classes from the actual tillers primarily in the form of **feudal rent**. Such direct relations of domination of the unfree or bonded peasantry by the dominant landowning classes under feudalism are replaced by purely contractual or “free” market relations between the capitalists and wage workers in a capitalist society. Unlike feudalism, capitalism is a system where **profit** in the process of production carried out primarily with wage labour is the typical form in which surplus is appropriated by the class monopolizing the ownership of means of production.

Applying the Marxist conceptual framework outlined above to the specific context of an ex-colonial country like India, Utsa Patnaik explains why despite the existence of a large class of agricultural labourers and production of commercial crops for export purposes, the mode of production in colonial India was far from capitalist in nature (U. Patnaik, 1990).⁴ It remained feudal in that the dominant agrarian relations continued to be dictated by the exploitative relationship that existed between the landed proprietors comprising the feudal landlord (or the colonial state in raiyatwari areas), trader and moneylender on the one hand and the indebted peasantry on the other. Far from reinvesting the appropriated surplus in production in order to generate more surplus value on an ever expanding scale (which is what capitalism entails), traditional avenues of surplus utilization such as usurious moneylending, trading and purchase of land for leasing-out to petty tenants continued to be the preferred options by the dominant rural classes monopolizing landed property.⁵

The disastrous impact of the siphoning off from the economy altogether of agricultural surpluses extracted by way of heavy land revenue taxes imposed on the

⁴ (i) U. Patnaik (ed.). 1990. 'Introduction' in *Agrarian Relations and Accumulation: The 'Mode of Production' Debate in India*. pp. 1-10. Also, see (ii) U. Patnaik. 1990. 'Capitalist Development in Agriculture: Note' in U. Patnaik (ed.). pp. 38-56.

⁵ *Ibid.*

colonial Indian peasantry by the British is well known. Indeed, the process of tribute extraction and its transfer to the metropolis through ‘imperialism of free trade’ to serve British imperial interests was actually what lay behind the increasing ‘pauperization rather than proletarianization’ of colonial Indian peasants (U. Patnaik, 1999).⁶ Not only did the unendurable burden of rent and revenue payments lead to increasing numbers of pauperized cultivators joining the ranks of landless agricultural labourers (which by 1931, amounted to 30 percent of the total population employed in agriculture), the widespread shift to commercial crop cultivation by all sections of the cultivating peasantry was more a reflection of ‘forced commercialization’ carried out under economic duress rather than a voluntary response of farmers to favourable market conditions.⁷

In other words, the working of the “built-in-depressor” in colonial India’s agrarian structure meant that reinvestment of agricultural surplus in production for accumulation purposes within the domestic economy simply did not take place throughout the colonial period. Hence, the most lucrative and dominant forms of surplus appropriation, viz., feudal rent and land revenue taxes, usurious moneylending and trading profit continued to pose an insurmountable feudal barrier to capitalist investments in agricultural production during the two centuries of British rule in India. (See chapter 1)

Given the extremely adverse macroeconomic environment that prevailed throughout the period of British imperialism in India, there can hardly be any doubt about the predominantly feudal nature of production relations that characterized the colonial Indian countryside. However, it is the nature of agrarian relations in the post-independence period shaped by nearly two centuries of socio-economic and political subjugation to British imperialism, which has been a subject of intense and lively debate in India during the 1970s (A. Thorner, 1982; U. Patnaik, 1990).⁸

⁶ U. Patnaik. 1999. ‘On the Evolution of the Class of Agricultural Labourers in India’ in *The Long Transition: Essays on Political Economy*. pp. 181-189.

⁷ U. Patnaik. 1999. ‘The Process of Commercialization under Colonial Conditions’ in *The Long Transition: Essays on Political Economy*. pp. 252-304.

⁸ (i) U. Patnaik (ed.). 1990. *Agrarian Relations and Accumulation: The ‘Mode of Production’ Debate in India*. For a comprehensive review of the ‘mode of production’ debate in India, see (ii) A. Thorner. 1982. ‘Semi-Feudalism or Capitalism? Contemporary Debate on Classes and Modes of Production in India’. *EPW*. Vol. 17, Nos.49, 50 and 51. December 4, 11 and 18.

Of the various theoretical positions that have been put forward, the debate has primarily been centered on two key positions that either deny or acknowledge the development of capitalism in Indian agriculture in the period after decolonization.

The first approach towards the analysis of agrarian relations in independent India adopted by eminent economists like Pradhan H. Prasad, Amit Bhaduri and Ranjit Sau emphasizes the fact that there exists no qualitative break between the colonial and post-colonial periods in the dominant relations of production. Specifically, it implies a continuation of the semi-feudal production relations as prevailed during the colonial period, even in the post-independent Indian countryside. With Marxian ground rent and usurious interest on moneylending continuing to be the most important forms of surplus appropriation by the dominant class of landed proprietors, India's agrarian sector remains 'pre-capitalist' according to this viewpoint even after nearly two decades of the introduction of technological reforms (Prasad, 1974 and 1986; Bhaduri, 1983).⁹

Given the primacy of the feudal mode of extraction and utilization of surplus, perpetuation of the semi-feudal bonds of serfdom implies that the primary interest of the rural landowning classes lies in maximizing their hold on direct producers rather than on maximizing their rate of return on land. Sharecropping and usury are the mechanisms through which the rural rich maintain a firm grip over the impoverished rural masses. Far from directly cultivating their holdings along capitalist lines and reinvesting the surplus extracted in the process of production for accumulation purposes, the dominant class of landlords cum moneylenders lease out their land to petty tenants on crop-sharing basis and utilize the surplus for giving consumption loans on exorbitant interest rates to the rural poor. Not only do the onerous terms of the lease contract together with usurious interest rates on consumption loans result in a perpetual state of indebtedness and hence, very low consumption levels and semi-servile living standards for the vast mass of the rural producers, the system hardly offers any incentive to the sharecroppers to put in extra labour and hence, leads to

⁹ (i) P. H. Prasad. 1986. 'Institutional Reforms and Agricultural Growth'. *Social Scientist*. Vol. 14,6. pp. 3-19. Also, see (ii) P. H. Prasad. 1974. 'Reactionary Role of Usurer's Capital in Rural India'. *EPW*. Vol.9, 32/34. (iii) A. Bhaduri. 1983. *The Economic Structure of Backward Agriculture*.

underutilisation of available resources, bringing about low land and labour productivity as well.¹⁰

This tendency on the part of the rural elite to resort to the practice of sharecropping as also usury reflects the fact that the landowning classes are more concerned about preventing an improvement in the economic condition of the actual tillers rather than maximizing their own rate of profit by reinvesting their surpluses in agricultural production. Alternatively, it means that the semi-feudal production relations act as a barrier to agricultural growth and development through technological improvement (Bhaduri, 1973 and 1983).¹¹ This is because given the assumption of a fixed rental share, a technological innovation which increases output per unit area would also tend to ameliorate the economic condition of the sharecropper. This improvement in the tenant's economic condition following the adoption of productivity raising investment would reduce his indebtedness and hence, interest income of the landlord. The subsequent weakening of the socio-economic and political control of the landlord over his tenant inhibits the adoption of improved technology by making it undesirable for the former and hence, results in technological backwardness.

Bhaduri's model outlined above has been criticized by Utsa Patnaik for its unduly restrictive assumptions (U. Patnaik, 1994). U. Patnaik has questioned the validity of the crucial assumption of institutionally-fixed rental share in Bhaduri's model. Given the powerful socio-economic status of the landlord, she asks- "what prevented him from raising the rental share as output rose with investment regardless of legal maxima"? Further, the interlinking of rent and credit extraction by a landlord from an indebted petty tenant, which is the only landlord-small tenant relation that the model considers, is "a small fraction of all such landlord-small tenant relations" that exist in reality. By putting forth her model of rent as barrier-to-investment, she argues that "such a barrier operates regardless of whether there is interlinking of leasing and credit by the same landlord, or not; all that is required is that the landlord does invest

¹⁰ P. H. Prasad. 1973. 'Production Relations: Achilles' Heel of Indian Planning'. *EPW*. Vol.8,19. pp. 869-872.

¹¹ A. Bhaduri. 1973. 'A Study in Agricultural Backwardness Under Semi-Feudalism.' *The Economic Journal*. Vol. 83,329. pp. 120-137. Also, See A. Bhaduri. 1983. *The Economic Structure Of Backward Agriculture*. Chapter IV. 'Maintenance Of Forced Commerce Through Technological Backwardness'. pp. 51-68.

his money capital in one or more uses, not necessarily in the form of interest-bearing loans alone and even if he does lend, not necessarily to the same tenant to whom he leases land.” Thus, according to U. Patnaik, the crucial condition for landlords to overcome this barrier of rent and start investing in productivity-raising technical improvements is that “capital in direct cultivation must produce a surplus profit equal to rent over and above an average profit.”¹² (More on this approach later)

Yet another perspective, questioning the sustainability of the growth of capitalist tendency in Indian agriculture witnessed particularly after the introduction of the new technology, has been advanced by Ranjit Sau in favour of the persistence of semi-feudal agrarian relations of production.¹³ The explanation behind the predominance of semi-feudalism in Indian agriculture is provided in terms of limits to the development of capitalism in agriculture as explained by Kautsky and Lenin. These include massive unemployment levels giving rise to hunger rents, the tendency on the part of the small peasants to cling on to their tiny holdings for lack of alternative employment opportunities, thereby making centralization of several plots of land difficult for the capitalist farmer, continued existence of pre-capitalist barriers to capitalist development, such as usury etc. (Sau, 1976).¹⁴

The implication of the above understanding of exploitative agrarian relationships as semi-feudal is that there has been little or no progress in capitalist relations of production in Indian agriculture since independence. Therefore, according to this perspective, the end of British rule in India had not been marked by a definite qualitative change in the forces of production (i.e., the technology and the productivity levels associated with it) and in relations of production across the Indian countryside. If the colonial period saw the British imperialists as primarily exploiting the Indian peasantry through the imposition of heavy and rigid land revenue taxes in collusion with the dominant local class of feudal landlords, traders and moneylenders, the post-colonial period continued to witness the socio-economic and political domination of an undifferentiated mass of petty producers constituting “the peasantry” at the hands of the same feudal elements (viz., local moneylenders cum feudal landlords) who were strengthened by the British Raj. Furthermore, since the

¹² U. Patnaik. 1994. ‘Tenancy and Accumulation’ in K.Basu (ed.) *Agrarian Questions*. pp. 174-187.

¹³ R. Sau. 1976. ‘Can Capitalism Develop in Indian Agriculture?’ *EPW*. Vol. 11,52.

¹⁴ *Ibid.*

pattern of surplus extraction and its utilization inhibits capital investments in agricultural production, the level of technological progress and hence, agricultural growth and productivity continued to remain low even after decolonization, according to this school of thought.

However, this approach to analyzing the nature of dominant exploitative relationships defining Indian agriculture in the period after independence has been sharply contested.

The second and the alternative approach to analyzing changing agrarian relations in post-independence Indian agriculture is that of Utsa Patnaik's. This theoretical position, while recognizing that "ex-colonial countries like India are characterized precisely by a limited and distorted development of capitalism which does not revolutionize the 'mode of production'", does at the same time identify a definite qualitative break in agrarian relations between the colonial and post-colonial periods. It differentiates a crucial sense in which the post-colonial Indian countryside has witnessed a tendency towards developing capitalist relations that was clearly absent during the colonial period (U. Patnaik, 1990).¹⁵

In sharp contrast to the positions outlined above, this approach argues that the specific form of state intervention in the economy since independence has indeed led to the breaking down of the feudal barrier to capital investments in agricultural production. Specifically, a change in agrarian relations between the colonial and post-independence periods must be attributed to the capitalist path of agrarian development that the Indian state has been pursuing since independence. That the nature of such capitalist development has been limited and distorted by the prolonged experience of colonialism is ofcourse widely recognized and well documented by the protagonist of this perspective.

Thus, according to this approach, while the landholding structure (both ownership and operation) continues to be heavily skewed in favour of the traditionally dominant landowning classes even after several land reform legislations carried out in Indian agriculture, there has undoubtedly been a change in the manner in which

¹⁵ U. Patnaik. 1990. 'Introduction' and 'Capitalist Development in Agriculture: Note' in U. Patnaik (ed.) *Agrarian Relations and Accumulation: The 'Mode of Production' Debate in India*. pp. 1-10 & 38-56.

agricultural production is organized in the period since independence (U. Patnaik, 1972).¹⁶

A number of factors have been highlighted that account for this distinctive break in the overall macroeconomic environment between the colonial and post-independence periods. The secular expansion in the home market enabled by large scale state spending under the five year plans of the hitherto massive colonial surplus transfers to the metropolis provided the initial and much needed stimulus to the then structurally stagnant economy. Though land reforms failed to break the effective monopoly control of land with the erstwhile feudals, nevertheless, the formation of both landlord- turned capitalists and of dynamic rich farmers was aided by the specific nature of land reforms carried out across the Indian countryside. Furthermore, it was a combination of sharply rising prices of agricultural produce from the mid-nineteen sixties and the introduction of state supported productivity-raising green revolution technology that finally helped overcome the feudal rent barrier and induced the landowning classes to invest in farm production.

Barring some regions of the country such as Bihar in eastern India where several studies have shown that dominant production relations continued to be feudal, most parts of the country did witness the growth of capitalist relations in agriculture in the post-independence period. Furthermore, the events as have subsequently unfolded in India's agrarian sector reveal that not only had capitalism penetrated nearly all regions of the Indian countryside by the late nineteen eighties, the sharply rising inequality within the cultivating population is a reflection of the ongoing process of class differentiation within the Indian peasantry.

It is important to understand that those who fail to identify a definite qualitative break in production relations between the colonial and post-colonial Indian countryside are also the ones who effectively deny the reality of the ongoing process of class differentiation within the peasantry. For the process of rural class formation and its differentiation into distinct socio-economic classes is undoubtedly an expression of developing capitalist relations in the countryside.

¹⁶ U.Patnaik. 1972. 'Development of Capitalism in Agriculture- I & II'. *Social Scientist*. Vol.1, 2 & 3. pp. 15-31 & 3-19.

This erroneous understanding of the peasantry as a socio-economically undifferentiated group of people who do not exploit each other owes its theoretical lineage to the late nineteenth and early twentieth century Russian populists and neo-populists like Chayanov whose ideas are widely prevalent in mainstream literature on the subject and continue to shape agrarian policies across the third world developing countries like India even after nearly a century today.

It is to a critical review, from the Marxist-Leninist perspective, of agrarian populist and modern day versions of neo-populist theories that are currently being invoked by the advocates of neoliberalism to justify increasing trade liberalization and globalization of third world agricultures, that we turn to in the section below.

2.2. A Critical Review of Populist and Neo-Populist Approaches to Analysing Agrarian Structure and their Implications for the Nature of Desirable Agrarian Change

There are several approaches within the populist and neo-populist tradition that assert the socio-economic homogeneity of peasantry as a class. The views of the Russian populist Narodniks idealizing self-sufficient petty peasant production were theoretically invalidated by Lenin in his classic, *The Development of Capitalism in Russia*. The ideas and arguments that emerged from the classic debate between Lenin and the Narodniks have had a profound ideological influence on later writings on the crucial subject of peasant studies and agrarian change in both developed and particularly developing countries having substantial peasant populations, such as India (Lenin, 1977; U. Patnaik, 1979; Bernstein, 2009).¹⁷

The central issue on which Lenin and the Populist Narodniks debated in pre-revolutionary Russia of the late nineteenth and early twentieth century was whether 'the peasantry' constituted a unique and stable homogeneous social category producing mainly for subsistence or was it differentiated into different socio-

¹⁷ (i) V.I. Lenin. 1977. *The Development of Capitalism in Russia*. Vol. 3. Collected Works. See especially chapters 1 and 2. pp. 37-187. (ii) U. Patnaik. 1979. 'Neo-Populism and Marxsim: The Chayanovian View of the Agrarian Question and its Fundamental Fallacy'. *The Journal of Peasant Studies*. Vol. 6,4. Reprinted in U. Patnaik. *The Long Transition: Essays on Political Economy*. pp. 1-62. (iii) H. Bernstein. 2009. 'V.I. Lenin and A.V. Chayanov: looking back, looking forward'. *The Journal of Peasant Studies*. Vol. 36, 1. pp. 55-81.

economic classes, with the specific position of ‘the peasants’ being located in the agrarian class structure of a given mode of production (V.I. Lenin, 1977).¹⁸

A.V. Chayanov, a very influential neo-populist economist, viewed the peasants as a socio-economically undifferentiated mass of self-perpetuating petty producers who cultivate primarily with family labour for meeting subsistence requirements. His neo-populist views glorifying petty production are reflected in the works of a number of leading economists including Amartya Sen and Daniel Thorner (A. Sen, 1962 and 1966; D. Thorner, 1966).¹⁹ Mark Harrison, while reviewing Chayanov’s works on the Economics of the Russian Peasantry, points out that since the basic aim of such small scale holdings is self-subsistence rather than profit maximization, this organizational form of production is marked by the lack of technical change and accumulation (Harrison, 1977; D. Thorner, 1966).²⁰

M. Harrison and Utsa Patnaik have both critically reviewed Chayanov’s works on the Russian Peasantry and contrasted his classless approach to the theory of *Peasant Farm Organization* with Lenin’s class based approach in his *The Development of Capitalism in Russia*. In sharp contrast to Lenin’s theory of “class differentiation among the peasantry”, Chayanov developed the concept of “demographic differentiation” which effectively assumed away class inequalities within the peasantry (Chayanov, 1966; Harrison, 1975; U. Patnaik, 1979).²¹ According to Chayanov’s theory of “demographic differentiation”, the origins of economic inequality within the cultivating population were demographic and not

¹⁸ V.I. Lenin. 1977. *The Development of Capitalism in Russia*. Vol. 3. Collected Works. See especially chapters 1 and 2. pp. 37-187.

¹⁹ (i) A.K. Sen. (i) 1962. ‘An Aspect of Indian Agriculture’. *The Economic Weekly*. Annual Number. pp. 243 & 245-246. (ii) A.K. Sen. 1966. ‘Peasants and Dualism with or without Surplus Labour’. *The Journal of Political Economy*. Vol. 74, 5. pp. 425-450. (ii) D. Thorner. 1966. ‘Chayanov’s Concept of Peasant Economy’ in D. Thorner, B. Kerblay and R.E.F. Smith (ed.). *A.V. Chayanov on The Theory of Peasant Economy*. First Indian Edition, 1987. pp. xi-xxiii.

²⁰ M. Harrison. 1977. ‘The Peasant Mode of Production in the Work of A.V. Chayanov’. *The Journal of Peasant Studies*. Vol. 4, 4. pp. 323-33. Also, see D. Thorner’s ‘Chayanov’s Concept of Peasant Economy’ and B. Kerblay’s ‘A.V. Chayanov: Life, Career, Works’ in D. Thorner, B. Kerblay and R.E.F. Smith (ed.). *A.V. Chayanov on The Theory of Peasant Economy*. First Indian Edition, 1987.

²¹ (i) A.V. Chayanov. 1966. ‘On the Theory of Non-Capitalist Economic Systems’ in D. Thorner, B. Kerblay and R.E.F. Smith (ed.), *A.V. Chayanov on The Theory of Peasant Economy*. Translated by Christel Lane. pp. 1-28. (ii) M. Harrison. 1975. Chayanov and the Economics of the Russian Peasantry. *The Journal of Peasant Studies*. Vol. 2,4. pp. 389-417. (iii) U. Patnaik. 1979. ‘Neo-Populism and Marxsim: The Chayanovian View of the Agrarian Question and its Fundamental Fallacy’. *The Journal of Peasant Studies*. Vol. 6, 4. Reprinted in U. Patnaik. *The Long Transition: Essays on Political Economy*. pp. 1-62.

social in nature. Inequalities in income and farm size between peasant households existed primarily because of variations in family size and composition, measured by the dependency ratio (i.e., consumer-worker ratio). As family size increases and with it the dependency ratio, the peasant household requires more land to prevent its income per head from falling. In Chayanov's model, the farm size grows in response to growing family size. Thus, according to this argument, family size is the independent variable and farm size is taken to be the adjusting or dependent variable. This assertion of Chayanov's that peasant families are successfully able to acquire access to more land as family size increases has been questioned by several Marxist intellectuals like M. Harrison and U. Patnaik.

Furthermore, the absence of socio-economic inequality within 'the peasantry' implies that though peasants do not exploit each other, the entire cultivating population as a singular class has been historically subjugated and exploited in its relations with other socio-economically dominant groups such as moneylenders, landlords, traders, the state or the 'urban class' in general (Bernstein, 2009). Thus, the populist and neo-populist tradition abstracts from social relationships within the cultivating population.

While critically reviewing Chayanov's works on *The Theory of Peasant Economy*, both Harrison and Patnaik explain that the emphasis of the populist and neo-populist tradition on the subjective notion of 'self-exploitation of family labour' as also an absence of an objectively defined criterion of minimum consumption standard, is the basis on which rests its two most important propositions concerning the superior 'viability' and 'efficiency' of family farms relative to capitalist farms (M. Harrison, 1975 and 1977; U. Patnaik, 1979). The intrinsic 'viability' and 'efficiency' of peasant economy as theorized by Chayanov has been explained in terms of the ability of family farms to exploit themselves by working their holdings more intensively despite getting a rate of return to their labour which is even lower than the market wage rate, and accordingly, lowering their family consumption. The increased total output per unit area that results from the 'self-exploitation' of family labour is interpreted as 'advantageous' to such holdings and accounts for the superior efficiency of small scale family-labour based farms relative to large scale hired-labour based capitalist farms.

The extent to which Chayanov's family farm exploits itself is directly determined by the ratio of consumers to workers, or simply put, the dependency ratio, as noted above. It is due to variations in this demographic variable, viz., the dependency ratio, which in turn depends on family size and composition that inequality arises not only in income and consumption per capita but also in owned area between cultivators in the Chayanovian neo-populist tradition.²²

Another approach within the neo-populist tradition upholding Chayanov's view of the peasantry as a homogeneous undifferentiated mass is that of Teodor Shanin's. While Chayanov explained social inequalities within the Russian peasantry in terms of his theory of demographic differentiation, Shanin rationalized the existing socio-economic disparities between cultivators in terms of his social mobility thesis (Shanin, 1972).²³ His 'social mobility thesis' has been critically evaluated by Terry Cox and Mark Harrison (Cox, 1979; Harrison, 1977). Advanced as a critique of Lenin's theory of class differentiation within the peasantry, T. Cox argues that Shanin's theory of social mobility is a 'multi-variant' analysis of the various centrifugal and centripetal tendencies to which a typical peasant household is subjected over the course of a generational lifecycle and which over time have the net cumulative effect of conforming to a pattern of cyclical mobility. Thus, refuting the conventional wisdom of the time that the development of capitalism was leading to increasing class polarization of the Russian countryside, Shanin's theory of social mobility implied that "any one peasant household might reasonably expect to experience both poverty and relative wealth in the course of a generational cycle (Cox, 1979)."²⁴

In other words, the neo-populist approaches to the then existing social stratification within the Russian peasantry are theories of cyclical mobility of peasant

²² Ibid.

²³ T. Shanin. 1972. *The Awkward Class. Political Sociology Of Peasantry In A Developing Society: Russia 1910-1925*. For a critique of Shanin's social mobility theory, see T. Cox. 1979. 'Awkward Class or Awkward Classes? Class Relations in the Russian Peasantry before Collectivization'. *The Journal of Peasant Studies*. Vol. 7,1. pp.70-85. See p. 72 and M. Harrison. 1977. 'Resource Allocation and Agrarian Class Formation: The Problem of Social Mobility among Russian Peasant Households, 1880-1930'. *The Journal of Peasant Studies*. Vol. 4, 2. pp. 127-161.

²⁴ T. Cox. 1979. 'Awkward Class or Awkward Classes? Class Relations in the Russian Peasantry before Collectivization.' *The Journal of Peasant Studies*. p.72.

households which effectively assume away class inequalities within the cultivating population.

In sharp contrast to the ahistorical approaches of neo-populist theories abstracting from social relationships and assuming away inequalities between cultivators by treating peasants as an undifferentiated homogeneous mass is the Marxist-Leninist theory of class differentiation within the peasantry. According to the Marxist-Leninist theory, “the peasantry” as argued by the Populists and Neo-populists alike is neither homogeneous nor stable at a point in time or over a period of time. As capitalism progresses, “the peasantry” which is but one of the three socio-economically distinct classes into which the entire cultivating population is divided, gradually shrinks as it dissolves itself into one of the two major classes of capital, viz., agrarian bourgeoisie or the capitalists and the landless and semi-landless class of agricultural labourers or the rural proletariat (Lenin, 1977).²⁵

Lenin, in his criticism of the Populist Narodniks, argued that to assert the social homogeneity of the peasants is to assume away the reality of socio-economic inequalities that existed between the cultivators as a result of a highly skewed distribution of landholding. It is this extreme inequality in the access to crucial resources like land and other non-land assets that results in the subjugation and domination of the landless and semi-landless rural poor by the rural rich monopolizing the ownership of means of production.²⁶

U. Patnaik, while advancing a critique of Chayanov’s static approach to the study of Russian peasantry, draws our attention to the “Marxist emphasis on the unequal distribution of means of production which generates exploitative production relations” (U. Patnaik, 1979). She argues that it is precisely the concentration of landed property in the hands of a rich minority and the consequent shortage of land relative to consumption needs with the vast majority of the rural poor that compels the latter to hire-out labour to meet their subsistence requirements. Alternatively, concentration of landed property in the hands of a few is what gives rise to

²⁵ V.I. Lenin. 1977. *The Development of Capitalism in Russia*. See chapter 2, viz., ‘The Differentiation Of The Peasantry’. pp. 70-187.

²⁶ Ibid.

exploitative relationships within the peasantry, thereby socio-economically separating one peasant class from another.²⁷

Thus, the Marxist-Leninist position on inequality in landholding between cultivators is a class theoretic approach and is fundamentally different from the classless neo-populist Chayanovian position which sees land scarcity as a generalized phenomenon affecting all cultivators at some stage of their reproductive life cycle (based on demographic variables like the worker-consumer ratio) and hence, is not understood as being confined to a specific class of semi-landless and landless rural poor.²⁸ Not only is the Marxist theorization of inequality between cultivators radically different from the explanation put forward by the neo-populists, the key theoretical propositions of the latter concerning the superior viability and efficiency of small scale family farms relative to large scale capitalist farms have been contested and severely criticized by the former school of thought on account of the faulty assumptions and flawed theoretical premise on which it is based.

To begin with, the emphasis on a subjective notion of subsistence and the corresponding absence of a historically determined objective criterion of minimum consumption as 'necessary labour' in populist and neo-populist theorization of superior viability of family farms over capitalist farms has been questioned by Marxist intellectuals (M. Harrison, 1975; U. Patnaik, 1979).²⁹ Far from glorifying the compulsion of lowering consumption to near-starvation or starvation levels by Chayanov's family farms and denoting it as a mark of their superior viability, both Harrison and U. Patnaik argue that such enforced hunger must instead be condemned and recognized as arising out of an extremely unequal asset ownership pattern in an overall macroeconomic framework which lacks adequate remunerative employment opportunities.³⁰

Furthermore, U. Patnaik has argued that the neo-populist idea of both superior viability and efficiency of small scale family farms over large scale capitalist farms

²⁷ U. Patnaik. 1979. 'Neo-Populism and Marxsim: The Chayanovian View of the Agrarian Question and its Fundamental Fallacy' in *The Long Transition: Essays on Political Economy*. Especially see pp. 22-23.

²⁸ Ibid.

²⁹ (i) M. Harrison. 1975. 'Chayanov and the Economics of the Russian Peasantry'. *The Journal of Peasant Studies*. Vol. 2, 4. pp. 389-417. (ii) U. Patnaik. 1979. 'Neo-Populism and Marxsim: The Chayanovian View of the Agrarian Question and its Fundamental Fallacy'. *The Journal of Peasant Studies*. Vol. 6,4, July. Reprinted in *The Long Transition: Essays on Political Economy*. pp. 1-62.

³⁰ Ibid.

follows logically from the erroneous assumption of identical production functions for the two organizationally different types of producers belonging to socio-economically distinct classes (U. Patnaik, 1994).³¹ This is because for profit driven capitalist farmers to coexist with family labour based subsistence holdings, surplus per unit area must rise substantially so that the barrier of absolute ground rent to capital investments in farm production can be successfully surmounted. In the absence of abolition of private property through radical land reforms, the only way of achieving such a discrete rise in surplus per unit area is through the adoption of productivity raising improved techniques of production that is qualitatively distinct from the technology employed on small-scale family farms.

Indian history is replete with instances of 'hunger rents' paid by the marginalized rural poor that have posed a barrier to capital investments in agricultural production from being undertaken. It is also one of the many countries where this barrier has subsequently been broken and capital flowed into productivity raising technological innovations in its countryside, particularly after the introduction of 'green revolution' in the mid-nineteen sixties. In such a dynamic situation of changing technology, to assert that an inverse relationship continues to exist between farm size and output per acre, implying that small scale family farms are more efficient compared to large scale hired-labour based capitalist farms, is not only theoretically invalid but is unsubstantiated empirically as well (M. Chattopadhyay and A. Sengupta, 1997-98; G. Dyer, 1998).³²

As the diffusion of modern technology and rising agricultural prices stimulated the spread of capitalism across the Indian countryside, the economies of scale reaped by large scale capitalist holdings ensured a breakdown of the hitherto existing widely quoted inverse relationship between farm size and output per unit area (A. Sen, 1962, 1964 and 1966; K. Bhardwaj, 1974; G. Dyer, 1997).³³ Far from the

³¹ U. Patnaik. 1994. 'Tenancy and Accumulation' in K. Basu (ed.) *Agrarian Questions*. pp. 155-201. Also see U. Patnaik. 1979. 'Neo-Populism and Marxsim: The Chayanovian View of the Agrarian Question and its Fundamental Fallacy' in *The Long Transition: Essays on Political Economy*. pp. 1-62.

³² M. Chattopadhyay and A. Sengupta. 1997-98. 'Farm Size and Productivity- A New Look at the Old Debate'. *EPW*. Review of Agriculture. Vol. 32,52. pp. A-172 – A-175. For a critique of Chattopadhyay and Sengupta, see G. Dyer. 1998. 'Farm Size and Productivity- A New Look at the Old Debate Revisited'. *EPW*. Vol. 33, 26. pp. A-113 to A-116.

³³ (i) A. K. Sen. 1962. 'An Aspect of Indian Agriculture'. *The Economic Weekly*. Annual Number. pp. 243 & 245-246. (ii) A. K. Sen. 1964. 'Size of Holdings and Productivity'. *The Economic Weekly*. Annual

superior efficiency of small scale family farms relative to large scale capitalist farms as was indeed advocated by agrarian populists and the neo-populists, it was the large scale capitalist holdings employing higher capital and labour per unit area motivated by rising profitability, that produced a higher average and total output compared to small scale peasant holdings worked with family labour (U. Patnaik, 1987).³⁴

In other words, the post-green revolution phase in Indian agriculture saw this inverse relationship between farm size and land productivity turn into a positive one.³⁵ Even our own findings based on primary data collected from the agriculturally dynamic district of Muzaffarnagar in Western Uttar Pradesh in India reveal that the nature of this relationship between farm size and output per unit area is far from static and is crucially shaped by the dominant agrarian relations that exist in that area. (See Chapters 10 and 11)

Yet, we repeatedly find arguments being made in favour of redistributive land reforms in labour surplus developing countries on the grounds that output per unit area is higher on small scale family farms than on large scale capitalist farms (K. Griffin, A.R. Khan and A. Ickowitz, 2002; D.S. Swamy,).³⁶ Before we proceed, let us note that all such approaches invoking the inverse relationship to make a case for agrarian reform with the twin objectives of ‘equity’ and ‘efficiency’ are nothing but a variant of Russian neo-populism and have been critically termed as “neo-classical neo-populism” by the Marxist political economist, T.J. Byres (Byres, 2004a, 2004b; Dyer, 2004).³⁷

Number. pp. 323 & 325-326. (iii) A. Sen. 1966. ‘Peasants and Dualism with or without Surplus Labour’. *The Journal of Political Economy*. Vol. 74, 5. pp. 425-450. For a critical perspective and a comprehensive account of the debate that ensued after the publication of Amartya Sen’s 1962 and 1964 articles in *EPW* on the inverse relationship between farm size and land productivity in India, see K. Bhardwaj. 1974. *Production Conditions in Indian Agriculture: A Study Based On Farm Management Surveys*. Also, see G. Dyer. 1997. *Class, State And Agricultural Productivity In Egypt. Study of the Inverse Relationship between Farm Size and Land Productivity*. See the foreword by T. J. Byres and pp.1-63.

³⁴ U. Patnaik. 1987. *Peasant Class Differentiation. A Study in Method with Reference to Haryana*.

³⁵ Ibid.

³⁶ (i) K. Griffin, A. R. Khan and A. Ickowitz (GKI). 2002. ‘Poverty and Distribution of Land’. *Journal of Agrarian Change*. Vol. 2,3. pp. 279-330. For the specific context of India, see (ii) D. S. Swamy. 1980. ‘Land and Credit Reforms in India: Part One’. *Social Scientist*. Vol. 8,11. pp. 3-13.

³⁷ For a scathing critique of the “neo-classical neo-populist” approach towards redistributive land reforms of the GKI paper, see (i) T.J. Byres. 2004a. ‘Neo-Classical Neo-Populism 25 Years On: Déjà vu and Déjà Passe. Towards a Critique’. *Journal of Agrarian Change*. Vol. 4, 1 & 2. pp. 17-44. (ii) T.J. Byres. 2004b. ‘Introduction: Contextualizing and Interrogating the GKI Case for Redistributive Land Reform’.

Based on the higher productivity of small scale over large scale farming (with physical area of farms being the index of the scale of a holding), GKI argue that a redistribution of land from large landowners to semi-landless and landless rural poor would not only be desirable from the point of view of equity but would also be efficient as it would accelerate agricultural and overall economic growth at the same time as it would guarantee an increase in agricultural employment.

In a critical appraisal of the GKI approach towards redistributive land reforms, Byres has pointed out that the roots of the basic argument put forward by GKI in their 2002 paper can be traced to “Griffin’s earlier statement of neo-classical neo-populist argument” advanced in 1974 (Byres, 2004a). Byres tells us that the explanation for this belief in the continued existence of an inverse relationship between farm size and land productivity by the “neo-classical neo-populist” economists like Keith Griffin is put forward in terms of quantitative and qualitative differences in factor use between large and small scale farms. Such factor differences exist owing to differential access to resources in a world where input markets (i.e., land, labour and capital) are fragmented. This in turn leads to variation in relative factor price ratios on the only two types of farm holdings, viz., ‘landlords’ and ‘peasants’, that are assumed to exist in the model. For instance, ‘peasant’ holdings will have higher price ratios between land/labour and capital/labour compared with ‘landlord’ holdings. This difference in relative input prices lead ‘the peasants’ to cultivate their holdings more intensively by adopting labour-intensive techniques, thereby enabling them to produce a higher output per unit area compared to the ‘landlords’, who tend to adopt more mechanized techniques involving higher capital-output ratios and cultivate their land extensively employing lower labour-land ratios. **Assuming the absence of economies of scale**, it is the intensively cultivated ‘peasant’ farms as opposed to the extensively cultivated ‘landlord’ holdings that are seen as producing a higher level of output per unit area (Griffin, 1974; S.C. Scott, 1977; GKI, 2002; Byres, 2004).³⁸

Journal of Agrarian Change. Vol. 4, 1 & 2. pp. 1-16. Also, see (iii) G. Dyer. 2004. ‘Redistributive Land Reform: No April Rose. The Poverty of Berry and Cline and GKI on the Inverse Relationship’. *Journal of Agrarian Change*. Vol. 4, 1 & 2. pp. 45-72.

³⁸ See (i) T.J. Byres. 2004. ‘Neo-Classical Neo-Populism 25 Years On: Déjà vu and Deja Passe. Towards a Critique’. *Journal of Agrarian Change*. Vol. 4, 1 & 2. pp. 17-44. Especially see Pp. 21-22 for Scott’s rendering of Griffin’s argument (1974) as elaborated by T.J. Byres. (ii) C.D. Scott. 1977. Review of Griffin 1974. *Journal of Peasant Studies*. Vol.4, No.2, pp.244-8. (iii) K. Griffin. 1974. *The Political Economy Of Agrarian Change. An Essay On The Green Revolution*.

Therefore, according to the ‘neo-classical neo-populist’ perspective, redistributive land reforms would result in an egalitarian agrarian structure predominantly based on small scale peasant production which is regarded as most conducive for the maximization of total output and employment in the countryside. Furthermore, the removal of market imperfections through a redistribution of land from ‘landlords’ to ‘peasants’ must be accompanied by state support in the form of favourable policies towards the rural sector, that are free from the hitherto existing ‘landlord bias’ as well as the ‘urban bias’ (ibid; Lipton, 1977).³⁹

By implication, all tenurial reforms and economic policies aimed at the promotion of capitalism and technological progress that do not directly alter the distribution of landholding are perceived as increasing rural inequality on account of their being biased in favour of the ‘landlords’ at the expense of ‘the peasants’ (or what is termed as the ‘landlord bias’) and are therefore opposed by the proponents of this approach. This discrimination in government policy against ‘the peasantry’ is seen to exist as much outside the agricultural sector as within it. At the inter-sectoral level, this prejudice against ‘the peasants’ is termed as ‘urban bias’ and is reflected in the policies that are seen as encouraging the development of the ‘urban class’ to the detriment of the ‘rural class’ (Lipton, 1977).⁴⁰

It is not difficult to see that the above approach to the nature of desirable change in agriculture, the most influential exponents of which during the 1970s were Keith Griffin and Michael Lipton, owes its theoretical lineage to the Russian populists and neo-populists like Chayanov discussed earlier. The ahistorical nature of this approach, reflected in its theorization of the peasantry as a socially homogeneous group of small scale family-labour based cultivators who are perceived as more ‘efficient’ than the large scale hired-labour based ‘landlord’ holdings, is a typical characteristic feature of agrarian populism.

It is important to understand that the fundamental theoretical premise on which the “neo-classical neo-populist” argument for redistributive land reform rests is their belief in the universal validity of the inverse relationship between farm size and

³⁹ Ibid. Also see K. Griffin. 1974. *The Political Economy Of Agrarian Change. An Essay On The Green Revolution* and M. Lipton. 1977. *Why Poor People Stay Poor. A Study of urban bias in world development.*

⁴⁰ M. Lipton. 1977.

land productivity (Byres, 2004). However, their explanation of this inverse relationship in areas where it does exist is as problematic as the misplaced emphasis on its continued existence in areas where it ceases to exist (such as in dynamic situations of developing capitalist relations and changing techniques as in the first phase of the green revolution in Punjab, Haryana and Western U.P.).

As has been pointed out, reasons for the existence of the inverse relationship between farm size and land productivity where it does exist, lie not in quantitative and qualitative differences in the application of inputs between ‘peasant’ farms and ‘landlord’ farms, as suggested by the proponents of this variant of agrarian neo-populism. Instead, the explanation must be sought in exploitative semi-feudal agrarian relations that on the one hand, inhibit landlords from increasing agricultural growth and productivity through investments in productivity raising techniques of production, while at the same time compels the peasants to cultivate their holdings intensively in order to produce a surplus over and above their necessary consumption which must be paid as rent and interest to the exploitative class of landlords cum moneylenders.⁴¹

Similarly, Byres tells us that it is in ignoring the impact of capitalist development on technological progress and rural class structure that leads its proponents to a theoretically flawed emphasis on the continued superiority of ‘peasant’ farming over ‘landlord’ farming even in dynamic situations where economies of scale due to changing techniques ensure a breakdown of this inverse relation and its transformation into a positive one (Byres, 2004).

Byres argues that one of the theoretical failures of this variant of agrarian populism lies in its ignoring the fact that the nature of the relationship between farm size and land productivity is actually a dynamic one and is crucially shaped by the dominant agrarian relations that exist in an area at a particular point of time.

Equally problematic is its conception of the peasantry as a socially homogeneous group of family-labour based cultivators who do not exploit each other but are subjected to exploitation as a singular class, both within and outside the

⁴¹ For the dynamics of surplus extraction in societies where the dominant production relations are semi-feudal and how semi-feudal agrarian relations inhibit the growth of technological progress, see A. Bhaduri. 1983. *The Economic Structure Of Backward Agriculture*. Also, for an alternative class based approach to understanding the inverse relationship, see G. Dyer. 1997. *Class, State And Agricultural Productivity In Egypt*.

agricultural sector at the hands of other socially dominant groups such as the landlords, moneylenders, traders, the state or the urban class in general. While the problems with this ahistorical approach to the notion of peasantry as an undifferentiated mass of petty producers have already been discussed from a Marxist-Leninist perspective earlier in this section, let us understand that it is precisely this unrealistic assumption of a homogeneous peasantry underlying all such theories as Lipton's "Urban bias" that are being used to advocate trade liberalization and globalization of third world agricultures like India's in the modern era of neoliberalism.

According to Lipton's "Urban bias" hypothesis, an undifferentiated rural sector comprising a homogeneous group of people having identical interests is socio-economically and politically discriminated against by the state in favour of an urban sector which similarly constitutes a single urban class of industrialists and workers (Lipton, 1977; Byres, 1979).⁴² The proponents of this approach claim that the 'bias' or discrimination against the agricultural sector exists in the development strategy of import substitution that India adopted with the initiation of planned economic development in 1951. Such a state led industrialization strategy, by maintaining an overvalued exchange rate and adverse terms of trade for agriculture, is claimed to be primarily responsible for the agricultural underdevelopment of developing countries such as India. This is because not only did the promotion of domestic industries behind high trade barriers restrict the export of primary commodities in which India's comparative advantage based on Ricardo's international trade theory lay, the policy of keeping food prices low via turning the terms of trade in favour of industry only served to lower the profitability of the rural sector and maximised the extraction of resources from it in the form of cheap food, raw materials and labour for the urban sector.⁴³

Focus must therefore be on "getting prices right" by opening the agricultural sector to foreign trade. The World Bank's argument behind this "get prices right" assertion which finds its allies here in writers like A.S.Kahlon, D.S.Tyagi,

⁴² M. Lipton. 1977. *Why Poor People Stay Poor*. Also, for a searing critique of Lipton's theory of "Urban Bias", see T.J. Byres. 1979. 'Of Neo-Populist Pipe-Dreams: Daedalus in the Third World and the Myth of Urban Bias'. *Journal of Peasant Studies*. Vol. 6, 2. pp. 210-244.

⁴³ World Development Report. 1986. Part II. Chapter 4. p.61.

D.S.Swamy and Ashok Gulati among others influenced by agrarian populism is typically provided in terms of Lipton's 'urban bias' theory⁴⁴, the implication of which in the Indian context is to raise the prices of agricultural goods relative to those of industry, i.e., to shift the terms of trade in favour of agriculture (Kahlon and Tyagi, 1983; D.S. Tyagi, 1987; Swamy and Gulati, 1986; J. Ghosh, 1988). Not only is the policy of aligning domestic prices with world prices seen as promoting profitability and growth rates in the agricultural sector, it is also considered to be desirable from the point of view of income distribution. This is because given the fact that agriculture-dependent population is on an average poorer than industry-dependent population, a shift in the terms of trade in favour of agriculture that would result if world prices are allowed to prevail would lead to higher incomes in the agricultural sector as a whole and would therefore result in a more even distribution of income between agriculture and industry.

However, apart from the fact that international trade is neither "free" nor "fair" and that the unfolding reality in the post-GATT period of trade liberalization of developing countries' agriculture has been starkly different from the stated claims of those arguing in favour of neoliberal reforms (see Chapter 6), T.J. Byres has argued that the approach of Lipton's theory of 'urban bias' to analysing issues of growth and inequality is extremely static and ahistorical and has no theoretical or empirical basis to it. He asserts that "it is based on a theory of the state and class analysis which are flawed and are not rooted in reality".⁴⁵ Its emphasis on rural inequality together with its explanation in terms of the theory of 'urban bias' of why inequality persists as also its proposed solution for eradicating it are all populist in nature.⁴⁶ Clearly, such a view, by pitting a single homogeneous group of rural population against a similarly placed urban homogenous group with identical interests, completely ignores the fact of an increasing class differentiation that exists among the peasantry.

⁴⁴ (i) A.S. Kahlon and D.S.Tyagi. 1983. *Agricultural Price Policy in India*. (ii) D.S. Tyagi. 1987. 'Domestic Terms of Trade and their Effect on supply and Demand of Agricultural Sector'. *EPW*. Review of Agriculture. Vol. XXII,13, Mar.28. pp. A30-A36. (iii) D. S. Swamy and A. Gulati. 1986. 'From Prosperity to Retrogression: Indian Cultivators during the 1970s'. *EPW*. Vol. 21,25/26, June 21-28. pp. A-57 - A-59+A-61 - A-64. For a critique of World Bank's argument reflected in the writings of such economists, see J. Ghosh. 1988. 'Intersectoral Terms of Trade, Agricultural Growth and the Pattern of Demand'. *Social Scientist*. Vol. 16,4, April. pp. 9-27.

⁴⁵ T.J. Byres. 1979. 'Of Neo-Populist Pipe-Dreams: Daedalus in the Third World and the Myth of Urban Bias'. *Journal of Peasant Studies*. Vol. 6, 2. pp.210-244.

⁴⁶ *Ibid.*

In other words, the fundamental theoretical and empirical failure of all modern day variants of populism and neo-populism discussed above lies in their disregard for the development of capitalism and its impact on class differentiation within the peasantry on the one hand and the differential access to improved technology and the associated economies of scale reaped by large scale capitalist farming on the other.

It is important to understand that those who oppose capitalist development in agriculture are also the ones who are against the adoption of yield raising modern technology in the countryside. This is reflected as much in the views of “neo-classical neo-populists” analysed above as in the moral economists’ perspective of agrarian populism as formulated by James C. Scott (J.C. Scott, 1976).⁴⁷

The moral economy variant of agrarian neo-populism emphasises that peasants seek to attain a stable level of ‘secure subsistence’ rather than maximisation of their average income. This risk aversion behaviour of peasant families is explained in terms of the “safety first principle” according to which, “the cultivator prefers to minimize the probability of having a disaster rather than maximising his average income.”⁴⁸ Thus, anything that the subsistence-oriented peasant community thinks is likely to violate their widely held moral values of “social justice, of rights and obligations, of reciprocity” developed over long historical time is vehemently opposed (Scott, 1976). Not surprisingly then, both green revolution technology and neoliberal economic policies promoting liberalization, privatisation and globalisation of third world agricultures are criticised by moral economists on the grounds that the greater market risks and uncertainty arising from the commercialization of agrarian relations and volatility of global agricultural markets increases the socio-economic vulnerability of petty producers manifold. It is argued that this challenges both “the norm of reciprocity and the right to subsistence, the two genuine moral components of the “little tradition” of village life (Scott, 1976; Edelman, 2005).⁴⁹

Therefore, the alternative to capitalist farming is seen to lie in small scale family labour based agriculture which is considered relatively safer in terms of enabling peasants to stabilize (rather than maximise) their income. Green revolution

⁴⁷ J. C. Scott. 1976. *The Moral Economy of the Peasant. Rebellion And Subsistence In Southeast Asia*.

⁴⁸ *Ibid.* p.18. Also, see chapters 1 and 2.

⁴⁹ *Ibid.* See p. 18. Also see M. Edelman. 2005. ‘Bringing the Moral Economy Back in..... to the Study of 21st Century Transnational Movements’. *American Anthropologist*. Vol. 107, 3. pp. 331-345.

technology, by widening socio-economic disparities among cultivators, poses a serious subsistence threat to the vast number of marginalized cultivators and is therefore, vehemently opposed by the advocates of moral economy approach (Scott, 1976).⁵⁰

Arguments against large scale capitalist farming have also been put forward by ecological economists on the grounds that it is unsustainable in the long run owing to its adverse environmental impacts and rising cost of fossil energy which makes it energy inefficient. Small scale labour intensive farming is therefore widely advocated both on account of it being more conducive for providing food security to the poor as also on account of it being ecologically sustainable (Woodhouse, 2010).⁵¹

The problems with the moral economy perspective to agrarian change as outlined above are several. To begin with, Scott's conception of the peasantry as seeking a stable and minimum subsistence rather than maximisation of income through investments in productivity raising technological innovations is unmistakably neo-populist in nature. Like Chayanov, the latter day adherents of neo-populism also treat the entire peasantry as a singular homogeneous class which is exploited as much by the rural elites, viz., landlords and moneylenders as by the state via unjust taxation.

Furthermore, in its fierce opposition to modern technology on the grounds that it increases peasants vulnerability to 'subsistence crisis' by increasing risk and uncertainty as also on account of it being ecologically unsustainable, the moral and the ecological perspectives ignore the crucial relevance of the production aspect of industrialised farming, particularly in ex-colonial third world developing countries like India where even today, hunger and malnutrition continues to afflict vast masses in our countryside. In so doing, these modern variants of neo-populism fail to take account of the critical role that the modern technology (albeit with many shortcomings) has played in helping India achieve self-sufficiency in foodgrains production, thereby transforming it from being a net importer to a net exporter of foodgrains since the mid-nineteen seventies. (See chapter 4) With as much as 87 percent of the Indian rural population failing to access the minimum nutrition norm of

⁵⁰ Ibid. See pp. 207-212 and 1-55.

⁵¹ For a critique of the ecological approach to farming, see P. Woodhouse. 2010. 'Beyond Industrial Agriculture? Some Questions about Farm Size, Productivity and Sustainability'. *Journal of Agrarian Change*. Vol. 10, 3. pp. 437-453.

2400 Kcal. during the neo-neoliberal times in 2004-05, it hardly needs stating that provision of food and basic amenities to the rural poor remains the topmost priority of our policymakers even after nearly seven decades of Indian independence from the British.

In other words, if their advocacy for small scale subsistence farming as an ecologically sustainable alternative to capitalist farming is problematic on account of its lack of emphasis on feeding the nutritionally deprived masses by raising foodgrains production through technological modernization, it is equally questionable on account of its erroneous belief in the superior 'efficiency' (in terms of output produced per unit area) of small scale farming relative to large scale farming. (This has already been dealt with in detail above.)

Even more important in this regard is the theory of exploitation advanced by moral economists such as James C. Scott which is fundamentally different from the Marxist definition of exploitation based on the rate of surplus value produced, a concept we have adopted throughout our study. Scott's definition of exploitation is more in accord with the peasants' perceptions of an acceptable level of exploitation. According to him, though the peasant may resent any claim on his produce by the rural dominant classes, "it is the claim that most often threatens the central elements of his subsistence arrangements, that most often exposes him to subsistence crises, that is naturally perceived as the most exploitative. He asks how much is left before he asks how much is taken; he asks whether the agrarian system respects his basic needs as a consumer (Scott, 1976)."⁵² Clearly, in formulating the theory of exploitation in this manner, moral economy fails to question the existing structure of property relations which is highly exploitative and accentuates rural inequalities over time. In so doing, it ignores the existing reality of class differentiation within the peasantry and therefore, the concept of class struggle altogether, thereby allowing the dominant rural classes to continue socio-economic and political exploitation of the marginalized cultivators.

Indeed, it was the dynamics, extent and implications of peasant differentiation that marked the fundamental difference between Lenin and Chayanov in the quarter

⁵² J. C. Scott. 1976. *The Moral Economy of the Peasant. Rebellion And Subsistence In Southeast Asia*. p. 31.

century or so before the 1917 Russian revolution (Bernstein, 2009).⁵³ Furthermore, the 1917 revolution and the subsequent move towards capitalism as represented in the New Economic Policy following the period of war communism in the Russian countryside had far reaching implications for the class analysis of the Russian peasantry in the period after the revolution (Dobb, 1993).⁵⁴ This is well documented and is reflected in the research of Agrarian Marxists led by Kritsman who were concerned with developing the indicators for identifying and measuring class differences within the Russian peasantry during the 1920s, prior to Stalin's collectivization drive initiated in 1929 (Cox, 1984; Kritsman, 1984).⁵⁵

It is the ideas emanating from the rich debates and research that took place more than a century ago in Russia between Lenin and the populist Narodniks and beyond that continue to influence modern debates on peasant class differentiation, particularly in third world developing countries like ours. Even today, the failure to recognise the existence of a socio-economically differentiated peasantry as a result of developing capitalist relations is what continues to separate the static approaches of all the modern day variants of Russian populism and neo-populism from the dynamic approach of Marxism-Leninism rooted in the reality of exploitative class relations that exist within the peasantry.

Following Marx closely, Maurice Dobb while studying the economic history of Europe had said: "...history has been to-date the history of class societies: namely, of societies divided into classes, in which either one class, or else a coalition of classes with some common interest, constitutes the dominant class, and stands in partial or complete antagonism to another class or classes (Dobb, 1946?)."⁵⁶

It is with this Marxist understanding of our society divided into antagonistic classes that the present study attempts to analyse trends in the growth of agricultural output and 'farmers' incomes in India, with special emphasis on Uttar Pradesh. By

⁵³ H. Bernstein. 2009. 'V.I. Lenin and A.V. Chayanov: looking back, looking forward'. *The Journal of Peasant Studies*. Vol. 36, 1. pp. 55-81.

⁵⁴ See M. Dobb. 1993. *Soviet Economic Development Since 1917*.

⁵⁵ T.Cox and G. Littlejohn (ed.). 1984. 'Kritsman And The Agrarian Marxists'. *The Journal of Peasant Studies*. Vol. 11, 2. Special Issue. Jan., pp. 7-148. See the contributions by (i) T. Cox. 1984. 'Class Analysis of the Russian Countryside: The Research of Kritsman and his School'. pp. 11-60. (ii) L.N. Kritsman. 1984. 'Class Stratification of the Soviet Countryside'. pp. 85-143.

⁵⁶ M. Dobb. 1946. *Studies in the Development of Capitalism*. See Chapter 1. 'Capitalism'. p.13. Revised Edition, 1963 (Paperback).

emphasising on the importance of rural class structure and the role of the state in examining the issue of agricultural growth and ‘farmers’ incomes, this thesis demarcates itself from the existing mainstream literature on the subject which asserts social homogeneity of the peasants and hence, fails to capture the existence of a socio-economically differentiated peasantry across the Indian countryside.

Once we recognize the fact that class differentiation within the peasantry does exist, we are confronted with the problem of the choice of statistical index on the basis of which to identify the class status of holdings. Contrary to the widely prevalent practise of using acreage alone as the statistical index on the basis of which to determine the economic status of a household, the present study will differentiate itself from the rest by aggregating farm level data using the “labour exploitation” index. This has been taken up in the following section.

2.3. Alternative Methodological Approaches to Identifying the Rural Poor and the Importance of a Class Based Approach

In modern day transition to capitalism societies like India where more than half the workforce is still dependent on agriculture for its livelihood, it is imperative that we not only understand the dynamics of changing rural class relations but also use a statistical method which enables us to interpret farm data meaningfully by locating the position of households within the system of production relations. The importance of analyzing the changing nature of India’s agrarian structure today is more than ever before when as much as 87 percent of the rural population had been estimated to be poor in 2004-05, which had further increased to 90.5 percent by 2009-10, based on Planning Commission’s definition of poverty in terms of monthly per capita expenditure required to attain a basic minimum nutrition norm of 2400 calories per capita per day for rural India (U. Patnaik, 2007 and 2013).⁵⁷

With growing numbers of small and poor cultivators joining the ranks of agricultural labourers in a sector characterized by the lack of alternative employment opportunities and a highly skewed distribution of land and non-land farm assets in favour of the rural rich (see Chapter 5), that class differentiation is progressing at a

⁵⁷ (i) U. Patnaik. 2007. ‘Neoliberalism and Rural Poverty in India’. *EPW*. Vol. 42,30. pp. 3132-3150. See Table 2 on p.3138. (ii) U. Patnaik. 2013. ‘Poverty Trends in India 2004-05 to 2009-10. Updating Poverty Estimates and Comparing Official Figures’. *EPW*. Vol. 48,40, Oct. 5. pp. 43-58.

rapid pace, especially in the agriculturally advanced northern region of the country is a fact that can hardly be disputed by anybody today.

Before we examine the principles along which to demarcate such classes within the peasantry, it is absolutely essential for one to realise that no government policy aimed at redistribution of income from rural rich to rural poor can be effective unless the exact location of each household within a specified class is correctly assessed and known. Class analysis assumes an even greater significance not only when such redistributive measures take the form of selective implementation as in the case of the shift in government policy in India from PDS to TPDS, but is equally crucial in addressing broader issues of land reforms involving redistribution of land from feudal landlords to actual tillers, tenancy reforms etc. as also when it comes to the question of relative efficiency of small scale over large scale farming.

However, one could always question the need to go through this empirical exercise of distinguishing peasant classes when the rural poor for such purposes can be readily identified directly by looking at those households whose monthly incomes or expenditure levels fall below that required to obtain a minimum calorie intake of 2400 kcal. per capita per day as per the definition of poverty adopted for rural India. In this regard, it has been pointed out that sole reliance on 'poverty' estimates for identifying the rural poor is not only inadequate but could also be misleading. To begin with, the methodological problems arising from the planning commission's delinking of the definition of poverty line from the nutrition norm and the corresponding lowering of consumption standard over time has led to hugely underestimated figures of the rural population that is actually nutritionally deprived and hence, poor. Such has been the extent of underestimation of the actual poor by the government that as much as 87 percent of the rural population in 2004-05 and 90.5 percent in 2009-10 has been estimated to be 'poor' (based on direct nutritional norm) as against the official estimates of 28.3 and 23 percent respectively.⁵⁸

Moreover, the dissatisfaction with the method of using 'poverty' estimates for the identification of rural poor is not merely confined to the methodological problems in official poverty estimates discussed above. According to U. Patnaik, a much more fundamental weakness of this approach lies in its inability to link 'poverty' with the

⁵⁸ Ibid.

existing structure of property relations in the countryside. By reducing the problem of poverty to calorie-levels alone, she says that this approach fails to address the problem of extreme wealth inequality, which indeed is the fundamental reason for the existence of poverty in a society in the first place.⁵⁹ As has been pointed out, “the ‘poverty’ of the masses is not a question of absolute calorie-levels alone but a social relation between those who monopolize the means of production, and those who have little or none (U. Patnaik, 1987).”⁶⁰

In short, the ‘poverty’ approach on agrarian relations lacks a class perspective. It is not rooted in the analysis of class relations in the countryside. The inconsistency of official ‘poverty’ estimates with the very adverse overall macroeconomic trends that prevail in the economy particularly during the period of neoliberal reforms shows how far removed from the ground reality such a methodology devoid of class analysis can be. (see chapter 6)

This failure to locate the position of a household within the system of production relations is equally true of every such income-expenditure approach which focuses exclusively on empiricist categories to demarcate groups within the peasantry.⁶¹ This includes approaches relying solely on the use of indices such as the physical size of a holding (unadjusted for variations in soil fertility, irrigation etc.), income or assets value to classify holdings into different socio-economic groups.

Let us understand that all such perspectives, notwithstanding their recognition of the existence of socio-economic inequality within the peasantry, are nonetheless no more than modern day variants of Russian neo-populism. This is as much reflected in the manner in which the problematic is formulated as in the solutions they propose to address that problem. Furthermore, it has been argued that nothing definite can be said about the exact location of a household **within** the three broad categories of households obtained by introducing any ‘viability’ criterion that is exclusively based on income approach (Athreya, Boklin, Dfurfeldt and Lindberg, 1987; U. Patnaik,

⁵⁹ U. Patnaik. 1987. *Peasant Class Differentiation: A Study in Method with Reference to Haryana*. See Chapter 2. pp. 13-18.

⁶⁰ Ibid. See p.16.

⁶¹ Ibid.

1988).⁶² That the class of petty producers fares worse than the most vulnerable class of semi-landless and landless agricultural labourers when the category of the 'poor' is defined in terms of an income criterion alone, reflects a failure of all such income-expenditure based approaches to capture the many complex ways in which the 'poor' are exploited by the 'rich' across our countryside.⁶³

In other words, there is an urgent need to look at an alternative statistical criterion on the basis of which to group farm data into peasant classes which can then be used to address a wide range of issues – from the question of exploitation within the peasantry to the debate on the relative efficiency of small scale versus large scale production that has important implications for the policy of land reforms.

In this context, a widely used and well accepted approach by almost every researcher writing on the subject, including even the official Indian data sources like the National Sample Survey, FMS, Cost of Cultivation Surveys etc. has been to use acreage, i.e., physical size of landholding as the index along which to classify holdings belonging to varying economic status. It has however been pointed out that judging the economic size, i.e., scale of production of a holding solely on the basis of acreage, i.e., size of landholding (owned or operated) could be misleading, especially in a world of changing techniques, as at present (U. Patnaik, 1972).⁶⁴ Infact, it has been shown that acreage unadjusted for variations in soil fertility, irrigation etc., is an inadequate measure of the income status of a cultivator even in a situation marked by the absence of such technological changes as was indeed true of Indian agriculture of the 1950s (Khusro, 1964).⁶⁵

Given the above problems in using farm size viz., acreage as the measure of economic size of holdings, there is clearly an urgent need for an alternative criterion

⁶² For a critique of such a 'viability' criterion that is exclusively based on income approach, see U. Patnaik. 1988. 'Ascertaining the Economic Characteristics of Peasant Classes-in-Themselves in rural India: A Methodological and Empirical Exercise'. *The Journal of Peasant Studies*. Vol. 15, No.3, April. Reprinted in *The Long Transition*. pp.208-251. Also, see V. Athreya, G. Boklin, G. Dfurfeldt and S. Lindberg. 1987. 'Identification of Agrarian Classes: A Methodological Essay with Empirical Material from South India.' *Journal of Peasant Studies*. Vol. 14, 2. pp. 147-190.

⁶³ See the appendix to the chapter for the table which clearly brings out such a point made in the text. The empirical result is based on field-level data for the year 1972-73 collected from Haryana. See U. Patnaik. 1999. 'Ascertaining the Economic Characteristics of Peasant Classes-in-Themselves in rural India: A Methodological and Empirical Exercise' in *The Long Transition*. Table 12 on p.234.

⁶⁴ U. Patnaik. 1972. 'Economics of Farm Size and Farm Scale: Some Assumptions Re-examined'. *EPW*. Vol. 7,31-33, Aug.

⁶⁵ A.M. Khusro. 1964. 'Returns to Scale in Indian Agriculture'. *IJAE*.

that is rooted in the reality of antagonistic class relations which can fruitfully capture the several ways in which those at the margins of our society are socio-economically and politically exploited by those at the top of the rural class hierarchy. “Labour exploitation index”, it is argued, is indeed one such index that can be used for the empirical classification of households into varying socio-economic classes (U. Patnaik, 1976).⁶⁶

The “labour exploitation index” seeks to capture the class status of a household, essentially by looking at the extent of use of outside labour or conversely the extent of working for others, relative to the extent of self-employed.⁶⁷

It is this index that will be used for purposes of grouping holdings, the detailed information on the economic variables of which has been collected by us from an agriculturally advanced district in the western region of U.P., viz., Muzaffarnagar.

⁶⁶ U. Patnaik. 1976. 'Class Differentiation within the Peasantry: An Approach of Indian Agriculture'. *EPW*. Vol. 11,39, Sep.25. pp. A-82 – A-85+A-87 – A-101.

⁶⁷ *Ibid.*

Appendix to Chapter 2

Table: Total incomes relative to poverty levels

Peasant Class	Non-Cultivation Incomes	Percentage of (2) from wage work	Total Disposable Work	Deviation of total disposable income from poverty line	
				A	B
Rich	115.3	0.0	1974.7	318.8	732.8
Middle	116.9	0.4	1873.2	21.1	484.1
Small	157.1	3.7	1340.3	-786.6	-254.9
Poor	345.5	37.6	738.6	-1152.8	-680.0
Landless Labourer	1031.15	96.4	1227.8	-278.9	97.8

Note: In column 5, (a) is the deviation from the Planning Commission poverty line and (b) the deviation from the Dandekar-Rath line. The total disposable income is the farm disposable income plus non-cultivation incomes. The overall average values for classes are inclusive of the 'petty employers' though the individual values are not indicated. Source: Patnaik, Utsa. 'Ascertaining the Economic Characteristics of Peasant Classes-in-Themselves' in Rural India. 1999. p. 234.

Chapter 3

Land Reforms, New Technology and Capitalist Development in Post-Colonial Indian Agriculture

The present chapter, on the independent Indian agrarian economy, attempts to analyze the problems characterising India's agriculture after nearly two centuries of socio-economic and political subjugation to Britain. It examines the manner in which the Indian state after political Independence, has addressed the crucial issue of raising agricultural output and improving overall incomes of the toiling masses in rural India.

The chapter is divided into three sections. The first section discusses the colonial context in which the independent Indian state formulated its agrarian policies aimed at improving agricultural production and peasant incomes. It explores how the nature of state intervention and the subsequent model of agrarian development adopted by the post-colonial Indian state were largely determined by the existing configuration of dominant classes in rural and urban India. This was most clearly visible in the 'top-down' nature of land reforms implemented in Indian agriculture during the nineteen fifties and sixties. The second section argues that the abolition of intermediary tenures, did not break the effective monopoly control of land since the bulk of the new *bhumdari* and other ownership rights remained with the erstwhile feudals through the automatic 'conversion' of the land claimed as their own-cultivated or *khudkashit*, to the new ownership tenures, without any payment being required. But tenancy reforms did tilt the balance of class forces within the peasantry, in favour of the emerging class of rich peasants who could afford to purchase ownership rights to hitherto tenanted land vested with the government under the reforms. Though the formation of both landlord-capitalism and of dynamic rich farmers was aided by the specific nature of land reforms carried out across the Indian countryside, it was not until the introduction of "green revolution" technology during the mid-sixties that the barrier of feudal rent to capitalist investments in agricultural production was overcome and landlord capitalism received a stimulus.

The third section focuses on the introduction of green revolution technology in an unreformed agrarian structure where bulk of the land owned continued to be the monopoly of feudal landlords. Against such a scenario, raising profitability of

agricultural production to induce the landowning cultivating classes to invest in productivity raising techniques of production was essential for achieving self-sufficiency in foodgrains production and improving average foodgrains absorption of the rural masses. We therefore emphasise on the crucial role played by the state in raising profitability of agricultural production not only by creating a domestic market for foodgrains but also by providing support for the adoption of productivity raising new technology. Though the new agricultural strategy did help India become self-sufficient in foodgrains production, it was only at the cost of growing socio-economic regional and class inequalities in rural India.

3.1. Path of Agrarian Development in Independent India

More than two centuries of socio-economic and political subjugation to colonial rule had left the Indian countryside with an extremely feudal and backward agrarian base. The landholding pattern as evolved from the exploitative nature of land revenue settlements introduced by the British was a highly skewed one with many growth-inhibiting features like the existence of a rent receiving class of parasitic intermediaries between the actual tiller and the state, extreme fragmentation and subdivision of holdings, widespread prevalence of petty tenancy, etc. It has been reported that at least 20 percent of the total operated area in Indian agriculture in 1953-54 was rented-out and a high proportion of this total, averaging approximately 40 percent, was leased-out on sharecropping basis.¹ Feudal rent and usurious interest, accounting for anything between 20 and 40 percent of total agricultural income, were the main forms of surplus revenue extraction for the dominant classes.² With bulk of the agricultural surplus accruing to the parasitic class of landlords, moneylenders and traders being utilized unproductively, profitability to invest in direct cultivation was bound to be low. Not surprisingly then, techniques of production employed in agriculture continued to be primitive. A mere 15 percent of total arable area and 17 percent of the sown area was irrigated in 1949-50. Further, less than 1 percent of the

¹ T.J. Byres. 1974. 'Land Reform, Industrialization and the Marketed Surplus in India: An Essay on the Power of Rural Bias' in D. Lehmann (Ed.). *Agrarian Reform and Agrarian Reformism*. p.234.

² Ibid. p. 237.

total arable area (net sown area + fallow) was cultivated using modern inputs such as artificial fertilizers in the years immediately after decolonisation.³

In short, the “built-in-depressor” that Daniel Thorner talked about while describing the agrarian structure of India of the 1950s was indeed a very apt description of the situation prevailing in Indian agriculture at that time.⁴ The term denoted that “complex of agrarian relations which made it paying for landlords to live on extracting rent, usurious interest and trading profit out of an impoverished peasantry, rather than go in for productivity-raising investment”.⁵

It was to address and reverse the workings of this “built-in-depressor”, essentially to meet the pressing demands of industrialization, that an urgent need for planning was felt on the eve of independence. Thus, as far back as 1944, eight leading Indian industrialists of the day came together and proposed a fifteen year investment plan for India, known as the Bombay Plan. The document was a blueprint for ushering in industrial capitalism and significantly influenced the subsequent formulation of the five year plans in independent India.⁶

Let us state at the outset that the existing class configuration of rural and urban bourgeoisie at the time of independence was such as to preclude the possibility of a radical reform of India’s agrarian structure from the very beginning.⁷ While the “imperatives of industrialization” demanded that emphasis be placed on heavy industry with agriculture providing a steady flow of crucial wage-goods, cheap labour and other raw-materials necessary to prevent real wages in manufacturing from rising, the existing levels of output and consumption of bulk of the rural masses were way too low to permit any further significant squeeze in their consumption standards to release surpluses for industry. In other words, there emerged a contradiction between the role that agriculture was expected to play in meeting the industry’s requirements and its own need of raising production and consumption standards of the four-fifths or more of the impoverished rural masses dependent on it for drawing its living. The

³ Ibid. p. 229.

⁴ D. Thorner. 1956. *The Agrarian Prospect in India*.

⁵ U. Patnaik. 1986. *The Agrarian Question and the Development of Capitalism in India*. p. 5.

⁶ Amal Sanyal. ‘The Bombay Plan: A Forgotten Document’. <http://nzsac.files.wordpress.com/2012/05/bombayplanfornzsac.pdf>

⁷ P.C. Joshi. 1974. ‘Land Reform and Agrarian Change in India and Pakistan since 1947: I & II’. *Journal of Peasant Studies*. Vol.1, 2 & 3. pp. 164-185 and 326-362.

only way of successfully resolving this conflict was by a radical transformation of India's agrarian structure in favour of planned socialization of agricultural production.

A radical restructuring of the mode of production via progressive land reforms of the type carried out in China was indeed a development strategy best suited to the growth and equity needs of a predominantly feudal and underdeveloped agrarian economy such as India's characterized by huge surpluses of unutilized labour on the one hand and a very highly skewed structure of feudal land ownership on the other.⁸ Such a strategy, it has been argued, not only transforms socially unproductive forms of actual economic surplus (such as rent, interest and commercial profits which do not add to output flows) into productive forms (which adds to output flows through reinvestment of those surpluses into agricultural production) by eliminating social classes appropriating property incomes altogether, but does so by spreading investment across the entire rural population by socialising the existing resources of land and labour. As a result, surplus resources (land and non-land) thus released not only raise investment and hence, agricultural output and peasant incomes but equally crucially, also provide the much needed finance for industrialization in a predominantly agrarian underdeveloped closed economy such as India of the 1950s. More importantly, socialisation of production or radical land reforms which involve pooling of resources like land and labour scattered over several tiny and fragmented holdings enables successful mobilisation of rural surplus labour (inherent in underemployment) for capital formation in both agriculture and industry, thereby allowing the existing 'potential economic surplus' to be exploited fully in the economy.⁹

Necessary as it may have been, radical land reforms as a strategy facilitating transition from a predominantly feudal to a modern industrialized economy was never put into practice in the Indian countryside. The existing balance of class forces in Indian agriculture appears to have precluded a radical change in agrarian relations along progressive lines. The continued monopoly of land by the erstwhile feudal lords even after the implementation of abolition of intermediaries act in Indian agriculture

⁸ U. Patnaik. 1998. 'Alternative Strategies of Agrarian Change in Relation to Resources for Development in India and China' in D. Nayyar (Ed.) *Economics as Ideology and Experience: Essays in Honour of Ashok Mitra*. pp. 223-259.

⁹ *Ibid.*

implied that landlord-turning-capitalist element was the dominant trend in the changing agrarian relations after independence. Moreover, even in the agriculturally advanced regions of Punjab-Haryana and Western Uttar Pradesh where rich peasant stratum did emerge, the trend of peasant-capitalism was of secondary importance and was subordinate to the element of landlord-capitalism.¹⁰

In Uttar Pradesh, as in other parts of the country, this antagonism between the dominant class of large landlords and the gradually emerging rich and middle sections of the peasantry was broadly articulated in terms of neo-populist views, such as those put forward by Charan Singh, an “Indian variant of neo-populism”.¹¹ Let us briefly outline the main arguments that defined neo-populism as an ideology in order to understand its impact on the nature of land reforms carried out in rural India which only paved the way for subsequent development of capitalism by strengthening peasant class differentiation.

By neo-populism is meant a set of ideas which upholds peasant proprietorship on the grounds that it is more democratic and also because there is a powerful incentive inherent in proprietorship. This is nothing but a version of Lipton’s “urban bias” hypothesis according to which an undifferentiated rural sector comprising a homogeneous group of people having identical interests is socio-economically and politically discriminated against by the state in favour of an urban sector which similarly constitutes a single urban class of industrialists and urban workers.¹² By ignoring class differences that exist within the peasantry and promoting the idea of a single homogenous class in the countryside, the populists and neo-populists alike are actually champions of the rich and middle sections of the peasantry, with no reference at all being made to the interests of the landless and semi-landless marginalized poor. The path of agrarian reform propagated by them is neither socialist nor capitalist in nature but a third one based on strong peasantry, a fundamental prerequisite for which is peasant proprietorship.¹³ Implications of such a strategy of agrarian reform are clear. By arguing that small holdings produce higher output per unit area compared to

¹⁰ U. Patnaik. 1986. *The Agrarian Question and the Development of Capitalism in India*. p.12.

¹¹ Charan Singh. 1959. *India's Poverty and Its Solution*. Also, see T.J. Byres. 1988. 'Charan Singh, 1902-87: An Assessment'. *Journal of Peasant Studies*. Vol. 15,2. pp. 139-189.

¹² T.J. Byres. 1979. 'Of Neo-Populist Pipe-Dreams: Daedalus in the Third World and the Myth of Urban Bias'. *Journal of Peasant Studies*. Vol. 6, 2. pp.210-244.

¹³ Ibid.

large holdings and are therefore relatively more productive, they opposed collectives, co-operatives and large scale capitalist farming alike. In other words, the upholding of the “ideal of peasant proprietorship” must actually be interpreted in terms of a case against collectivisation of agriculture, the socialist solution to the problem of agrarian transition, which so suited the development needs of Indian economy of the 1950s especially given her resource background. At the same time, radical redistribution of ceiling surplus land, a logical policy conclusion following from this belief in inverse relationship, was also opposed as a strategy of agrarian reform by the neo-populists.

As is well known, despite the opposition of the neo-populists to landlordism which in U.P. led to the enactment of the Z.A.L.R., it was the feudal lords who continued to dominate over even the rich peasant section of the peasantry. The regressive nature of land reforms reflected in the automatic conversion of all the land *zamindars* claimed as *khudkasht* into *bhumidari* without any payment being required, as also the heavy compensation in cash and bonds paid to them for the small part of their estates they gave up to the government, ensured that bulk of the land owned remained with the former feudals even after the implementation of the ‘Zamindari Abolition and Land Reforms Act’.

It is then no wonder that the changing agrarian relations in India after independence saw the emergence of “landlord capitalism” as the dominant trend, with the element of ‘peasant capitalism’ being subordinate to it.¹⁴ This is evident from the ‘top-down’ nature of land reforms carried out during the two decades or so after Indian independence.

3.2. Land Reforms- Role of the State and the Aspect of Equity

Adoption of ‘top-down’ nature of land reforms meant that contrary to the stated claims of agrarian reforms objective of giving ‘land to the tiller’, Indian agriculture saw neither solely land reforms from above whereby landlords became capitalists (as happened for instance in Germany) nor a radical redistribution of land in favour of those actually tilling the land, viz., the majority comprising small peasants and the semi-landless or landless rural poor (as in China from 1947 or in Russia after the 1917 Revolution). Instead, land reforms as implemented in India had

¹⁴ U. Patnaik. 1986. *The Agrarian Question and the Development of Capitalism in India*.

a distinctive bias in favour of the dominant rural class of erstwhile feudal landlords on the one hand, while also being favourable to the emerging enterprising rich peasants on the other, at the expense of the bulk of the cultivating poor. This bias could be seen as much in the abolition of intermediary tenures (viz., *zamindari*, *talukdari*, *jagirdari*, *inamdari* etc.) as in ceilings on agricultural holdings as well as tenancy legislation, all of which formed a part of the overall agrarian reforms programme carried out in rural India in the quarter century or so following India's independence from the British. This was highlighted by a number of studies on land reforms that were sponsored by the Research Programmes Committee of the Planning Commission set up in July 1953 and carried out in different states by leading economists and other social scientists during the nineteen fifties and sixties.¹⁵

Below, we briefly examine each of the land reform measures together with the loopholes inherent in each such legislation. Specifically, we enquire into the extent to which the agrarian reforms programme, as implemented in India, addressed the problem of "built-in-depressor" inherent in India's agrarian structure of the 1950s. In so doing, our focus will be on U.P., where the enactment of the Uttar Pradesh 'Zamindari Abolition and Land Reforms Act 1950'¹⁶ marked the first attempt towards reforming India's agrarian structure in post-colonial India.

Nature of Land Reforms as carried out by the Independent Indian State and its Impact on Agrarian Structure with special reference to Uttar Pradesh

As is well known, the first attempt towards reforming India's agrarian structure was made with the Abolition of Intermediary Tenures, a slow process during which as many as four to nine years elapsed before the different states completed the enactment of their law. Starting with the Jagirdari Abolition in Hyderabad in 1949¹⁷

¹⁵(a.) B. Singh and S. Misra. 1964. *A Study of Land Reforms in Uttar Pradesh*. (b.) A. M. Khusro. 1958. *Economic and Social Effects of Jagirdari Abolition and Land Reforms in Hyderabad*. Also, see (c.) Report of the National Commission on Agriculture. 1975. Section XV on Agrarian Reforms. (d.) P.S. Appu. 1996. *Land Reforms in India. A Survey of Policy, Legislation and Implementation*. (e.) For a comprehensive review and analysis of agrarian reforms programme in India, see P.C. Joshi. 1974. 'Land Reform and Agrarian Change in India and Pakistan since 1947: I & II'. *Journal of Peasant Studies*. Vol. 1, 2 & 3. pp. 164-185 and 326-362.

¹⁶ The U.P. Z.A.L.R. Act 1950, known as the Principal Act, was revised thrice, i.e., in 1952, 1954 and 1956 and culminated in the passing of the Uttar Pradesh Imposition of Ceiling on Land Holdings Act 1960. See B. Singh and S. Mishra. 1964. *A Study of Land Reforms in U.P.* p. 3.

¹⁷ A. M. Khusro. 1958. *Economic and Social Effects of Jagirdari Abolition and Land Reforms in Hyderabad*.

and U.P. Z.A.L.R. Act in July 1952,¹⁸ the abolition of feudal intermediary tenures in most states had been enacted by the mid-1950s. In Uttar Pradesh, all the intermediary tenures that had existed between the tiller and the state under which land was held were abolished and transferred into two major tenorial categories: *Bhumidari* and *Sirdari*.¹⁹ While the *bhumidars*, who mainly constituted the former *zamindars*, were given heritable, permanent and transferable rights in land, *sirdars* who primarily comprised the former occupancy *ryots*, were to hold land on heritable but not transferable basis. Besides creating these two tenorial categories under which land was held, the former non-occupancy *ryots* as well as tenants-at-will (mainly sharecroppers) cultivating ‘*sir*’ and ‘*khudkasht*’ lands continued to hold land as tenants under the newly created *bhumidars* and *sirdars*. They were now termed as *Asamis* and *Adivasis* respectively and were subject to ejections on various grounds.

Singh and Misra have documented very clearly how vast areas claimed as *khudkasht* by the larger UP *zamindars* automatically became their *bhumidari* for which they paid nothing, while actually getting compensation in bonds and cash for a small part of their estates which they gave up to government. So *bhumidari* right remained concentrated with the erstwhile *zamindars*. Their tenants however had to pay for purchasing *bhumidari* right on the minor part of their estates, usually the least fertile, which the government had taken over by paying compensation. Effectively money was taken from the better-off section of peasants and was used to pay compensation to the feudals which was discriminatory to these peasants and in favour of landlords.

Such lands over which the ‘*ex-zamindars*’ could automatically claim *bhumidari* rights accounted for more than one-fourth of the total agricultural land of the province.²⁰ Further, a highly regressive feature was introduced by making the tenants pay ten times (which was subsequently raised to twenty times) the rent at hereditary rates in order to purchase such *bhumidari* rights.²¹

Thus, while the former *zamindars* were made *bhumidars* of their *sir* and *grove* lands without paying any multiple of land revenue, former tenants, mainly the

¹⁸ Report of the National Commission on Agriculture. 1975. Section XV on Agrarian Reforms.

¹⁹ *Resource Use, Productivity and Land Reforms in Uttar-Pradesh*. February 1977. NCAER.

²⁰ K. Shankar. 1990. *Land Transfers: A Case Study*. p.20.

²¹ Report of the National Commission on Agriculture. 1975. Section XV on Agrarian Reforms. p.132.

relatively better-off occupancy tenants were made to pay a heavy price for acquiring such rights over the very lands they tilled. Moreover, the number of such tenants who could afford to purchase *bhumidari* rights was miniscule. In an evaluation based on sample studies before and after the enforcement of the ZALR Act, it was found that 52.8 percent of all cultivators had no *bhumidari* rights over any part of their lands and nearly three-fourths of them cited lack of cash as the main reason. Of the farms above 40 acres in size, all had *bhumidari* rights, while only one-third of the tenants on farms below 3 acres could claim *bhumidari* over some part.²² It is also interesting to note that the larger the size of a holding, the smaller was the proportion of area over which payment had to be made to acquire *bhumidari*. So, while less than 5 percent of the area held by households cultivating less than 3 acres had been obtained as *bhumidari* through automatic 'conversion', as much as 40 to 50 percent of the total area was 'converted' into *bhumidari* in the case of landholders having 20 acres or more.²³

Worse still, bulk of the cultivating tenantry comprising the former non-occupancy *ryots* and tenants-at-will on *sir* lands, who were indeed the most vulnerable sections among the tillers, were precisely the ones subjected to forced evictions by the *zamindars* in order to claim *bhumidari* right over large parts of their lands. This process of tenant evictions was greatly facilitated by the time lag of at least four years between the placing and the subsequent passing of the U.P. ZALR bill in the state assembly and a further two years before it could ultimately be implemented. Consequently, these evicted tenants were either forced to join the ranks of landless agricultural labourers or were made to continue to cultivate their 'lords' farms on a share crop basis under the garb of *sajhedari* (i.e., agricultural partnership) at terms of lease which were far more insecure than before. The fact that sharecropping or *bataidari* was not even recognized as letting out till as late as 1975 only reinforced the predominance of sharecropping as the principal form of tenancy arrangement.²⁴

²² B. Singh and S. Mishra. 1964. pp.126-128 quoted in U. Patnaik and Z. Hasan. 'Aspects of Farmers Movements in Uttar-Pradesh in the context of Uneven Capitalist Development in Indian Agriculture' in T.V. Sathyamurthy's (ed.). 1995. *Industry and Agriculture in India Since Independence*. Vol. II.

²³ B. Singh and S. Mishra. 1964. *A Study of Land Reforms in Uttar Pradesh*. p. 126.

²⁴ *Land Reforms in India: An Empirical Study*. 1989. Ministry of Rural Development, Government of India. Report of the First Year. Vol. 1. Land Reforms Unit, Mussoorie.

In other words, land reforms had the effect of merely redistributing some land within the dominant rural classes, away from the erstwhile feudal lords and in favour of the tiny minority of the rich and upwardly mobile sections of the peasantry who could afford to purchase new ownership rights over the hitherto tenanted land vested with the state. However, since bulk of the land owned remained with the former feudals through automatic conversion of all the land they claimed as *khudkasht*, landlords continued to dominate rural Uttar Pradesh even in the period following the *zamindari* abolition. At the same time, the emergence of a rich peasant stratum stimulated by tenancy reforms, though an undoubtedly important trend, was only of secondary importance in the overall changing agrarian relations in Uttar Pradesh after independence.

This change in the agrarian structure brought about by land reforms was not typical of U.P. alone but was equally true of most other regions including *ex-zamindari*, *ex-jagirdari* and *ex-raiyatwari*.²⁵ Everywhere, this process of redistribution of land (even though a relatively small proportion of the total) among the dominant rural classes was accompanied by large scale eviction of poor tenants from their lands. In Hyderabad, for instance, as many as 51.8 percent of the poor tenants cultivating 17.17 percent of the area under protected tenancies were illegally evicted.²⁶ Further, the fact that no state law (barring West-Bengal and Jammu and Kashmir) placed a limit on the area of land that could be claimed for “personal cultivation” (which was loosely defined to include cultivation through share-croppers, farm servants, hired labour etc.) only resulted in tenancies being pushed underground. A study conducted by the Land Reforms Unit (LRU, Mussoorie) in the early nineties in U.P. has revealed that as many as 89 percent of the total tenants had leased-in land on sharecropping terms as against a mere 8.7 percent leasing-in on fixed cash rents.

That tenancy reforms were by and large unsuccessful in providing security of tenure to vulnerable tenants is evident from the fact that by 1992, tenants acquired ownership rights or were made secure in only about 4 percent of the operated area at

²⁵ P.C. Joshi. 1974. 'Land Reform and Agrarian Change in India and Pakistan since 1947: I & II'. *Journal of Peasant Studies*. Vol. 1,2 & 3. pp. 164-185 and 326-362.

²⁶ *Ibid.*

the all-India level. More importantly, the reform led to the rural poor losing access to some 30 percent of the operated area.²⁷

Not only were tenancy reforms largely unsuccessful in improving access to land for the majority of the cultivating poor, the enforcement of ceilings on agricultural holdings was equally ineffective in changing the agrarian structure via redistribution of ceiling surplus land among the landless and semi-landless tillers. The continuous pressure exerted by the rich peasant lobby ensured a generally high level of ceilings of 10 to 18 acres (on irrigated land with two crops, as per national guidelines recommendations of 1972) per family. It is then hardly surprising that less than 2 percent of the total operated area was redistributed as part of ceiling surplus land acquired by the Indian state over a span of three and a half decades prior to 1992.²⁸

Moreover, the fact that less than 1 percent of the total operated area has been redistributed in every other state except West-Bengal and Assam, the two states where this proportion has been relatively higher at 6.36 percent and 5 percent respectively, is even more shocking. In U.P. specifically, contrary to the repeated claims made by the planners to bring about an egalitarian distribution of land among different sections of the cultivating peasantry, the surplus land (over and above the ceiling limit imposed on landholdings in 1960) acquired by the state did not even account for 1 percent of the entire cultivated land upto 1980 and consisted mostly of inferior land, a part of which was unfit for cultivation.²⁹ If this was the magnitude of land acquired in the first place, then the land actually distributed among the landless and semi-landless can well be imagined!

Alternatively, the generally high level of ceilings, numerous exemptions and widespread land transfers were all features that reflected a bias in favour of the dominant landholding classes in agrarian reforms programme, as carried out across the Indian countryside. By preventing a radical reform of India's agrarian structure from taking place along socialist lines, the existing rural class configuration by and large defined the specific form that planning would assume in the Indian economy.

²⁷ P.S. Appu. 1996. *Land Reforms in India: A Survey of Policy, Legislation and Implementation*. p.187.

²⁸ *Ibid.* p.190.

²⁹ K. Shankar. 1990. *Land Transfers: A Case Study*. pp.20 & 23.

The primary objective of increasing agricultural production and productivity was basically sought to be achieved by encouraging the growth of a class of dynamic capitalist farmers who would invest in productivity raising farm techniques. Land reforms, by widening peasant class differences, undoubtedly helped in the formation of such a class. However, the crucial question of profitability on which depended the willingness of land owning cultivating classes to invest in agrarian production still needed to be addressed. ‘Green Revolution’, an “elitist technocratic export oriented approach to development³⁰” was the Indian state’s answer to overcoming the barrier of feudal forms of surplus appropriation to capitalist investments in agricultural production.

What was the economic rationale behind the advocacy and subsequent spread of the ‘new technology’ to labour surplus underdeveloped economies such as India of the mid-1960s? How crucial was the role of the state in stimulating private investment in productivity raising techniques of production? How far did the adoption of green revolution technology in the context of an unreformed agrarian structure, succeed in meeting its primary objective of making India self-sufficient in foodgrains production and improving per capita foodgrains availability? What were the socio-economic consequences of relying on a strategy which promoted capitalism in Indian agriculture? These are some of the questions, the answers to which we seek in the following section.

3.3. Introduction of ‘New Agricultural Strategy’ and the Growing Socio-Economic and Political Influence of Rural Elite

The transformation of a structurally stagnant economy under the burden of colonial transfers, particularly in the half century before decolonisation, to a supply constrained system in less than two decades of attaining independence was indeed a remarkable one. The near zero rate of 0.11 percent at which foodgrains grew between 1891-1947 even as exportable cash crops registered a growth rate of 1.31 percent, the secular decline in per capita foodgrains output and availability of more than 25 percent, the massive burden of unilateral transfers to Britain for two centuries and which exceeded 25 percent of India’s budgetary revenues even at a time when

³⁰ J. Pathy. 1986. The United States Intervention in Third World Rural Policies. Social Scientist. Vol. 14, 4. pp.33-49.

primary product prices were falling and the world was reeling under the deflationary impact of the Great Depression, the burden of inflationary war financing on India – all of which taken together culminating in the disastrous 1943 Bengal famine in which more than 3 million people lost their lives, are all very well-documented and widely known facts of colonial Indian history.³¹ (See Chapter 1)

In other words, while the half century preceding India's independence witnessed the prevalence of very adverse macroeconomic trends that led to the structural stagnation of the economy, the period after political independence from Britain was marked by a 'definite qualitative break' from the unfavourable macroeconomic environment that existed during the colonial period.³²

To begin with, the end of the British rule in India meant an end to the massive unilateral transfer of surplus to Britain which had taken place throughout the two centuries of socio-economic and political subjugation of India to Britain. It implied that the income deflating, domestic demand depressing effect of politically imposed tribute no longer operated since now, not only could internal demand be expanded by investing India's budgetary resources within the economy, but equally crucially the foreign exchange earnings from its trade surpluses could be utilized to purchase imports necessary for its own industrialization.

That the beginning of Five Year Plans from 1950-51 onwards represents a sharp break in the rate of investment in Indian agriculture from earlier decades is well known. This was particularly true of the period 1950-51 to 1965-66 when the crowding-in effect of accelerating public investment was most clearly felt on private investment which too registered an increasing trend, though at a sluggish rate when compared with public investment.³³ Thus, with public investment growing at nearly double the rate at 35 percent and private investment at 16 percent, aggregate investment between the first two Five Year Plans increased by as much as 20

³¹ For long-term trends in per capita net food output and availability during colonial and post-independence periods, see U. Patnaik. 2007. 'The Republic of Hunger' in *The Republic of Hunger and Other Essays*. See Table 2 on p.127. Also, see U. Patnaik. 1999. 'Food Availability and Famine: A Longer View' in *The Long Transition: Essays on Political Economy*. pp. 323-350.

³² U. Patnaik. 1990. 'Introduction' to *Agrarian Relations and Accumulation: The 'Mode of Production' Debate in India*. pp.1-10.

³³ T. Shukla. 1968. 'Investment in Agriculture'. *EPW*. Vol.3,45.

percent.³⁴ Despite a deceleration in the rate of private investment, this trend increase in the rate of total investment continued in the third FYP mainly on account of a substantial stepping up of the tempo of public investment.

An examination of the trends in public investment on India's 'rural economy' (RE)³⁵ at large since the 1950s shows that they are broadly in conformity with the findings stated above. The shares of budgetary expenditure of Union and States on RE in total combined budgetary expenditure have been estimated to be the highest at 11.4 percent and 12 percent in 1950-51 and 1960-61. Infact, the plan allocation for agriculture, irrigation and flood control as a share of total plan expenditure during the first Five Year Plan at 37 percent was the highest ever recorded among all the five year plans and annual plans till date.³⁶

Against the backdrop of large scale development spending by the state under the plans, agricultural output (foodgrains and non-foodgrains) rose in response to the rapidly rising internal demand for foodgrains. Indeed, every single component of foodgrains (including coarse cereals and pulses) during the first Five Year Plan grew at a rate which was amongst the highest ever recorded in independent India thus far. (Table 3.1)

The rise in foodgrains output was accompanied by a simultaneous improvement in per capita availability of foodgrains. While the period between 1897 and 1944 witnessed a 25.4 percent decline in per capita availability of foodgrains, from 199 kg. to 148.5 kg., taking 5 year averages, with a further 8 percent drop by the individual year 1945-46, the first fifteen years under the plans saw a 10.3 percent rise in per capita foodgrains availability, from 152.7 kg. during the first plan period to 168.4 kg. during the third plan.³⁷ Though this level of food absorption during the mid-1960s at 168.4 kg. was higher than the abysmally low level of 159.3 kg. that prevailed

³⁴ Ibid. Estimates of private investment are based on author's estimates whereas those of public investment are based on plan estimates.

³⁵ 'Rural economy' is broadly defined to include (i) agriculture and allied activities (ii) rural development (iii) special area programmes (iv) irrigation and flood control (v) village and small scale industries (vi) fertilizer subsidy and (vii) co-operation. See P. Jha and N. Acharya. 2011. 'Expenditure on the Rural Economy in India's Budgets since the 1950s: An Assessment'. *Review of Agrarian Studies*. Vol. 1,2, July-Dec. pp. 134-156.

³⁶ Ibid.

³⁷ U. Patnaik. 2007. 'The Republic of Hunger' in *The Republic of Hunger and Other Essays*. pp. 115-150. See Tables 2 & 3 on pp. 127 & 128.

at the height of the crisis years of the Great Depression, it was evidently very low still and needed to be raised substantially. (Table 3.2)

However, the failure of the state in transforming India's agrarian structure through radical land reforms, especially against the backdrop of a rapid industrialization drive initiated during the first phase of Indian planning experience (1950-51 to 1964-65) was sooner or later, bound to manifest itself in a wage goods constraint, as indeed it did during the mid-nineteen sixties when the economy faced a severe food crisis leading to a rapid rate of food price inflation.³⁸ The problem was worsened by the two successive droughts of 1965-66 and 1966-67, Indo-Pak war of 1965 and the balance of payments problems. Faced with a rapidly deteriorating situation with regard to food output and availability per capita, India was forced to resort to food aid under P.L. 480 from the U.S. A revision by the U.S. of its food aid policy requiring India to pay for all subsequent food imports in dollars by 1971 rendered even the possibility of rupee imports of P.L. 480 wheat from the U.S. increasingly uncertain.³⁹ Consequently, not only was Indian currency forced to devalue by as much as 37.5 percent in 1966, there was tremendous pressure on Indian planners to reorient India's rural policy in favour of the 'new technology' with emphasis on foreign investment (particularly in India's fertilizer industry), import liberalization and elimination of domestic trade controls.⁴⁰

While the wheat imports from the U.S. that were contingent upon the adoption of green revolution technology by India and several other developing countries of Asia and Latin America in the quarter century following the second World War were absolutely essential for the latter, they undoubtedly played a crucial role in enabling the United States to dictate the pattern of international trade through the mechanism of food 'aid' during a period of United States hegemony across the capitalist world. Not only did the American food 'aid' policy, especially after the end of Marshall aid in 1952 and the Korean war in 1953, solve the problem of markets for the surplus

³⁸ Michael Kalecki. 1972. 'Problems of Financing Economic Development in a Mixed Economy' in *Selected Essays on the Economic Growth of the Socialist and the Mixed Economy*. Also, see S. Chakravarty. 1987. *Development Planning: The Indian Experience*.

³⁹ F. R. Frankel. 1969. 'India's New Strategy of Agricultural Development: Political Costs of Agrarian Modernization'. *The Journal of Asian Studies*. Vol. 28, 4. pp.693-710. See p.707.

⁴⁰ (i) J. Pathy. 1986. 'The United States Intervention in Third World Rural Policies'. *Social Scientist*. Vol. 14,4. pp.33-49.

wheat stocks in excess of domestic consumption held by the U.S. government, it was a means by which several third world countries were made dependent on subsidized U.S. grain imports, thereby ‘further integrating third world agrarian societies into the capitalist sphere of the world economy’.⁴¹ Moreover it has been argued that the spread of fertilizer and pesticide responsive HYV technology to third world agricultures was a lucrative strategy opening up profitable and assured markets for the U.S. multinationals, especially fertilizer and petrochemical giants and other agribusinesses.⁴²

However, one must not lose sight of the fact that it was an urgent need to reverse the declining per capita foodgrains availability in the decade following the mid-1960s foodgrains crisis in India that made the import of U.S. wheat under PL 480 a necessity at the time. Moreover, with land reforms failing to radically reform India’s agrarian structure, thereby inhibiting further expansion in the rate of growth of domestic foodgrains production, self-sufficiency in foodgrains production could be achieved only if yield raising technological progress was adopted. This was particularly true of a countryside where limits to further increases in agricultural production through physical area expansion had already been reached by the early 1960s. Furthermore, given the surplus labour reserves and land scarcity that existed in the economy, the nature of technological modernization had to be both land augmenting as well as labour absorbing. “Green Revolution” technology promised not only increased agricultural production through significantly higher yields but also expanding employment levels and was therefore, seen as the solution to India’s worsening food crisis during the mid-1960s.

The introduction of ‘new technology’ was thus justified on the grounds that it represented a breakthrough in foodgrains production and hence, prevented large parts of the developing world from the imminent threat of famine looming large in the mid-1960s. In India, the official claim was that the new strategy would help overcome problems of agricultural production and poverty, thereby taking the country to self-sufficiency in foodgrains production.

⁴¹ H. Friedmann. 1990. ‘The Origins of Third World Food Dependence’ in Henry Bernstein et al. (ed.) *The Food Question: Profits Versus People?*. pp.13-31.

⁴² (i) H. M. Cleaver, Jr. 1972. ‘The Contradictions of the Green Revolution’. *The American Economic Review*. Vol. 62, 1/2. pp. 177-186. (ii) E. Feder. 1976. ‘McNamara’s Little Green Revolution: World Bank Scheme for Self-Liquidation of Third World Peasantry’. *EPW*. Vol. 11,14. pp. 532-541.

Indeed, the green revolution technology was land-augmenting and also labour-demand augmenting up to a point. The two characteristics of tropicalised high-yielding varieties of wheat and rice, developed in Mexico and Phillipines respectively, were that they were (i) short-duration dwarf varieties modified by our scientists in the ICAR at Pusa to produce the particular varieties suitable for our climatic conditions and acceptable to consumers here; (ii) The HYV required irrigation, which expanded under canals and pumpset-powered wells to a) allow an irrigated crop to be grown in place of a rain-fed crop, raising output and labour demand; b) double cropping of the same unit of land became possible, which means effectively land was being augmented. Double cropping also raised the demand for labour. It is only with the further growth of mechanisation in some areas like Punjab, especially with the use of combine harvesters, that the process became net labour-displacing in those regions, even as it continued to be labour-demand generating in Eastern India.

Not surprisingly then, 'Green Revolution' as the New Agricultural Strategy (NAS) was pushed through in the mid-sixties. The introduction of NAS marked a decisive shift in the government's perception of what constituted the crucial constraint to further increases in the rate of growth of foodgrains production in India's agrarian sector.⁴³ The importance given to land reforms in earlier plans, at least on paper if not in practise, was now denied even in principle. Moreover, given the impossibility of further increases in agricultural production by acreage expansion, self-sufficiency in foodgrains production was sought to be achieved by an emphasis on increasing productivity through technological modernization. Further, with barely one-fourth of the cultivated acreage being irrigated in the mid-sixties, it is hardly a surprise that the state's efforts in promoting the new technology were concentrated in agriculturally advanced areas having irrigation facilities, where the scope for realizing its high-yielding potential was the maximum.

Thus, from the very beginning, 'green revolution' was a strategy wherein the government actively intervened to protect and promote the interests of the upper class of surplus producing rich farmers. It was introduced by the state as an attempt to promote capitalism in Indian agriculture.⁴⁴ In this context, it has been argued that in

⁴³ S. Chakravarty. 1987. *Development Planning: The Indian Experience*. pp.24-27.

⁴⁴ A. G. Frank. 1973. 'Reflections on Green, Red and White Revolutions in India'. *EPW*. Vol. 8,3.

the absence of land reforms, productive investment by landlords in capitalist direction will not take place without a very large rise in profitability in undertaking direct cultivation. Alternatively, if there is no land reform, landlords will not undertake direct cultivation along capitalist lines unless there is a discrete rise in surplus produced per unit area. Moreover, the increase in surplus per unit area should be such that Absolute Ground Rent constitutes only a tiny fraction of the entire surplus, the remaining portion (i.e., surplus produce net of rent) accruing to the capitalist farmer as profit on capital invested in undertaking direct cultivation.⁴⁵

A rise in profitability of farm production is indeed what the Indian countryside witnessed in the quarter century or so following the introduction of new technology in the mid-nineteen sixties. As prices of agricultural goods rose faster than those of industrial goods from the mid-1960s onwards⁴⁶, a substantial stepping up of public investment in the dissemination of the green revolution technology undoubtedly created an overall macroeconomic environment that was conducive for such private investments to be undertaken.

In other words, land reforms were not the only factor favourable to the emergence of landlord-capitalists and the rich peasants. Large development spending under the Plans expanded the internal demand for foodgrains and made it profitable, for the first time, for a rich peasant stratum to emerge in any big way. However, it was a combination of sharply rising prices of agricultural produce from the mid-1960s and the introduction of productivity-raising green revolution technology that finally helped break the feudal barrier to capitalist investments in farm production.

As is well known, the success of the new technology even in areas having assured water supply depended crucially on state support by way of increased public investment in subsidized HYV seeds, chemical fertilizers, pesticides, cheap credit, price support measures etc. Not only did an increase in public investment in rural infrastructure (particularly irrigation), subsidized inputs (such as chemical fertilizers, HYV seeds and pesticides) as well as cheap credit have a “crowding-in” effect on private investment, price stabilization mechanisms put in place by the government by way of state administered pricing system (such as MSP) helped in maintaining those

⁴⁵ U. Patnaik. 1986. *The Agrarian Question and the Development of Capitalism in India*.

⁴⁶ R. Thamarajakshi. 1990. 'Intersectoral Terms of Trade Revisited'. *EPW*, pp.A-48-A-52.

profit margins at levels required for capitalist investment in farm production to be forthcoming by creating favourable market conditions.⁴⁷ This is reflected in a significant growth in private investment in productivity raising technological improvements, especially in North-Western parts of the country comprising Punjab, Haryana and Western Uttar-Pradesh- a region which could and did benefit most from the adoption of high yielding capital intensive technology package (of HYV seeds, fertilizers, pesticides and irrigation).⁴⁸ The spread of ‘green revolution’ technology to Southern and Western parts of the country in the mid-seventies and finally, to eastern and central regions during the nineteen eighties implied that by the beginning of nineteen nineties, capitalism (in varying degrees) had penetrated almost all states in rural India.⁴⁹

With foodgrains production trebling from 50 million tons in 1951 to 150 million tons in 1983-4, green revolution has indeed fulfilled the primary objective of attaining “self-sufficiency” in foodgrains output.⁵⁰ (We discuss the quantitative impact of the capitalist tendency in Indian agriculture as a result of the adoption of ‘green revolution’ technology package on growth rates of agricultural output, area and productivity of major crops in the next chapter.) Further, the rise in per capita availability of foodgrains by 13.1 percent between 1951-55 and 1986-90, though woefully inadequate, assumes an even greater significance especially when viewed against the backdrop of a sharply declining trend in per head foodgrains absorption during the ongoing neoliberal reforms period since the 1990s (Chapter 4, Table 4.1). However, national “self-sufficiency” in foodgrains production as also a modest improvement in per capita availability of foodgrains have been achieved at the cost of

⁴⁷ The 1980s saw much higher rates of growth of both cultivators’ incomes as measured by the concept of ‘Farm Business Incomes’ (FBI), and of agricultural wage labourers as measured by ‘Hired Labour Payments’ (HLP), compared to the 1990s. The rates of growth of FBI and HLP fell from 3.61 and 4.40 percent during TE 1983-84 to TE 1990-91 to 1.47 and 3.10 percent respectively during the 1990s. See A. Sen and M.S. Bhatia. 2004. *Cost of Cultivation and Farm Income*. Table VIII.11, p. 159. Also see Table VI.7, p.104 which shows a marked fall in profitability ratios of almost all oilseeds and cotton during the 1990s compared to the 1980s.

⁴⁸ T.J. Byres. 1981. ‘The New Technology, Class Formation and Class Action in the Indian Countryside’. *Journal of Peasant Studies*. Vol. 8,4. pp. 407-484.

⁴⁹ S. S. Gill and R. S. Ghuman. 2001. ‘Changing Agrarian Relations In India: Some Reflections From Recent Data’. *The Indian Journal of Labour Economics*. Vol. 44,4. pp. 809-826. Also, see J. Mehta. 2004. ‘Changing Agrarian Structure in the Indian Economy’. *Revolutionary Democracy*. Vol. X, 1.

⁵⁰ U. Patnaik. 1990. ‘Some Economic and Political Consequences of the Green Revolution in India’ in Henry Bernstein et al. (ed.) *The Food Question: Profits Versus People*. pp. 80-90.

growing socio-economic inequalities not only between regions but between cultivating classes within a given region as well.⁵¹

Below, we examine the uneven spread of new technology in Indian agriculture and the consequent impact on regional concentration of foodgrains output per capita.

The Uneven Spread of Modern Technology and the inevitable lopsidedness in regional growth pattern

Uneven Spread of New Technology Accentuates Regional Imbalances in Foodgrains Production Per Capita

“Green Revolution”, a strategy to promote capitalism in Indian agriculture, has intensified the many contradictions of capitalist development in a third world predominantly agrarian economy like India. As early as the late 1960s, it was pointed out that the adoption of new technology within an unreformed agrarian structure, “very often leads only to dualism in the agricultural sector... rather than to the transformation of traditional agriculture”.⁵² Today, after nearly half a century of the introduction of technological reforms, it is clear that this dualism in Indian agriculture has not only persisted but has indeed intensified. In a countryside where capitalism had penetrated almost all states by early 1990s, albeit unevenly, sharp inequalities in the level and rate of agricultural development can be seen not only between regions and states but also within each area affected by the new technology.⁵³

Thus, we find that while an irrigated state like Punjab had as much as 92.9 percent of its net sown area having assured water supply, a semi-arid rainfed area like Maharashtra had a mere 14.4 percent of its net sown area irrigated in 1996-97. A state like Uttar Pradesh had the third highest proportion (after Punjab and Haryana (76.2%)) of its net sown area irrigated at 68.9 percent among all major Indian states.⁵⁴ Furthermore, we find that the four Northern states of Punjab, Haryana, Uttar Pradesh

⁵¹ Ibid.

⁵² K.N. Raj. 1970. ‘Some Questions Concerning Growth, Transformation and Planning of Agriculture in the Developing Countries’ in E.A.G. Robinson and M. Kidron (ed.). *Economic Development in South Asia*. Proceedings of a Conference held by the International Economic Association at Kandy, Ceylon. pp. 102-126. See especially p.125.

⁵³ S. S. Gill and R. S. Ghuman. 2001. ‘Changing Agrarian Relations In India: Some Reflections From Recent Data’. *The Indian Journal of Labour Economics*. Vol. 44,4. pp. 809-826.

⁵⁴ Ibid. See p.813.

and Rajasthan alone accounted for as much as 71.37 percent of the total number of tractors in use in Indian agriculture during 1990-93.

In other words, in a predominantly agrarian economy like India where three-fifths of the net sown area is still rainfed,⁵⁵ it is hardly surprising that the spread of new technology has been very uneven. Even the official Indian data sources like the National Sample Survey (NSS) acknowledge the widely held belief that 'not only has the geographical spread of the improved technology been uneven, but the sharing of the benefits of technology by different sections of the farmers has also been extremely unequal.'⁵⁶

Table 3.3 examines the geographical spread of modern farming in the fifteen major Indian states. It shows how uneven the adoption of new technology has been in different parts of the country. While the spread of improved farming practices such as area under improved seeds, fertilizers, manure etc. appears to be relatively more evenly distributed among states, the difference in adoption of modern technology is particularly stark when we look at the extent of mechanization in agriculture as also the development of modern irrigation system. We find that the northern states of Punjab and Haryana have averages which exceed All-India figures by a fair margin. These were the states where it was indeed most profitable to invest in productivity raising HYV technological package. They were not only agriculturally well developed, especially in terms of irrigation, roads, railways, credit facilities etc. but also had a substantial section of the well-to-do cultivating peasantry who could afford to switch over to a technology which demanded a much higher initial as well as working capital outlay per unit output. Uttar Pradesh, within the same region, though fares better than most states, especially in terms of percentage area irrigated, use of fertilizers, mechanically tilled area etc, nevertheless has some of the averages lower than even the national average. As a result, the difference between U.P. and the other two states in the North is quite pronounced. At the other end, eastern states (except West-Bengal and Bihar) are clearly lagging far behind. Moreover, it is evident that the

⁵⁵ Mid-term Appraisal of the Tenth Five Year Plan (2002-07), Planning Commission. Chapter 5. 'Agriculture and Food Security'. See p. 198.

⁵⁶ See 'A Note on Cultivation Practises in India: NSS 54th Round (Jan. 1998- June 1998). Section I. Introduction' in *Sarvekshana*. 2000. Vol. XXIV,1. p.1.

arid and semi-arid states like Madhya Pradesh and Maharashtra have indeed progressed very slowly in adopting “green revolution” technological package.

It is hardly a surprise that Northern region with the highest level of capital accumulation in agriculture is precisely the region where highest yields of traditional HYV crops of paddy and wheat have been registered.⁵⁷ As a result, foodgrains output per capita has grown at the fastest rate in this part of the Indian countryside. (Table 3.4)

Table 3.4 shows that barring North and North-West, every other state (except West-Bengal) and region of India has registered negative growth rates of foodgrains per capita between early-sixties and mid-eighties which continued to be negative till as late as the latter half of 1990s (barring West-Bengal, Karnataka and Gujarat). Northern region however presented a sharply contrasting scenario with an average growth rate of 65 percent by the mid-1980s which further accelerated to 93 percent by the end of 1990s. Within the North-Western region, Punjab and Haryana together saw a 134 percent rise in foodgrains per capita by the mid-1980s over early 1960s which further increased to 138 percent by the late 1990s.

However, if we look at the trends in per capita foodgrains output between 1996-98 and 2008-10, the situation is indeed alarming. For the first time since the early 1960s have all the major fifteen states taken together registered a negative growth rate. Moreover, the traditional heartland of green revolution in India, viz., the North and North-Western region, has for the first time witnessed a negative growth rate of 15 percent during this period of neoliberalism in India (See Chapter 6). Even in Punjab and Haryana, growth rate of foodgrains per capita, though positive, has decelerated sharply. Infact, barring the Southern region, all other regions have experienced negative growth rates between the triennium ending 1996-98 and 2008-10, as Table 3.4 shows. (The reasons for this deceleration in the growth of agricultural output have been analysed in Chapter 6).

This imbalance induced by the new technology is an inevitable fallout of the introduction of technological reforms within the context of an unreformed agrarian

⁵⁷ S. S. Gill and R. S. Ghuman. 2001. . 2001. ‘Changing Agrarian Relations In India: Some Reflections From Recent Data’. *The Indian Journal of Labour Economics*. Vol. 44,4. pp. 809-826. See Table 5 on pp. 814 and 815.

structure. Nevertheless, notwithstanding the regional concentration of foodgrains production brought about by the new technology, that green revolution did help India achieve self-sufficiency in foodgrains production can hardly be contested. However, such “national self-sufficiency combined with mass poverty”⁵⁸ was bound to be an unavoidable consequence of relying on a strategy which promoted capitalism in Indian agriculture.

In the next chapter, we examine long-term trends in agricultural production, area and productivity in India to understand the contradictions inherent in the growth process underlying the new technology. This will be followed by a discussion of the same in Uttar Pradesh, a state where the imbalance induced by technological reforms can be seen most clearly.

⁵⁸ U. Patnaik. 1990. ‘Some Economic and Political Consequences of the Green Revolution in India’ in Henry Bernstein et al. (ed.) *The Food Question: Profits Versus People*. pp. 80-90.

Table 3.1: Production Growth Rates of Foodgrains by Five Year Plans of India

Five Year Plans	Rice	Wheat	Coarse Cereals	Total Cereals	Pulses	Total Foodgrains
First FYP: 1950-51 to 1955-56	6.41	8.12	7.07	6.95	6.77	6.92
Second FYP: 1955-56 to 1960-61	4.63	4.79	4.37	4.56	3.14	4.33
Third FYP: 1960-61 to 1965-66	-0.61	-0.92	-0.81	-0.72	-3.36	-1.11
Fourth FYP: 1969-70 to 1973-74	0.99	2.01	-1.67	0.47	-4.75	-0.10
Fifth FYP: 1974-75 to 1978-79	7.15	9.10	2.97	6.53	3.09	6.19
Sixth FYP: 1980-81 to 1984-85	2.94	5.99	2.32	3.74	3.55	3.73
Seventh FYP: 1985-86 to 1989-90	4.46	3.20	7.52	4.67	0.92	4.35
Eighth FYP: 1992-93 to 1996-97	1.89	4.31	-1.98	1.96	1.34	1.92
Ninth FYP: 1997-98 to 2001-02	2.36	1.63	1.80	2.00	-3.59	1.62
Tenth FYP: 2002-03 to 2006-07	5.77	2.48	4.37	4.25	3.87	4.22
Eleventh FYP: 2007-08 to 2011-12	1.39	4.62	1.42	2.61	5.31	2.79

Source: RBI, Handbook of Statistics on Indian Economy, 2009 and 2013, Sep.

Table 3.2: Trends in Per Capita Net Availability of Foodgrains in India (Five-year average), 1897-1902 to 1986-90

Period		Per Capita	
		Availability (Kg.)	
Colonial period	1897-1902	199.0	
	1903-1908	177.3	
	1909-1914	197.3	
	1915-1920	193.1	
	1921-1926	185.6	
	1927-1932	174.5	
	1933-1938	159.3	
	1939-1944	148.5	
	Individual Year 1945-46	136.8	
	Total Change in per Capita Availability, percent: 1897-1902 to 1939-44	-25.4	
Post-independence period	1951-55	152.72	
	1956-60	160.77	
	1961-65	168.44	
	1966-70	158.72	
	1971-75	156.01	
	1976-80	161.42	
	1981-85	166.29	
	1986-90	172.77	
	Change in per Capita Availability, percent		
	1951-55 to 1961-65	10.3	
	1966-70 to 1986-90	8.85	
	1971-75 to 1986-90	10.74	
Total Change, 1951-55 to 1986-90	13.1		

Source: Patnaik, Utsa. "The Republic of Hunger" in 'The Republic of Hunger and other Essays'. March 2007. First Edition. See tables 2 and 3. pp.127 and 128.

Table 3.3: Uneven Geographical Spread of Modern Farming Across 15 Major Indian States

Region/State	Percentage of AFMC reportedly under					Percentage of AFMC irrigated and availability of irrigation facilities					Percentage of mechanically tilled AFMC and no. of tractors and power tillers per unit area (1992)*			Percentage of AFMC harvested mechanically
	Improved Seeds	Fertilizers	Manure	Weedicides	Pesticides	Irrigated AFMC	NSA in canal areas	Percentage of Cultivator Households Owning Well/Tubewell	Households Owning Pump		Percentage of tractor tilled AFMC	Tractor (Per 10,000 hectares of operated area)	Power Tiller (Per 10,000 hectares of operated area)	
									Electric	Oil				
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)
I North														
-Haryana	78	89	53	61	59	90	58	52	28	30	94	387	317	7
-Punjab	84	99	69	79	88	97	60	73	38	51	97	1024	584	41
-Uttar Pradesh	52	92	74	17	28	91	30	23	21	5	76	215	58	2
II East														
-Assam	43	48	54	13	30	19	3	27	3	1	11	0	23	3
-Bihar	49	84	66	18	48	76	26	21	15	2	48	59	25	2
-Orissa	40	65	88	15	35	30	30	8	2	1	12	5	2	2
-West Bengal	72	94	73	26	84	72	26	19	12	1	47	37	86	6
III South														
-Andhra Pradesh	65	94	86	22	82	72	32	36	6	30	51	48	1	4
-Karnataka	65	82	83	23	55	41	25	23	2	19	27	50	11	24
-Kerala	37	67	72	14	38	46	31	61	2	14	15	3	15	3
-Tamil Nadu	68	88	84	51	84	84	31	49	15	33	59	66	18	2
IV West Central														
-Gujarat	84	95	93	31	76	73	19	42	24	21	67	103	0	5
-Madhya Pradesh	40	73	69	20	38	56	17	28	8	20	36	73	12	1
-Maharashtra	69	79	72	13	49	44	18	34	4	29	16	34	2	9
-Rajasthan	68	61	76	10	26	61	16	50	24	20	89	91	10	2
All India	59	81	74	22	47	66	25	29	13	13	54	109	41	6

Source: Sarvekshana. Volume XXIV. No.1. 84th Issue. July-September 2000. See 'A Note on Cultivation Practises in India: NSS 54th Round (Jan. 1998- June 1998). Section I. Introduction.' Section 4. Main Findings. Pp.11-43. For columns (i) to (v), see 'Statement 17' on p.32. For columns (vi) to (x), see 'Statement 20' on p.37. For columns (xi) to (xiii), see 'Statement 24' on p.42 and for column (xiv), see 'Statement 25' on p.43. 'AFMC' stands for 'Area under Five Major Crops'. Further, these five major crops are five most important field crops identified on the basis of value of production of the crops (excluding plantation crops and orchards) from among a list of crop-season combinations involving 12 crop-groups. The set of five major crops is not a fixed set but varies from household to household. See NSS Report No. 451. (54th Round: Jan. 1998-June 1998). Cultivation Practises in India. Chapter II. Concepts and Definitions. p.6.

Table 3.4: State and Region Foodgrains Output Per Capita*, 1960-2010

Region/State	1960-62 (1)	1972-74 (2)	1984-86 (3)	1996-98 (4)	2008-10 (5)	Percent Change [(3-1)/1]	Percent Change [(4-1)/1]	Percent Change [(5-1)/1]	Percent Change [(5-4)/4]
I North and North-West									
- Haryana & Punjab	313.5	454.0	734.9	745.4	827.2	134.4	137.8	163.9	11.0
-Uttar Pradesh	184.5	176.9	242.8	253.5	226.4	31.6	37.4	22.7	-10.7
-J&K, HP	113.9	222.1	212.4	185.5	157.1	86.5	62.9	37.9	-15.3
Average	204.6	234.7	337.2	394.8	335.4	64.8	92.98	63.9	-15.0
II East									
-Assam	145.4	137.9	121.1	139.5	129.4	-16.7	-4.02	-11.0	-7.2
-Bihar	158.6	140.0	136.9	145.05	117.0	-13.7	-8.5	-26.2	-19.4
-Orissa	225.1	200.1	217.1	174.3	192.6	-3.5	-22.5	-14.4	10.5
-West Bengal	147.5	151.0	154.6	179.4	183.9	4.8	21.6	24.7	2.5
Average	162.2	152.9	152.9	159.6	149.7	-5.7	-1.6	-7.7	-6.2
III South									
-Andhra Pradesh	180.8	175.3	161.5	164.4	222.7	-10.7	-9.1	23.2	35.5
-Karnataka	161.6	185.0	154.3	171.8	195.3	-4.5	6.31	20.9	13.7
-Kerala	61.9	58.9	43.6	27.8	17.2	-29.6	-55.0	-72.2	-38.1
-Tamil Nadu	160.9	146.6	134.1	118.5	108.8	-16.7	-26.4	-32.4	-8.2
Average	152.3	150.4	133.9	120.6	155.8	-12.1	-20.8	2.3	29.2
IV West Central									
-Gujarat	103.5	95.2	95.5	107.7	120.4	-7.7	4.6	16.3	11.8
-Madhya Pradesh	273.9	231.4	237.2	240.95	201.5	-13.4	-12.3	-26.4	-16.4
-Maharashtra	165.0	110.0	124.7	135.6	120.3	-24.4	-17.8	-27.1	-11.3
-Rajasthan	242.1	199.8	180.4	237.5	223.5	-25.5	-1.9	-7.7	-5.9
Average	198.6	158.3	160.3	180.4	164.4	-19.3	-9.1	-17.2	-8.9
All Regions	178.9	172.0	192.1	201.8	200.4	7.4	12.8	12.0	-0.7

Source: Patnaik, Utsa. *Political Economy of State Intervention in Food Economy*. EPW. Vol.XXXII, Nos. 20 and 21, May 17-24, 1997. Figures for 1996-98 have been updated from data on production of foodgrains given in the *Handbook of Statistics on Indian Economy*, RBI. 1999-2000. Population figures are from *Statistical Abstract, India*. 2000. p.9.

Note: *(Annual average for selected triennial periods in kg. per head of regional population). For the estimates of triennium ending 2008-10, output and population figures of Uttar Pradesh include data on Uttarakhand, Bihar includes Jharkhand and Madhya Pradesh includes Chattisgarh.

Chapter 4

Trends in the Growth of Agricultural Output in India and in Uttar Pradesh

In the previous chapter we explored India's modern agrarian development during the first four decades after Independence, in the broad context of the public policies acting on the agrarian sector, policies which were developed mainly outside of that sector as part of development planning. We saw that land reforms, although quite limited in terms of the extent of re-distribution of land, did impact the agrarian structure by giving a stimulus to direct capitalist production. This was reinforced by the generally expansionary fiscal policies followed at that time, with substantial state investments on irrigation and rural infrastructure (as well as non-agricultural spending) which raised employment and helped the domestic market for food and necessities to grow fast. The profitability of producing for the domestic market rose after centuries of producing for the external market. Green revolution technology in the food crops, introduced in this context was widely adopted in Northern India and less widely in other areas where there was assured irrigation. Even though growth rates of grain output reached levels which were high by historical standards they could not match the increasing demand, and food prices rose faster than other prices turning the terms of trade in favour of agriculture while adversely affecting the consumption levels of the rural poor.

The substantial private investments in productivity raising technological improvements which led to the expansion of grain output could not have happened had it not been for the crucial support provided by the state in raising the profitability of agricultural production which eventually helped break the 'rent barrier' to capitalist investments in farm production. The technological reforms therefore highlight both the effectiveness as well as constraints of such state intervention. Demand management by the state in the form of large scale public investments in irrigation and other rural infrastructure, input and credit subsidies, price support measures etc. created a favourable macroeconomic climate for private investments in agricultural production to be forthcoming, but it also resulted in the concentration of economic surplus in the hands of a minority of landlords-turned capitalist and rich farmers in agriculturally advanced areas.

This chapter explores the issues touched upon above in greater detail and with reference to Uttar Pradesh. Section one looks critically at the contradiction in the path of agrarian development as it unfolded in the quarter century or so following the introduction of new technology, namely attaining national ‘self-sufficiency’ amidst continuing inadequacy of and lack of access to food for the majority. The second section looks at the quantitative impact of the capitalist tendency in Indian agriculture as a result of the adoption of ‘green revolution’ technology package on growth rates of agricultural output, area and productivity of major crops. Given that the yield raising HYV package was introduced within the context of an unreformed agrarian structure with barely one-fifth of the total cultivated area having irrigation facilities then, the pattern of growth during the period of technological reforms was bound to be lopsided. This is followed by a discussion of the same in Uttar-Pradesh in section three. The concentration of agricultural production to specific crops (notably cereals like wheat and rice) and regions (mainly North-Western parts of the country comprising Punjab, Haryana and Western U.P.) is examined.

4.1. Long-term Trends in Foodgrains Output and Domestic Consumption, 1951 to 2010

The entire post-Independence period is relevant for studying long-term trends, but as is well-known, there was a marked break in the nature of public policies from the early 1990s, with the new economic reforms and trade liberalization. We discuss the changes in the public policy regime in the next chapter, and here confine ourselves to mentioning the two most important changes which affected the agrarian sector, and marked a definite break from what is referred to as the Nehruvian *dirigiste* regime which prevailed during the four decades after Independence. First, the policy emphasis shifted to ‘fiscal consolidation’ involving quite sharp decline in the share of the budget deficit in GDP, which was achieved by cutting public Plan spending, the cuts falling mainly on plan expenditures on rural development and the social sector. Introduced in the 1990s, policies of fiscal contraction were continued and mandated by passing the Fiscal Responsibility and Budget Management Act in 2004. Clearly this was the exact opposite of the expansionary fiscal policies followed earlier and especially during the second half of the 1980s (when in response to a moderate drought in 1987 public spending had risen sharply in the 7th five year plan). This

sharp rise in spending had been severely criticized as irresponsible, by those international organizations who wished to see economic reform policies, termed neo-liberal policies in brief, which had already been operative in many developing countries.

Second, trade was liberalized, slowly at first as required by the WTO rules, but by the end of the 1990s all the direct quantitative restrictions on trade were removed, and tariffs were reduced to even lower levels than the WTO required them to be lowered. Also certain price stabilization measures for farmers were given up especially the purchase at minimum support prices of commercial exportable crops. Again this was the opposite of earlier policies and definitely helped to expose farmers to global price changes from which they had been protected for many decades.

Most economists in the early 1990s welcomed the reforms, and believed that greater trade-openness would benefit Indian farmers, as the international organisations had argued when pressing for these changes in India. The criticisms of academics in India related mainly to the fact that India was a large country and its entrance into global trade in any substantial way say for rice, would lower global price. But a very different type of warning was repeatedly sounded by Utsa Patnaik who argued that the policy changes amounted to imposing ‘demand-deflation’ on the mass of the people. The public spending cuts, through Keynesian ‘multiplier effects’ working in reverse, would raise unemployment and lower rural incomes hence purchasing capacity; while the new policy of free and unrestricted trade, would lead to diversion of land and resources to export crops at the expense of food grains as global demand was allowed to act on agriculture. Food absorption in the country (measured by per capita availability) would decline as primary exports rose, just as had happened under colonial policies of free trade earlier (Patnaik 1996, 2003a, 2003b).¹

We look at the long-term growth trends below bearing these issues in mind. The question is, whether we actually see any marked structural break between the pre-

¹(i) U. Patnaik. 1996. ‘Export oriented Agriculture and Food Security in Developing Countries and in India’. *EPW*, Vol.31, 35-37. Reprinted in U. Patnaik 1999. *The Long Transition –Essays on Political Economy*. pp. 351-416. (ii) U. Patnaik. 2003a. ‘On the Inverse Relation between Primary Exports and Food Absorption in Developing Countries under Liberalized Trade Regimes’ in J.Ghosh and C.P. Chandrasekhar (ed.) 2003. *Work and Well-being in the Age of Finance*. pp. 256-286. (iii) U. Patnaik. 2003b. ‘Global Capitalism, Deflation and Agrarian Crisis in Developing Countries’. *Journal of Agrarian Change*, Vol. 3,1&2, Jan.&April. pp. 33-66. Included also in S. Razavi (ed.) 2003. *Agrarian change, Gender and Land Rights*. London: UNRISD and Blackwell, 2003.

reform and post-reform periods as regards trends in food grain output and availability. Reduction in public development spending under the plans would impact the agricultural sector only with a lag, since the previous large-scale expenditures would show their effects for some years, even during the new policy regime. So the break, if any, could be expected from the mid-1990s.

Starting first with the pre-reform period, we see that the introduction of modern technology through the provision of high yielding varieties of seeds, fertilizers, pesticides etc. greatly contributed to an increase in the total output of foodgrains in the quarter century or so before the economic reforms. Food grains output rose over three and a half times from 50 million tons in 1950-51 to 175 million tons by 1990-91, or an annual growth rate of 3.2 percent, a rate which was thirty times higher than the 0.11 percent annual growth during the five decades before Independence.² The population growth rate was on average higher after Independence, than during the last five decades of colonial rule which were marked by very high morbidity and mortality, and a male life expectancy of only 32 years.

During 1951-52 to 1990-91, the foodgrains growth rate kept ahead of the population growth rate and so the per capita output of food grains rose slowly, from its lowest point of 136 kg. in 1946, to an average of 170 kg. during 1986-90. (Table 4.1) True, this latter figure was about the same as the low 171 kg. registered during Great Depression during 1927-1932.³ But it was certainly much higher than the abysmally low figure of 136 kg in 1946, which India inherited from the British (and this figure would have been lower still if 3 million people had not been removed from the world entirely by the Bengal famine). The relevant period to take for looking at the impact of economic reform policies is from about 1993-1995 onwards. This is because the previously initiated large-scale spending on irrigation and other development during 1985-90, would still be yielding results for a few years even after the beginning of the reforms from mid-1991. We find that grain output per head continued to rise up to 1995, and per capita output registered an average of 178 kg. during 1991-95 – the highest level India has seen up to the present. After this point

² (i) Reserve Bank of India. 2011. *Handbook of Statistics on Indian Economy*.

³ For trends in per capita net output of food grains during the colonial period calculated from data in George Blyn (1966), see U. Patnaik. 2007. 'The Republic of Hunger' in *The Republic of Hunger and Other Essays*. Table 2 on p. 127.

namely the mid-1990s, both output per capita and availability per capita started declining – this is a remarkable outcome which marked the next decade and half as Table 4.1 shows.

While per head output had declined by 62 kg. per capita during the colonial half century before 1947 (from 198 kg to 136 kg), it had recovered by 42 kg. per capita in the next fifty years, from 136 kg. to 178 kg. by 1991-95. The recovery was not complete, but it wiped out if not all, about two-thirds of the earlier decline. As regards availability per capita, while in absolute terms it was still very low, the consumption level reached by 1991-95 meant a calorie intake which was higher on average by 400 calories per head per day compared to the year before Independence.

Total output of foodgrains increased significantly enough to change India from a net importer of foodgrains in the period between 1951-1975 to a small net exporter from 1975 to 1985⁴ as Table 4.1 shows, though imports were again evident in 1985-1990 to maintain a higher level of availability than before. Attaining overall ‘self-sufficiency’ in food grains production certainly did not imply access to adequate food for all. The persistence of widespread under employment and rural poverty implies a lower than average level of food grains availability for majority of the rural poor who lack purchasing power. Nevertheless, the extremely modest and slow but rising trend in per capita availability of cereals since the mid-1970s amidst widening regional and class inequalities can be attributed to the numerous demand stimulating measures and poverty alleviation schemes undertaken by the state. It is evident from Table 4.1, that the decades of economic reforms in India have undone whatever meager improvements had been made in the access to food by an average Indian citizen during the period of technological reforms.

⁴ U. Patnaik. 1990. ‘Some Economic and Political Consequences of the Green Revolution in India’ in Henry Bernstein et al. (ed.) *The Food Question: Profits Versus People?* p.83.

Table 4.1: Trends in Average Net Output and Availability Per Capita of Cereals and Foodgrains in India (Five year average)

Period	Average Net Output Per Capita (kg.)		Net Annual Availability of Foodgrains Per Capita (kg.)		
	Cereals	Foodgrains	Cereals	Pulses	Total
1951-55	117.4	139.6	129.1	23.6	152.7
1956-60	125.7	149.8	135.9	24.8	160.8
1961-65	134.9	157.1	146.3	22.1	168.4
1966-70	129.8	147.7	140.9	17.8	158.7
1971-75	140.2	156.2	140.5	15.5	156.0
1976-80	147.1	162.6	145.8	15.6	161.4
1981-85	153.6	168.0	151.9	14.3	166.3
1986-90	156.0	169.7	158.2	14.6	172.8
1991-95	164.8	178.0	162.3	13.7	175.9
1996-00	164.2	176.5	158.8	12.5	171.2
2001-05	152.8	163.2	151.2	11.8	163.0
2006-10	157.5	168.4	147.7	13.3	161.0
<i>Change in per Capita Net Output and Availability of Foodgrains, percent</i>					
1951-55 to 1961-65	14.9	12.5	13.3	-6.4	10.3
1966-70 to 1991-95	27.0	20.5	15.2	-23.03	10.8
1951-55 to 1991-95	40.4	27.5	25.7	-41.9	15.2
1996-00 to 2006-10	-4.1	-4.6	-7.0	6.4	-6.0

Source: Patnaik, Utsa "The Republic of Hunger" in 'The Republic of Hunger and Other Essays', Table 3 on p.128 for Net availability of Foodgrains per Capita for 1951-55 to 1986-90. For the period after 1990, Economic Survey, 2012-13 is used. For data on Net Output of foodgrains, Reserve Bank of India 'Handbook of Statistics on Indian Economy' and for population figures, Economic Survey, 2012-13 has been used.

The declining net output of foodgrains per capita since the mid-1990s brought about by a particularly sharp deceleration in the growth of foodgrains output is not confined to foodgrains but is equally true of high-valued commercial crops like oilseeds, sugarcane, jute and tobacco, all of which have seen decline in growth rates during the fifteen years after 1990-93. Thus the period of economic reforms has seen a sharp decline in the growth of total agricultural output at the All-India level compared to the pre-reforms period, with most states including U.P. posting reduction in the growth of total agricultural output to less than half the rate that prevailed during the 1980s.

It is useful to note the findings of a planning commission sponsored project of May 2009 that was undertaken by leading economists of India like G.S. Bhalla and Gurmail Singh to compare the growth performance of Indian agriculture during the economic reforms period (1990-93 to 2005-08) with that of the pre-reform period (1980-83 to 1990-93 and 1962-65 to 1990-93).⁵ The study has analysed growth rates of output, area and yield covering as many as 44 crops (valued at constant 1990-93 prices) which constitute nearly 99.58 percent of the total area under the 46 crops covered by the DES. Their findings show that all regions and most states, except Gujarat and Maharashtra, have registered a sharp decline in the growth of agricultural output during 1990-93 to 2005-08 compared to the pre-reforms period. The deceleration, from 3.06 percent during 1980-83 to 1990-93, to 1.31 percent in the decade and a half after 1990-93 is sharper in Uttar Pradesh compared to the decline from 3.37 to 2.10 percent at the All-India level. The lowest growth was recorded by the eastern region at less than 1 percent (0.78) during 1990-93 to 2005-08 in sharp contrast to the 3.61 percent growth rate registered by it during the previous period.

Further, all the chief sources of growth namely area, yield and cropping intensity (ratio of gross sown to net sown area) have registered a noticeable decline after 1990-93. With productivity gains contributing as much as 84.5 percent of the overall growth of agricultural output in the period marked by technological change, from 1962-65 to 2005-06, a slowing down of yield growth during the reforms period is indeed a cause of serious concern. In U.P., the productivity growth has declined from 3.71 percent, higher than the national average of 3.17 percent during 1980-83 to 1990-93 to 1.2 percent, lower than the All-India rate of 1.77 in the economic reforms period after 1990-93. This decline in productivity growth is attributed to the shift in policy emphasis away from the expansionary fiscal policies pursued earlier to 'fiscal consolidation' involving cutbacks in public spending, particularly on irrigation and other rural development expenditures⁶.

⁵ (i) G.S. Bhalla and G. Singh. 2012. *Economic Liberalisation and Indian Agriculture: A District-level Study*. Also see (ii) G.S. Bhalla and G. Singh. 2009. 'Economic Liberalisation and Indian Agriculture: A Statewise Analysis'. *EPW*. Vol. XLIV, 52. pp. 34-44.

⁶ Ibid. Also see U. Patnaik. 2002. 'Deflation and Déjà Vu: Indian Agriculture in the World Economy' in V. K. Ramachandran and M. Swaminathan (ed.). *Agrarian Studies: Essays On Agrarian Relations In Less-Developed Countries*. pp. 111-143.

Area expansion too has registered a noticeable decline. While limits to increasing agricultural production through physical area expansion had already been substantially reached by the mid-1960s, absolute area under cultivation declined for the first time since independence from 142.29 million hectares in 1990-93 to 140.77 million hectares in 2005-08 at the All-India level⁷. This decline in net sown area under cultivation is mainly on account of a drastic fall in area under coarse cereals by as much as 17.2 percent in the course of fifteen years after 1990-93. (See Table 4.3). Even though gross sown area which reflects the intensity of cropping recorded a modest recovery after 1990-93 compared to the earlier decade starting 1980-83, its growth rate at 0.33 percent and 0.11 percent at the All-India level and in U.P. during the reforms period is below the 0.51 percent and 0.52 percent respectively, recorded during 1962-65 to 1980-83. The eastern and southern regions posted negative growth rates of both gross and net sown area during 1990-93 to 2005-08.

Underlying these broad trends detailed above are significant crop-specific changes that have taken place over time. In the following two sections, we seek to analyse for All-India and U.P. such crop-specific trends in output, area and productivity using the basic data.

4.2. Growth Performance of Indian Agriculture: Trends in Output, Area and Productivity of Major Crops

The long-term trends in agricultural production, area and productivity are shown in summary terms in Tables 4.2, 4.3 and 4.4 using the Reserve Bank of India data. These trends reveal the contradictions and uneven development inherent in the growth process using the new technology.

One of the most striking observations from Table 4.2 is the highest rate of 3.69 percent at which foodgrains (cereals+pulses) output grew in the immediate post-independence period comprising the first three Five Year Plans preceding the advent of 'green revolution' technology. From 54 million tons in 1950-53 to 83.4 million tons in 1962-65, there was a 54.4 percent increase in foodgrains output between 1950 and 1965. The growth of foodgrains production at 2.68 percent annually during the quarter century of green revolution since the mid-1960s was less than the earlier

⁷ G.S. Bhalla and G.Singh. 2012. *Economic Liberalisation and Indian Agriculture: A District-level Study*. See Table 2.3 on pp.36-37.

recorded 3.9 percent, but foodgrains output more than doubled from 83.38 million tons in 1962-65 to 175 million tons in 1990-93, or a rise by 110 percent. Taking both the periods together, foodgrains output grew at an annual rate of nearly 3 percent during the four decades preceding the implementation of neoliberal policies.

However, the sources of agricultural growth during the two periods differed - while in the pre-green revolution period it was mainly dependent on area expansion, the quarter century of technological change saw as might be expected, primarily productivity gains-based growth,⁸ as Tables 4.3 and 4.4 show. The decade and a half after 1990-93 has witnessed a sharp deceleration in the growth of foodgrains output, which at 1.5 percent has fallen even below the population growth rate and is half of the 3 percent rate at which it grew during the pre-reform period spanning four decades after 1950-53.

Focusing our attention on the green revolution period, Table 4.2 shows the crop-specific and lopsided nature of growth. It was primarily restricted to wheat during the first phase of the new technology and subsequently to rice during the nineteen eighties, when this technology spread to the eastern region of the country. Additionally, oilseeds too have registered substantial expansion of area, yield and production since the mid-1980s when technologically improved varieties were made available.⁹ There seems to be no discernable impact on the growth of coarse cereals which was an important part of the staple diet of the majority of the population in low-rainfall areas.

Wheat output, which grew at 6 percent during 1962-65 to 1990-93, increased over five-fold from 11 million tons to 56 million tons while rice output more than doubled from 36.5 million tons to 74 million tons. Despite a quantum jump in the growth rate of pulses from a near zero percent to a positive 1.4 percent in the latter phase of the green revolution spanning the decade of the nineteen eighties, this was still far from impressive. The entire period from the mid-sixties upto the early 1990s saw a mere 15 percent increase in the output of pulses. There was a further drop in

⁸ G.S. Bhalla and G. Singh. 2012. *Economic Liberalisation and Indian Agriculture: A District-level Study*. See p.30.

⁹ Planning Commission. *Mid-term Appraisal of the Tenth Five Year Plan (2002-07)*, Ch. 5 on 'Agriculture and Food Security'. See pp.190-191. Also see G.S. Bhalla and G. Singh. 2009. 'Economic Liberalisation and Indian Agriculture: A Statewise Analysis'. *EPW*. Vol. XLIV, 52. pp. 34-44.

coarse cereals growth rate from 1 percent to 0.8 percent between the two phases even as wheat had already started registering a declining trend in the eighties. This declining trend has continued unabated throughout the neo-liberal economic reforms period, with not only coarse cereals and pulses suffering a decline but even the finer varieties of cereals (like rice and wheat) growing at less than half the rate at which they were growing in the 1980s. (Table 4.2)

If the growth of foodgrains production was mainly driven by wheat and rice, that of non-foodgrains such as oilseeds, sugarcane, fibre crops like cotton as also plantation crops like coffee and tea were marked by rapid increases in their output growth in the period of technological change from 1962-65 to 1990-93. Oilseeds output grew particularly sharply during the 1980s and increased by nearly 2.5 times from 7.7 million tons to 19.1 million tons between 1962-65 and 1990-93. Cotton output increased by nearly 80 percent, and the sugarcane output more than doubled from 106 million tons to 241 million tons between 1962-65 and 1990-93.

The composition of crop output in the 'green revolution' period increasingly shifted away from coarse cereals and pulses in favour of finer varieties of cereals like rice and wheat on the one hand and agro-exports such as oilseeds, cotton, tea, coffee etc. on the other. The area under coarse cereals has been falling consistently since the mid-1960s, with sharper decline from the 1980s onwards. The period between 1980-83 and 2005-08 saw a fall of 31 percent in area under coarse cereals as Table 4.3 shows.

So sharp has been the decline in area under coarse cereals in the quarter century since 1980-83 that despite an increase of nearly 9 million hectares under rice and wheat, net sown area under total foodgrains has declined for the first time since independence by almost 4 million hectares. While in the central and southern regions, coarse cereals was increasingly displaced by oilseeds during the 1980s, the north-western region including U.P. saw area diversion primarily to the finer cereals, wheat and rice.¹⁰ With the area growth under rice and wheat also slowing down from the 1980s, the reforms period with its emphasis on trade liberalization and production for global markets has seen a rise in area under raw cotton and new horticultural crops.

¹⁰ G.S. Bhalla and G. Singh. 2012. *Economic Liberalisation and Indian Agriculture: A District-level Study*.

Table 4.2: Trends in the Growth of Foodgrain and Non-Foodgrain Output in All-India

Year	Average Output of Foodgrains and Non-Foodgrain Commercial Crops (million tonnes)										
	Rice	Wheat	Coarse Cereals	Total Cereals	Pulses	Total Food grains	Total Oilseeds	Cotton	Raw Jute & Mesta	Sugar-cane	Tobacco
1950-53	21.59	6.71	17.03	45.33	8.67	54.01	4.97	3.22	4.45	56.56	0.24
1962-65	36.51	10.96	24.57	72.04	11.34	83.38	7.69	5.77	7.61	106.02	0.35
1970-73	41.51	24.99	26.10	92.60	10.94	103.54	8.62	5.82	6.37	121.60	0.38
1980-83	51.33	38.85	29.29	119.47	11.33	130.80	10.48	7.47	7.90	176.71	0.53
1990-93	73.94	56.01	31.76	161.72	13.03	174.75	19.11	10.32	9.37	241.03	0.58
2005-08	93.94	74.58	36.25	204.77	14.12	218.88	27.34	22.34	11.11	328.29	0.52
<i>Change in Average Output of Foodgrain and Non-Foodgrain Commercial Crops, Percent</i>											
1950-53 to 1962-65	69.1	63.3	44.3	58.9	30.7	54.4	54.7	79.1	71.0	87.4	47.2
1962-65 to 1980-83	40.6	254.4	19.2	65.8	-0.1	56.9	36.3	29.6	3.8	66.7	49.1
1980-83 to 1990-93	44.0	44.2	8.4	35.4	15.0	33.6	82.3	38.0	18.6	36.4	10.1
1990-93 to 2005-08	27.0	33.1	14.1	26.6	8.3	25.3	43.1	116.5	18.5	36.2	-10.3
1962-65 to 1990-93	102.5	410.9	29.2	124.5	14.9	109.6	148.4	78.9	23.1	127.3	64.2
1950-53 to 1990-93	242.4	734.4	86.5	256.7	50.3	223.6	284.2	220.4	110.6	326.1	141.7
<i>Compound Annual Growth Rates, All-India</i>											
1950-53 to 1962-65	4.50	4.17	3.10	3.94	2.26	3.69	3.70	4.98	4.57	5.38	3.28
1962-65 to 1980-83	1.91	7.28	0.98	2.85	0.00	2.53	1.73	1.45	0.21	2.88	2.24
1980-83 to 1990-93	3.72	3.73	0.81	3.07	1.41	2.94	6.19	3.28	1.72	3.15	0.97
1990-93 to 2005-08	1.61	1.93	0.88	1.59	0.53	1.51	2.42	5.28	1.14	2.08	-0.73
1962-65 to 1990-93	2.55	6.00	0.92	2.93	0.50	2.68	3.30	2.10	0.75	2.98	1.79
1950-53 to 1990-93	3.13	5.45	1.57	3.23	1.02	2.98	3.42	2.95	1.88	3.69	2.23

Source: RBI, 'Handbook of Statistics on Indian Economy', Various years.

Table 4.3: Trends in the Growth of Area Under Foodgrain and Non-Foodgrain Crops in All-India

Year	Average Area under Foodgrains and Non-Foodgrain Commercial Crops (million hectares)										
	Rice	Wheat	Coarse Cereals	Total Cereals	Pulses	Total Food grains	Total Oilseeds	Sugarcane	Cotton (Lint)	Raw Jute & Mesta	Tobacco
1950-53	30.20	9.68	39.67	79.55	19.24	98.79	11.20	1.79	6.27	0.76	0.34
1962-65	35.99	13.50	44.19	93.68	24.11	117.79	15.14	2.36	8.11	1.24	0.42
1970-73	37.35	18.95	43.91	100.20	21.87	122.07	16.57	2.49	7.70	1.06	0.45
1980-83	39.71	22.66	41.55	103.92	23.04	126.97	18.09	3.07	7.92	1.16	0.46
1990-93	42.37	24.01	34.72	101.10	23.19	124.29	25.09	3.70	7.55	1.02	0.42
2005-08	43.79	27.50	28.74	100.04	23.07	123.11	27.02	4.80	9.08	0.93	0.36
<i>Change in Average Area Under Foodgrain and Non-Foodgrain Crops, Percent</i>											
1950-53 to 1962-65	19.1	39.4	11.4	17.8	25.3	19.2	35.2	31.8	29.4	62.4	24.8
1962-65 to 1980-83	10.3	67.8	-6.0	10.9	-4.4	7.8	19.5	30.0	-2.3	-6.7	10.3
1980-83 to 1990-93	6.7	5.9	-16.4	-2.7	0.6	-2.1	38.7	20.4	-4.7	-11.8	-9.4
1990-93 to 2005-08	3.4	14.6	-17.2	-1.0	-0.5	-0.9	7.7	29.8	20.3	-8.5	-13.5
1962-65 to 1990-93	17.7	77.8	-21.4	7.9	-3.8	5.5	65.7	56.6	-6.9	-17.7	0.0
1950-53 to 1990-93	40.3	147.9	-12.5	27.1	20.5	25.8	124.0	106.3	20.4	33.6	24.8
<i>Compound Annual Growth Rates, All-India</i>											
1950-53 to 1962-65	1.47	2.81	0.90	1.37	1.90	1.48	2.54	2.33	2.17	4.13	1.86
1962-65 to 1980-83	0.55	2.92	-0.34	0.58	-0.25	0.42	0.99	1.47	-0.13	-0.39	0.55
1980-83 to 1990-93	0.65	0.58	-1.78	-0.28	0.06	-0.21	3.33	1.87	-0.48	-1.25	-0.98
1990-93 to 2005-08	0.22	0.91	-1.25	-0.07	-0.03	-0.06	0.49	1.76	1.24	-0.59	-0.96
1962-65 to 1990-93	0.59	2.08	-0.86	0.27	-0.14	0.19	1.82	1.61	-0.26	-0.70	0.00
1950-53 to 1990-93	0.85	2.3	-0.33	0.6	0.47	0.58	2.04	1.83	0.47	0.73	0.55

Source: RBI, 'Handbook of Statistics on Indian Economy', Various years.

Table 4.3 shows the sharp contrast in area trends before and after the reforms. The post-reform period has seen a rise in area under cash crops, while the area under foodgrains went from 0.6 percent growth in the four decades prior to 1990-93, to -0.21 percent in the nineteen eighties and a further decline by -0.1 percent in the decade and a half after 1990-93 even as area under major exportable cash crops such as oilseeds, cotton, tea and coffee continued their upward trend.

In a situation where high-valued commercial crops for export are increasingly displacing area under foodgrains, the sustainability of agricultural growth as also domestic food security concerns require a substantial increase in productivity levels of both cereals and pulses in order to compensate for a decline in area under cultivation. As we have noted already the “green revolution” period, especially the eighties decade, saw a doubling of foodgrain yield, not only did rice and wheat register striking improvements, coarse cereals and pulses too saw modest increase in productivity. The increase in productivity, a direct fallout of the new technology, was not confined to foodgrains but also marked almost all major commercial crops except perhaps sugarcane. Cotton and oilseeds saw a striking increase in yield levels. However, Table 4.4 shows that the post-reforms period has seen a reversal of the positive productivity trend in foodgrains and non-foodgrains alike (with the exception of coarse cereals whose yield growth was maintained at more than 2 percent per annum through the 1990s mainly because of good performance of maize,¹¹ increasing volumes being exported to Europe and Japan to feed livestock). With productivity growth collapsing and a visible shift in cropping pattern away from foodgrains cultivation and in favour of exportable cash crops, it is indeed alarming to see a sharp decline in foodgrains growth rate below the population growth rate even though the latter has been declining slowly as well.

In short, the growth under “green revolution” was not only crop-specific but also region-specific. Though with the spread of the new technology from traditional “green revolution” areas to other parts of the country, regional disparities in agriculture were expected to diminish, this has clearly failed to happen to an adequate

¹¹ Planning Commission. *Mid-term Appraisal of the Tenth Five Year Plan (2002-07)*. Ch. 5, ‘Agriculture and Food Security’. p.190. Also, see U. Patnaik. 2007. ‘The Republic of Hunger’ in *The Republic of Hunger and Other Essays*. pp.126-128.

Table 4.4: Trends in the Growth of Yield of Foodgrain and Non-Foodgrain Crops in All-India

Year	Average Yield of Foodgrains and Non-Foodgrain Commercial Crops (quintal/hectare)										
	Rice	Wheat	Coarse Cereals	Total Cereals	Pulses	Total Foodgrains	Total nine Oilseeds	Sugar cane	Cotton (Lint)	Raw Jute & Mesta	Tobacco
1950-53	7.15	6.93	4.28	5.69	4.51	5.46	4.45	315.68	0.87	10.48	7.10
1962-65	10.14	8.12	5.37	7.69	4.70	7.08	5.08	447.29	1.21	11.02	8.45
1970-73	11.11	13.19	5.92	9.24	5.00	8.48	5.19	489.22	1.28	10.81	8.54
1980-83	12.92	17.12	7.04	11.50	4.92	10.30	5.78	575.48	1.60	12.35	11.31
1990-93	17.45	23.34	9.14	16.00	5.61	14.06	7.62	651.02	2.33	16.51	13.82
2005-08	21.45	27.10	12.62	20.46	6.12	17.77	10.12	682.76	4.17	21.48	14.36
<i>Change in Average Yield of Foodgrain and Non-Foodgrain Crops, Percent</i>											
1950-53 to 1962-65	41.8	17.2	25.4	35.1	4.4	29.7	14.2	41.7	38.5	5.2	19.1
1962-65 to 1980-83	27.4	110.9	31.2	49.5	4.5	45.5	13.8	28.7	32.5	12.1	33.9
1980-83 to 1990-93	35.1	36.3	29.7	39.1	14.2	36.5	31.9	13.1	45.1	33.7	22.2
1990-93 to 2005-08	22.9	16.1	38.1	27.9	9.0	26.4	32.7	4.9	79.1	30.1	3.9
1962-65 to 1990-93	72.1	187.4	70.2	108.0	19.3	98.6	50.1	45.5	92.3	49.8	63.6
1950-53 to 1990-93	143.9	236.8	113.5	181.1	24.6	157.6	71.3	106.2	166.4	57.5	94.8
<i>Compound Annual Growth Rates, All-India</i>											
1950-53 to 1962-65	2.95	1.33	1.90	2.54	0.36	2.19	1.11	2.95	2.75	0.42	1.47
1962-65 to 1980-83	1.35	4.23	1.52	2.26	0.25	2.10	0.72	1.41	1.58	0.63	1.63
1980-83 to 1990-93	3.05	3.15	2.64	3.36	1.33	3.16	2.81	1.24	3.79	2.94	2.02
1990-93 to 2005-08	1.39	1.00	2.17	1.66	0.57	1.57	1.90	0.32	3.96	1.77	0.25
1962-65 to 1990-93	1.96	3.84	1.92	2.65	0.63	2.48	1.46	1.35	2.36	1.45	1.77
1950-53 to 1990-93	2.25	3.08	1.91	2.62	0.55	2.39	1.35	1.83	2.48	1.14	1.68

Source: RBI, 'Handbook of Statistics on Indian Economy', Various years.

extent. Barring the North-Western states, West-Bengal, Karnataka and Gujarat, all other states have continued to register falling foodgrains production per capita by the late 1990s (See Chapter 3, Table 3.4). Moreover, from the mid-1990s there was a global fall in agricultural commodity prices while agricultural sector import barriers were dismantled, which worsened the situation further. The dry and arid regions growing unirrigated coarse cereals, cotton and oilseeds, though benefiting initially from increasing world prices, have been worst affected by the subsequent deceleration in world prices of primary products since 1997-98.¹²

Our focus in the next section will be on Uttar Pradesh which contributed one-fifth of the country's total foodgrains output by the triennium ending 1999-00¹³, and was also the most populous state where as high as 65.6 percent of the workforce was still employed in agriculture in 2001.¹⁴

4.3. Long-term Trends in Growth of Agricultural Production, Area and Productivity of Major Crops in Uttar Pradesh

Uttar Pradesh has done remarkably well in terms of agricultural growth performance during the quarter century of technological change. From a state with one of the lowest foodgrains and all crop output growth during the early 1950s and mid-1960s,¹⁵ it made the transition to impressively high foodgrains output growth during the 1980s, as Table 4.5 shows. By the close of the century, U. P. was not only the largest wheat producing state contributing about one-third of India's total wheat output, it was also the largest producer of sugarcane, pulses and potato in the country.¹⁶

The high rate of 3.3 percent annually at which foodgrains output grew in U.P. between 1970-73 and 1990-93 was mainly attributable to a substantial rise in the rice

¹² Ibid. p.194. Also see U. Patnaik. 2002. 'Agrarian Crisis and Global Deflationism'. *Social Scientist*. Vol.30,1-2. Jan.-Feb. pp. 3-30, Table 1 on p.7 for the sharp decline in global prices of some important traded primary products.

¹³ Planning Commission. *Uttar Pradesh Development Report*. Vol. 2. Ch. 1.'Agriculture' p.28.

¹⁴ M. Joseph. 2004. 'Performance of the Northern States: A Comparative Analysis'. *EPW*. Vol.39,.6, Feb.7-13. See Table 11 on p.569.

¹⁵ K. N. Raj 1970. 'Some Questions Concerning Growth, Transformation and Planning of Agriculture in the Developing Countries' in Robinson and Kidron (ed.) *Economic Development in South Asia 1970*. See Table 7.3 on p.114. The rate of growth of foodgrain output between 1952-3 and 1964-5 in Uttar Pradesh has been shown to be 0.85 percent, much lower than the national average of 2.5 percent and much below the 1.84 percent rate of population growth in U.P.

¹⁶ Planning Commission. *Uttar Pradesh Development Report*. Volume 2 Ch. 1 'Agriculture' pp.28-30.

and wheat output growth rates. Foodgrains output nearly doubled from 18 million tons to 35 million tons during the two decades before 1991, with rice output rising nearly three-fold from 3.5 million tons to 9.6 million tons while wheat output rose from 7.6 million tons to 19.3 million tons. Tables 4.6 and 4.7 show that this rise in output growth of these main cereals is explained by a combination of sharp increase in yield and significant growth of area. Coarse cereals and pulses however have registered negative growth rates over the same period with a decline in output by 15 percent and 13 percent respectively.

Irrigation facilities developed rapidly during the seventies and eighties, while the availability and spread of HYVs of wheat and rice since the mid-1960s meant that these finer varieties of cereal were increasingly displacing area under coarse cereals like sorghum, maize, pearl millet etc. Such shifts in cropping pattern were greatly facilitated by other factors such as access to heavily subsidized water, power, fertilizers, HYV seeds and other inputs which raised the profitability of wheat and rice in the North-Western region of the country.¹⁷ Price stabilization mechanism put in place by the government also created a conducive macroeconomic environment which encouraged the economically well-off farmers to switch over to yield- raising HYV technological package.

Area under coarse cereals declined very sharply at 2.8 percent per annum between 1970-73 and 1990-93, and its output suffered a severe setback especially during the 1970s when yield remained by and large unchanged. However, there was a rapid increase in the yield of maize due to the adoption of its HVY seed varieties during the 1980s, especially in the western and central regions. Hence despite area under coarse cereals declining throughout the 1980s, there was a quantum jump in its production growth rate from -2.67 percent during the 1970s to +1.14 percent during the 1980s (Tables 4.5, 4.6 and 4.7). The period of the 1990s has seen however a sharp deceleration in yield and hence, output growth rates of coarse cereals, even as acreage under it has continued its declining trend.

The deceleration in growth rates of production is not confined to coarse cereals. Table 4.5 shows that the period since the 1990s is marked by a slowdown of overall crop production in U.P. While foodgrains output growth rate declined from 3.29 percent during the two decades of technological change prior to 1991 to a mere

¹⁷ G.S. Bhalla and G. Singh. 2012 and 2009, *ibid*.

1.45 percent (falling below the population growth rate) in the decade and a half after 1990-93, output growth rates of oilseeds, sugarcane and potato too have seen a declining trend.

Further, the deceleration has been particularly severe since the mid-nineties when Indian agriculture was opened up to international trade in primary commodities. In the case of sugarcane, the most important cash crop of the state, despite a continuous expansion of area under the crop at 1.44 percent in the post-WTO period, its output growth rate was 1.73 percent or half the rate at which it grew during the nineteen eighties, owing to a very sharp decline in yield, particularly after 1990-93 (Tables 4.5, 4.6 and 4.7). This yield decline after 1994 was so sharp that the average U.P. level fell 17 percent below the national average of 73 ton per hectare. In more than 70 percent of sugarcane area in the state, the yield levels were lower still.¹⁸

The broad trends in agricultural production, area and productivity of major crops in Uttar Pradesh examined above are a reflection of the trends prevailing at the All-India level. As in All-India, our trends in U.P. too clearly reveal the crop-specific nature of agricultural growth that took place under the modern technology. Unevenness of growth was equally evident when we look at the development pattern across regions within the state. It was Western U.P. which came to be known as the “food and sugar basket of India” which surged far ahead of every other region in terms of adoption of new technology and hence in terms of its overall contribution to the state’s output of its most important crops, viz., wheat and sugarcane.

¹⁸ Planning Commission. *Uttar Pradesh Development Report. Vol. 2. Ch. 1. p.31.*

Table 4.5: Trends in the Growth of Foodgrain and Major Non-Foodgrain Crop Output in Uttar Pradesh

Year	Average Output of Foodgrains and Non-Foodgrain Commercial Crops (million tonnes)								
	Rice	Wheat	Coarse Cereals	Total Cereals	Pulses	Total Foodgrains	Total Oilseeds	Sugarcane	Potato
1970-73	3.55	7.59	4.32	15.45	2.97	18.42	1.58	53.58	1.59
1980-83	5.70	13.80	3.29	22.80	2.45	25.25	1.39	74.01	4.28
1990-93	9.61	19.29	3.69	32.60	2.60	35.19	1.14	103.63	6.02
2005-08	12.08	26.23	3.45	41.75	1.92	43.67	0.82	134.13	10.72
<i>Change in Average Output of Foodgrains and Non-Foodgrain Crops, Percent</i>									
1970-73 to 1980-83	60.63	81.90	-23.69	47.51	-17.52	37.03	-12.04	38.12	168.92
1980-83 to 1990-93	68.52	39.84	12.00	42.99	5.97	39.40	-17.95	40.02	40.74
1990-93 to 2005-08	25.64	35.94	-6.54	28.09	-26.07	24.10	-27.61	29.43	78.15
1970-73 to 1990-93	170.68	154.38	-14.53	110.94	-12.59	91.02	-27.83	93.39	278.49
<i>Compound Annual Growth Rates, Uttar Pradesh</i>									
1970-73 to 1980-83	4.85	6.17	-2.67	3.96	-1.91	3.20	-1.27	3.28	10.40
1980-83 to 1990-93	5.36	3.41	1.14	3.64	0.58	3.38	-1.96	3.42	3.48
1990-93 to 2005-08	1.53	2.07	-0.45	1.66	-1.99	1.45	-2.13	1.73	3.92
1970-73 to 1990-93	5.10	4.78	-0.78	3.80	-0.67	3.29	-1.62	3.35	6.88

Source: Directorate of Agriculture, Various Issues of 'Statistical Diary', U.P. and Uttarakhand.

Note (i) Output of crops in U.P. above includes data of Uttarakhand since 2000-01.

(ii) 2000-01 data for Uttarakhand is an interpolated estimate owing to non-availability of the same.

Table 4.6: Trends in Growth of Area Under Foodgrain and Major Non-Foodgrain Crops in Uttar Pradesh

Year	Average Area Under Foodgrains and Non-Foodgrain Commercial Crops (million hectares)								
	Rice	Wheat	Coarse Cereals	Total Cereals	Pulses	Total Foodgrains	Total Oilseeds	Sugarcane	Potato
1970-73	4.50	6.03	5.25	15.79	3.59	19.37	3.79	1.31	0.17
1980-83	5.25	8.06	3.97	17.28	2.96	20.24	0.97	1.60	0.28
1990-93	5.41	8.57	2.98	16.96	2.93	19.89	1.10	1.84	0.35
2005-08	6.12	9.76	2.46	18.33	2.52	20.85	1.01	2.29	0.48
<i>Change in Area Under Foodgrain and Non-Foodgrain Crops, Percent</i>									
1970-73 to 1980-83	16.50	33.68	-24.47	9.43	-17.40	4.46	-74.43	22.18	60.82
1980-83 to 1990-93	3.11	6.32	-24.90	-1.83	-0.98	-1.70	13.04	15.34	28.97
1990-93 to 2005-08	13.04	13.87	-17.55	8.09	-14.23	4.80	-8.25	24.01	35.90
1970-73 to 1990-93	20.13	42.13	-43.28	7.43	-18.21	2.69	-71.10	40.92	107.41
<i>Compound Annual Growth Rates, Uttar Pradesh</i>									
1970-73 to 1980-83	1.54	2.95	-2.77	0.91	-1.89	0.44	-12.75	2.02	4.87
1980-83 to 1990-93	0.31	0.61	-2.82	-0.18	-0.10	-0.17	1.23	1.44	2.58
1990-93 to 2005-08	0.82	0.87	-1.28	0.52	-1.02	0.31	-0.57	1.44	2.07
1970-73 to 1990-93	0.92	1.77	-2.80	0.36	-1.00	0.13	-6.02	1.73	3.71

Source: As Table 4.5

Table 4.7: Trends in the Growth of Yield of Foodgrain and Major Non-Foodgrain Crops in Uttar Pradesh

Year	Average Yield of Foodgrains and Commercial Crops (quintal/hectare)								
	Rice	Wheat	Coarse Cereals	Total Cereals	Pulses	Total Foodgrains	Total Oilseeds	Sugarcane	Potato
1970-73	7.88	12.59	8.19	9.79	8.28	9.51	4.16	409.19	92.93
1980-83	10.87	17.10	8.30	13.20	8.29	12.48	15.46	463.41	155.54
1990-93	17.75	22.53	12.33	19.23	8.85	17.70	10.48	561.85	170.70
2005-08	19.74	26.88	14.04	22.78	7.60	20.95	8.21	586.44	222.42
<i>Change in Average Yield of Foodgrain and Non-Foodgrain Crops, Percent</i>									
1970-73 to 1980-83	37.99	35.86	1.42	34.85	0.02	31.23	271.29	13.25	67.38
1980-83 to 1990-93	63.24	31.79	48.52	45.64	6.79	41.81	-32.21	21.24	9.75
1990-93 to 2005-08	11.24	19.26	13.82	18.46	-14.07	18.40	-21.65	4.38	30.30
1970-73 to 1990-93	125.25	79.05	50.63	96.39	6.81	86.10	151.69	37.31	83.70
<i>Compound Annual Growth Rates, Uttar Pradesh</i>									
1970-73 to 1980-83	3.27	3.11	0.14	3.04	0.00	2.75	14.02	1.25	5.29
1980-83 to 1990-93	5.02	2.80	4.03	3.83	0.66	3.55	-3.81	1.94	0.93
1990-93 to 2005-08	0.71	1.18	0.87	1.14	-1.01	1.13	-1.61	0.29	1.78
1970-73 to 1990-93	4.14	2.96	2.07	3.43	0.33	3.15	4.72	1.60	3.09

Source: As Table 4.5

Regional Bias of Adoption of the New Technology in U.P.:

Agricultural growth in Uttar Pradesh during the green revolution period has been region-specific. Despite the later rapid development of irrigation facilities in central and eastern regions as well facilitating the adoption of yield raising HYV technology package during the 1980s, wide variations in the pattern of agricultural development across regions in U.P. continue to persist even today.¹⁹

An explanation for the continued regional divergence in the level of agricultural development in Uttar Pradesh must be sought as much in the historical development of irrigation as in varying socio-economic and agro-climatic conditions across the state. There were differences in the inherited agrarian structure and demographic trends linked to the variations in rainfall, soil types, soil fertility and irrigation history across regions within U.P.²⁰

It was in the Western region that public investment during the nineteenth and early twentieth centuries in canal and tubewell irrigation was primarily concentrated, and this region is today the most agriculturally developed one within U.P.²¹ Western U.P. always had the highest irrigated area as percentage of both NSA and GSA²², ensuring higher relative profitability. Even the landholding structure that the region inherited from colonial times was relatively more conducive to the formation of a class of dynamic farmers who were willing and able to invest in productivity raising capital intensive techniques of production. Not surprisingly then, Western region continues to be far ahead in the adoption of new technology compared to other regions within U.P.

Capitalist development always proceeds in an uneven manner.²³ This perhaps explains why Western Uttar Pradesh is today known as the “food and sugar basket” of

¹⁹ Ibid. See Appendix to the chapter.

²⁰ K. Bhardwaj 1982. 'Regional Differentiation in India: A Note' *EPW*. Vol. 17, 14/16. Annual Number. April. See also C. Clift, 1977. 'Progress of Irrigation in Uttar Pradesh: East-West Differences'. *EPW*. Vol. 12, 39. Sep.24 pp. A83-A-90.

²¹ (i) E. Whitcombe. 1971. *Agrarian Conditions in Northern India*. (ii) Planning Commission. Uttar Pradesh Development Report. Volume 2. Ch. 1. 'Agriculture'.

²² For wide variations in the extent of irrigated area across regions in U.P., see the Table as an appendix to the chapter.

²³ U. Patnaik and Z. Hasan. 1995. 'Aspects of the Farmers' Movement in Uttar Pradesh in the context of Uneven Capitalist Development in Agriculture' in P. Satyamurthy (ed.) *Industry and Agriculture in India since Independence*.

India. Indeed, the region alone contributed as much as 45 percent of all foodgrains output and 60 percent of sugar production in the state in the TE 1999-00.²⁴

The crop and region-specific imbalances induced by the new technology within U.P. were a fallout of the introduction of technological changes within an unreformed agrarian structure. In a society where the ownership of means of production (land and non-land productive assets) is heavily skewed, only the small minority who have investible resources to adopt relatively more capital intensive techniques of production stood to gain most from the new agricultural strategy. The uneven nature of agricultural growth that took place not only in U.P. but in the country following the introduction of technological reforms was unavoidable given that green revolution was introduced by the Indian state to promote food self sufficiency through encouraging capitalist production. The emphasis on the capitalist path of agrarian development necessarily meant that exclusive reliance was placed on the small minority who had investible surpluses to achieve desired growth rates of agricultural output.

In the next chapter, we examine the concentration of owned and operated area, tenancy and landlessness in U.P. relative to All-India.

²⁴ Uttar Pradesh Development Report. Vol. 2. Planning Commission. Chapter 1. 'Agriculture'. See p.32.

Appendix to Chapter 4: Regional Disparities within Uttar Pradesh

Table A: Trends in Irrigated Area as Percentage of Gross Sown Area (GSA) in Different Regions of U.P.

	Irrigated Area as Percent of Gross Sown Area					
	Western U.P.	Central U.P.	Eastern U.P.	Bundelkhand	U.P.	All-India
1980	62	41	40	23	46	29
1990	77	57	48	29	58	34
2000	85	71	61	41	67	40

Source: Planning Commission 'Uttar Pradesh State Development Report', Ch.1. Agriculture pp.39-40.

Table B: Trends in Irrigated Area as Percentage of Net Sown Area (NSA) in Different Regions of U.P.

	Irrigated Area as Percent of Net Sown Area					
	Western U.P.	Central U.P.	Eastern U.P.	Bundelkhand	U.P.	All-India
1970	n.a.	n.a.	n.a.	n.a.	40.4	22.7
1980	72	49	53	24	55	28
1990	78	56	60	29	61	34
2000	88	75	69	44	73	39

Source: Planning Commission 'Uttar Pradesh State Development Report', Ch.1 Agriculture. pp.39-40. Figures for 1970 are from Charles Clift. 1977 'Progress of Irrigation in Uttar Pradesh: East-West Differences'. EPW. Vol.12. No.39. Sep.24.

Table C: Regional Differences in Cropping Intensity, composition of output and share of tubewell in total irrigated area, TE 2000-01

Region	Cropping Intensity	Percentage Share in Value of Output		Share of Tubewell in Total Irrigated Area (%)
		Foodgrains	Commercial Crops	
Western U.P.	157	57	43	79
Central U.P.	148	75	25	71
Eastern U.P.	152	85	15	70
Bundelkhand	118	92	8.5	10
U.P.	149	..	..	70

Source: Same as Tables A and B. See pp.39-40.

Note: 'Fruits and Vegetables' have been included in Commercial crops.

Chapter 5

Trends in the Concentration of Landholding in India with Special Reference to Uttar Pradesh

The present chapter examining trends in the landholding pattern in India and U.P., seeks to analyse the impact of land reforms, modern technology and neoliberal economic reforms on the extent of concentration of land ownership and operation in rural U.P. in relation to India. In so doing, it uses data on the two basic distributions of landholdings from NSSO, namely, ownership and operation. It emphasises on the inadequacy of the officially defined groups for comparing data on the concentration of landholdings over time. The rationale for the three-fold division that we have adopted for our purpose has been provided, following the methodology first used by V.I. Lenin in 1899 and subsequently applied by U. Patnaik in 1976. Based on the particular three-fold division of the population that we have adopted, it seeks to analyse the changing structure of landownership in U.P. and India over the course of six decades starting from the early nineteen fifties. This is followed by an examination of trends in area operated and leased-in.

5.1. New Technology and Increasing Polarization of Peasant Classes

Is the modern technology “scale neutral”?

It has been argued by a number of authors that the new technology, owing to its alleged “scale neutrality” has benefitted all sections of the cultivating peasantry, regardless of the size of landholding on which it is applied. By increasing crop yields and hence output it has had a favourable impact on incomes of the rural poor. Not only has the small and marginal peasantry benefitted from the adoption of this HYV package, the multiplier effects emanating from increased yields and hence output from this technical change will have the effect of increasing employment opportunities and hence, incomes of the landless agricultural labourers too in the long run.¹ This increase in real earnings of agricultural labourers in the long run, after an

¹ (i) R. Sharma and T. T. Poleman. 1993. *The New Economics of India's Green Revolution: Income and Employment Diffusion in Uttar-Pradesh*. (ii) C. H. H. Rao. 1975. *Technological Change and Distribution of Gains in Indian Agriculture*. (iii) M. Ravallion and G. Datt. 1995. *Growth and Poverty in Rural India*.

initial decline in the absolute share of wages in total product following the adoption of improved technology, is in turn brought about by a combination of expanding employment and output levels caused by declining unit costs of production on the one hand, while an increase in wage rates that takes place due to increased demand for labour resulting from both output expansion as well as intensive cropping on the other.² Sharma and Poleman (1993) argue that “the Green Revolution not only holds the potential for increasing food production at rates ahead of population growth; it also bids fair to help resolve India’s far more perplexing employment problem.”³

In sharp contrast to the above argument, critics of the “second generation” or income diffusion effects of ‘green revolution’ argue that though the technology per se may be “scale neutral”, access to the whole package of improved farming practices, particularly in an unreformed agrarian structure like India’s is by no means neutral to scale.⁴ Specifically, they argue that “scale neutrality” of the new technology breaks down when it comes to access to crucial inputs by a subsistence farmer such as irrigation, expensive “indivisible” farm machinery like tractor, thresher etc., even divisible inputs like HYV seeds, chemical fertilizers and pesticides, all of which are indispensable for modern technology to obtain higher yields. Poorer farmers find it more difficult to access cheap credit for production as their asset base is small. In a countryside where as much as 60 percent of the total cultivated area does not have assured water supply, the spread of new technology is bound to have an inherent regional and class bias in favour of the rich cultivators who have the resources required for its adoption in irrigated areas.

The faster rate of output growth during the green revolution period led to an increase in labour demand per hectare up to a point until the mid-seventies or so. Thereafter with further mechanisation, especially the use of combine harvesters, there

World Bank Policy Research Working Paper No. 1405. Jan. (iv) T. R. DeGregori. 2004 ‘Green Revolution Myth and Agricultural Reality?’. *Journal of Economic Issues*. Vol. 38, 2. June. pp. 503-508.

² C.H.H. Rao. 1975. *Technological Change and Distribution of Gains in Indian Agriculture*. Chapter 9. pp. 105-122.

³ R. Sharma and T. T. Poleman. 1993. *The New Economics of India’s Green Revolution: Income and Employment Diffusion in Uttar-Pradesh*.

⁴ (i) M.V. Nadkarni. 1988. ‘Crisis of Increasing Costs in Agriculture: Is There a Way Out?’. EPW. Vol. 23,39. Sep. 24, pp. A-114-A119. (ii) W. Ladejinsky. 1973. ‘How Green is the Indian Green Revolution?’ EPW. Vol. 8,52, Dec. 29. (iii) K. N. Raj. ‘Some Questions Concerning Growth, Transformation and Planning of Agriculture in the Developing Countries’ in Robinson and Kidron (ed.). 1970. *Economic Development in South Asia*. (iv) R. Sau. 1971. ‘Resource Allocation in Indian Agriculture’. EPW. Vol. 6, 39, Sep. 25.

was a decline in labour demand in the earliest green revolution states like Punjab, even as Eastern and other parts of India continued to see an increase in labour demand. It is important to note that the adverse employment effects of net labour displacing mechanisation were to an extent, mitigated by demand expansionary wage and employment based programmes like the NREP, food for work, IRDP etc. undertaken by the state during this period.

The sharp cutbacks in public spending on rural development during the neoliberal reforms era has however led to a steep decline in the growth rate of the number of workers finding employment in agriculture (See Chapter 6, Tables 6.5 & 6.6). A combination of declining public expenditure in Indian agriculture and greater use of mechanised techniques of cultivation has reduced the demand for labour per unit of output. This is reflected in the particularly steep decline in elasticity of labour absorption with respect to output in the economic reforms period. The employment elasticity of output in agriculture has fallen from 0.5 in 1987-88 to 1993-94 to nearly zero (0.02) during 1993-94 to 1999-2000, and to (-0.08) during 1999-00 to 2011-12. Taking the period 2004-05 to 2009-10 for the first time ever, employment elasticity actually turned negative at -0.4.⁵

Not only has there been an absolute decline in the number of those drawing their living from the soil in the reforms period, asset and income inequality in rural India has been increasing over the years. A careful study of the distribution of landholding over time shows that access to the most crucial farm asset, viz., land is increasingly being concentrated in the hands of the top 15 percent of cultivators. It shows that the period since the introduction of technological reforms has significantly increased the concentration of land owned and operated, thereby widening asset and income inequality among different sections within the cultivating peasantry. This has been discussed below.

⁵ S. Misra and A. K. Suresh. 2014. 'Estimating Employment Elasticity of Growth for the Indian Economy.' RBI Working Paper Series. WPS (DEPR): 06/2014. See Table 5 on p.10. Also T.S. Papola. *Employment Trends in India*. See Table 3, p.5.

5.2. Increased Concentration of Landholding, Increasing Landlessness and Reverse Tenancy

The rise of the landlords- turned capitalist and the rich peasant class following the land reforms carried out as discussed earlier, has been greatly hastened by the advent of the green revolution technology. This is reflected in a long term trend towards increasing concentration of means of production in the hands of a small minority of emerging capitalist farmers, even as the large majority remains land-poor and at the margins is increasingly getting dispossessed of whatever meagre resources they own.

Even a cursory glance at the two basic distributions of landholdings from NSSO, namely, ownership and operation, reveals the highly concentrated structure that continues to exist in U.P. as well as in India. The successive survey rounds of the NSS starting from the 8th round in 1953-54 to the latest, the 70th in 2013 show that the definition of ownership been extended from round 8th to 16th to include owner-like possession, and the average size of land owned and operated per household has been changing over time. The size-class limits too have changed over the successive rounds and the number of size-classes is large. All this makes it difficult to compare data on landholdings looking at the actual distributions and some type of summarizing becomes necessary for comparison over time.

The NSS reports give for successive periods of the rounds, the percentage of holdings, persons and area by size-classes of farms ranked by area, and these size-classes are uniform for all states. The size-classes are termed 'marginal, small, semi-medium, medium, large'. However, the economic meaning of a given farm size can be very different depending on irrigation, fertility and location. U. Patnaik had argued in 'The Economics of Farm Size and Farm Scale' that unstandardised farm size is not the same as the scale of operation or class position. A five acre farm can be of small scale, belonging to a poor peasant in a dry region but a five acre farm can be much larger in scale and belong to a rich peasant in a high rainfall, or irrigated area.⁶ The officially defined groups are not useful for our purpose since they mix up households of very different economic positions.

⁶ U. Patnaik. 1972. 'Economics of Farm Size and Farm Scale – some Assumptions Re-examined'. *EPW*. Vol.7, .31-33 Special Number July-Aug.

The NSS Reports also give us the Lorenz curves of distribution and the Gini coefficients for the different dates of the surveys. While the Gini coefficient is a useful summary statistic, a great deal of information about the distribution is lost, and different types of inequality are compatible with the same value of the coefficient. Lorenz curves which cross, can give the same value of the Gini coefficient; thus this coefficient alone cannot give us a precise idea of the change in command over land of different groups of cultivators.

We have constructed Lorenz curves afresh by plotting the cumulative percentage of holdings ranked by farm size against the cumulative percentage of area owned or operated by them, from the NSS data. To facilitate comparison over time, we have distinguished three broad fractile groups from the initial Lorenz curve and applied the same division to later curves.⁷ The shares in total area owned or operated by *the top 15, middle 20 and bottom 65 percent* of the landowning or land operating households, have been read from the curves so derived.

The particular division of the population we have adopted here, namely the top 15 percent, middle 20 percent and bottom 65 percent has been derived by first identifying the middle group from the initial- year Lorenz curve. This is defined as that group which would have little or no change in its ownership position over time if there was a completely egalitarian distribution. (Thus, we take the chord on the initial year Lorenz curve which is roughly parallel to the line of equal distribution, i.e., the 45 degree line and read off the value of the end-points of the chord from the horizontal axis giving the percentage of households). Once this group is defined, the group above it (top 15 percent) as well as below it (bottom 65 percent) are automatically defined. After summarizing the data into these three groups, we can now analyse the long-term changes that have taken place in the pattern of landholdings both in U.P. and in India as a whole.

The above mentioned three groups approximate broadly to Daniel Thorner's three-fold classification of Indian rural population drawing a living from land into '*mazdoor*', '*kisan*' and '*malik*'.⁸ '*Maliks*' have been defined by Thorner as those

⁷ A three-fold division (20-30-50) was first used (for peasant households only excluding landlords) by V.I. Lenin in *The Development of Capitalism in Russia*. See V.I. Lenin. 1899. *The Development of Capitalism in Russia*. Vol.3 of *Collected Works* (Fourth Printing, 1977), Progress Publishers Moscow p.128. Using this idea, a three-fold division (15-25-60) was applied by U. Patnaik. 1976. 'Class Differentiation Within the Peasantry: An Approach to Analysis of Indian Agriculture' *EPW. Review of Agriculture*. Sep.

⁸ Ibid. Also see Daniel Thorner 1956. *The Agrarian Prospect in India*.

landed proprietors who derive their income by employing tenants or labourers, the 'kisans' as those cultivators who live primarily by their own toil on their own lands, and the 'mazdoor' as those villagers who gain their livelihood primarily from working on other people's land.

Table 5.1: Trends In The Concentration Of Area Owned In U.P. In Relation To All-India, 1953-54 to 2013 (Percent)

Year	NSS Rnd	Bottom 65		Middle 20		Top 15		Top 5	
		U.P.	All-India	U.P.	All-India	U.P.	All-India	U.P.	All-India
2013	70 th	16.0	10.25	22.0	23.25	62.0	66.5	34.75	40.0
2003	59 th	16.0	9.5	25.75	21.5	58.25	69.0	33.0	42.0
1991-92	48 th	17.5	10.25	25.5	24.5	57.0	65.25	29.75	38.0
1981-82	37 th	16.5	11.0	26.5	24.0	57.0	65.0	29.75	37.25
1971-72	26 th	17.0	11.5	26.0	23.5	57.0	65.0	29.75	37.25
1953-54	8 th	17.25	8.75	25.75	22.5	57.0	68.75	31.5	41.0

Source: Calculated from data in NSS Report Nos.491, 399 and 66 for All-India and Report Nos. 66, 215, 330, 399 and 491 for U.P. Note: Results of 59th and 70th Rounds for the year 2003 and 2013 for U.P. includes data on Uttarakhand to make it comparable with previous rounds. For the 70th round, see NSS Report No. 571. Table 4. Pp. A-168, A-171 and A-213 for Uttarakhand, U.P. and All-India respectively.

Table 5.2: Percentage Of Landless And Semi-Landless Households, 1953-54 to 2013

NSS Round	Year	Percentage of Landless Households		Percentage of Landless and Semi-Landless Households	
		U.P.	All-India	U.P.	All-India
70 th	2013	4.4*	7.41	n.a.	n.a.
59 th	2003	4.2^	10.0	n.a.	50.6
48 th	1991-92	4.9	11.3	34.6	42.4
37 th	1981-82	4.9	11.3	30.9	39.9
26 th	1971-72	4.6	9.6	32.7	37.4
17 th	1961-62	2.78	11.68	28.5	37.9
8 th	1953-54	9.36	23.09	n.a.	41.1

Source: NSS Report No. 491. p.12,21, A-13. Report No.399. p.23. Report No.144.pp.8,126. Report No. 66. p.4.

Note: i) Landless households are defined as those owning either no land or land less than 0.002 ha. (or 0.005 acres) while semi-landless are defined as those who own land between (0.002-0.2) ha. or (0.005-0.5) acres of land.

(ii) *: includes Uttaranchal. The percentage of landless in U.P. alone in 2013 is 3.3 percent.

(iii) ^: includes Uttaranchal. Also, note that the percentage of landless in U.P. alone in 2003 works out to 3.8 percent. (iv) n.a.: not available. (Change in size-classes of ownership and operational holdings

in the 59th round of the NSS makes it difficult to compute semi-landless households for U.P. since no (0-0.2) size-group given for the year 2003.)

Table 5.1 reveals two distinct and opposite trends in landownership by households for All-India namely improvement in the distribution during 1953 to 1971 and deterioration between 1971 and 2013. The improvement between 1953 and 1971 was primarily owing to the various land reform measures discussed earlier - abolition of intermediaries, simplification of tenures, conferring occupancy tenancy rights, and optional right of purchase of ownership right. The share of bottom 65 percent of households rose from 8.75 percent in 1953 to 11.5 percent in 1971 while the share of the top 15 percent of households declined from 68.75 percent to 65 percent. The share of the middle segment also registered an increase from 22.5 percent in 1953 to 23.5 percent in 1971 which further rose to 24 percent in 1991 before starting a downward trend thereafter.

This decline in the concentration of land ownership up to 1971, even though to a limited extent, was an outcome of land reforms that were carried out mainly in Telangana during the late 1940s and early fifties as well as in Kerala and West-Bengal during the 1970s and the eighties as also in other parts of the country. However, owing both to the limited impact of such institutional changes as have been brought about in these states as well as a near-total failure of land reforms in other parts of the country, not only does the structure of land ownership for All-India remain highly concentrated in favour of the top 15 percent, the percentage of landless and semi-landless households in rural India has also been continuously increasing since the 1970s, as Table 5.2 shows.

In U.P., the extent of concentration of owned area was always somewhat less in relation to All-India but in the first period up to 1971, the improvement was absent and the decline thereafter faster than in India. The 'top-down' nature of land reforms carried out in U.P. is evident from the marginal deterioration in the share of the bottom 65 percent of households from 17.25 percent in 1953 to 17 percent in 1971 which declined further to 16.5 percent in 1981, even as the share of the top 15 percent remained unchanged at 57 percent. (Table 5.1). There was a very small improvement in the share of the middle 20 percent group from 25.75 percent in 1953 to 26 percent in 1971 and further to 26.5 percent in 1981. This trivial improvement in the share of

the middle segment is mainly attributable to tenancy reforms which did tilt the balance of class forces within the peasantry, in favour of the emerging class of rich peasants who could afford to purchase ownership rights to hitherto tenanted land vested with the government under the reforms.

Even though official data on landlessness shows a drastic decline in the percentage of rural landless households in U.P. from 9.36 percent in 1953 to 2.78 percent in 1961, this could well be owing to definitional changes rather than any positive impact of land redistributive measures. The definition of 'ownership' after the NSS 17th round was changed to include 'owner-like' possession of land covering long term leases of about thirty to fifty years. Table 5.2 shows that the combined percentage of landless and semi-landless households has risen both in U.P. but at the all-India level especially, since the 1970s.

The second period between 1971 and 2013 has seen rising inequality in land ownership. The first two decades of this period saw the introduction and subsequent spread of the 'green revolution' technology in Indian agriculture accompanied by an increase in the concentration of land ownership in India. In U.P., the distribution of owned area after worsening throughout till 1981, improved marginally in favour of the bottom 65 percent of households between 1981 and 1991. While the share of the top 15 percent group remained unchanged in U.P. at 57 percent and increased marginally in India from 65 to 65.25 percent between 1971 and 1991, the share of the top 5 percent of households in India increased to 38 percent in 1991 after remaining constant at 37.25 percent in 1971 and 1981. The percentage share of the bottom 65 percent of households declined in India from 11.5 to 10.25 over the same period while for U.P., it declined from 17 percent in 1971 to 16.5 percent 1981 and increased thereafter to 17.5 percent in 1991.

This trend increase in the concentration of owned area has continued unabated in the period of neo-liberal economic reforms initiated in 1991. In U.P., the share of the top 15 percent continued to rise throughout the neoliberal reforms period while that of the bottom 65 percent continued to decline. However, at the All-India level, a rise in concentration in favour of the top 15 percent of households between 1991 and 2003 was followed by decline between 2003 and 2013. The shares of the bottom 65

percent and middle 20 percent, after falling initially between 1991 and 2003, show an increase thereafter in the period between 2003 and 2013.

For the first time since 1971-72, the decade after 2003 has seen a decline in area owned by the top 15 percent of households at the All-India level. Looking at the Lorenz curves again, we find that within the top 15 percent, even the share of the topmost 5 percent has declined for the first time since 1971-72 by 2 points between 2003 and 2013. This All-India scenario is in sharp contrast to the one that prevails in U.P. where the share of the topmost 5 percent has risen considerably at the expense of the 10 percent immediately below it throughout the economic reforms period. An explanation must perhaps be sought in the worsening macroeconomic conditions in the economy attributable to neoliberal policies which have rendered cultivation not only increasingly unviable for the vast masses of the toiling poor but also less profitable even for those cultivators who were earlier viable or well-to-do (See chapters 6 & 11).

Our findings above show an increase in inequality since the 1970s. The Gini coefficient however remains constant at 0.71 between 1970-71 and 1991-92 for All-India while it registers decline in U.P. from 0.63 in 1971-72 to 0.60 in 1981-82 (Table 5.3). This reflects the fact that our three-fold grouping retains more of the data thus more effectively reflecting the type of inequality, than a summary statistic like the Gini. Further, the Gini co-efficient is calculated on the basis of landowning households only and does not take into account those who, over time, lose land and become landless tenants or labourers.⁹ Therefore, it is not an entirely adequate indicator for measuring changes in the extent of inequality in land distribution. V.M. Rao had derived a formula for adjusting this co-efficient for landless households which was used by U. Patnaik (1972) for calculating the adjusted ratio for household ownership holdings for the eighth round of the NSS. The formula used is $[Ca=(1-r).Cu + r]$ where Cu is the unadjusted concentration ratio, Ca is the adjusted concentration ratio and $r=N_2/N$ (where N_1 is the number of landowners, N_2 is the number of landless persons and $N=N_1+N_2$ is the total population) i.e., the proportion

⁹ V.M.Rao. 1970. 'Adjustment of Measure of Inequality in Rural Land Ownership for Landless Categories'. *Indian Journal of Agricultural Economics*. Vol. XXV, 2 April-June, pp.59-64.

of landless households to total population.¹⁰ Following the same procedure for successive landholding rounds of the NSS for U.P. and All-India, we get the following:

Table 5.3: Concentration Ratios (Adjusted and Unadjusted) for Household Ownership Holdings

NSS Round (Year)	No. of Sample Households		Unadjusted Concentration Ratio (Cu)		Percentage of Landless Households		Adjusted Concentration Ratio (Ca)	
	U.P.	All-India	U.P.	All-India	U.P.	All-India	U.P.	All-India
70 th (2013)	..		..	0.72		7.41	..	0.74
59 th (2003)	..	52265	..	0.74	..	10.0	..	0.77
48 th (1991-92)	4166	33289	0.63	0.71	4.9	11.3	0.65	0.74
37 th (1981-82)	3444	29089	0.60	0.71	4.9	11.3	0.62	0.74
26 th (1971-72)	3807	35947	0.63	0.71	4.6	9.64	0.645	0.74
17 th (1961-62)	4962	53138	0.72	0.73	2.78	11.68	0.73	0.76
8 th (1953-54)	-	75720	0.64	0.76	9.36	23.09	-	0.82

Source: Obtained from various NSS Reports: (i) Report 491. p.11,12. (ii) Report 399. pp.16, A-30. (iii) Report No. 330. p. 59 and (iv) Report No.215 (vol.1) on U.P. p.86. (State-level gini co-efficients of ownership holdings (Cu) not available for the 59th round of the NSS. See footnote 3 on p.21 of report no.492.) For the 70th round, see NSS Report No. 571.

The levels of concentration in each decade as shown by Ca (i.e., adjusted ratio) are higher than the levels using the original unadjusted ratio Cu, though the trend naturally remains unchanged.

Even where ownership of land may be highly concentrated, the operation of land is generally expected to show a lower degree of concentration. It is presumed that there will be a net transfer of land through the lease market from the land- rich to the land- poor. It is presumed that most of the owned area leased out is done so by big owners to petty tenants while most of the operated area leased in, is leased in by small owners from big ones. However, this presumption is not entirely borne out by the actual situation as depicted in Tables 5.4, 5.6a and 5.6b. Long-term trends in operated area show concentration levels that, though slightly less than in the case of ownership holdings, nevertheless continues to be very high.

¹⁰ Ibid. Also see U. Patnaik. 1972. 'Economics of Farm Size and Farm Scale – some Assumptions Re-examined'. *EPW*. Vol.7, 31-33, Special Number, July-Aug.

Table 5.4: Trends In The Concentration Of Area Operated In U.P. In Relation To All-India, 1953-54 to 2013 (Percent)

Year	NSS Round	Bottom 65		Middle 20		Top 15		Top 5	
		U.P.	All-India	U.P.	All-India	U.P.	All-India	U.P.	All-India
2013	70 th	20.0	19.0	25.0	25.75	55.0	55.25	30.5	32.0
2003	59 th	22.0	18.0	27.0	24.0	51.0	58.0	29.5	34.75
1991-92	48 th	22.0	17.5	26.75	23.5	51.25	59.0	27.25	33.25
1981-82	37 th	23.0	18.25	24.75	23.75	52.25	58.0	27.0	32.25
1971-72	26 th	28.75	21.5	24.25	23.5	47.0	55.0	27.0	30.0
1953-54	8 th	19.0	12.25	26.75	23.25	54.25	64.5	30.0	39.0

Source: Calculated from data in NSS Report Nos.492, 407 and 66 for All-India and Report Nos. 66, 215, 407, 338 and 492 for U.P. Note: Results of 59th and 70th Rounds for the years 2003 and 2013 for U.P. includes data on Uttaranchal to make it comparable with previous rounds. For the 70th round, see NSS Report No. 571. Table 13. Pp. A-650, A-653 and A-695 for Uttarakhand, U.P. and All-India respectively.

Table 5.6a: Distribution of Total Area Leased-in in U.P. and All-India, 1953-54 to 2003 (Percent)

Year	NSS Round	Bottom 65		Middle 20		Top 15	
		U.P.	All-India	U.P.	All-India	U.P.	All-India
2003	59 th	24.0	24.0	28.0	26.5	48.0	49.75
1991-92	48 th	21.2	17.0	32.3	24.6	46.5	58.4
1971-72	26 th	36.2	32.0	27.8	29.0	36.0	39.0
1953-54	8 th	31.0	-	30.0	-	39.0	-

Source: Calculated from NSS Report No. 66. p.46. Report No. 215. (Vol.I). p. 88. Report No. 407. p. A-52. Report No.492. p. A-81.

Note: Estimates of 2003 of U.P. as well as All-India calculated from the 59th round of NSSO reports are based on area operated under Kharif only.

Table 5.6_b: Trends in the Distribution of Total Area Leased-in All-India (Percent)

Year	NSS Round	Bottom 60	Middle 25	Top 15
2003	59 th	18.75	31.5	49.75
1991-92	48 th	13.0	28.6	58.4
1971-72	26 th	27.0	34.0	39.0
1953-54	8 th	10.0	27.5	62.5

Source: Calculated from NSS Report No.407 and 492, A-56; Report No. 215. p.49. For 1953-4 and 1971, see U. Patnaik,1976 'Class Differentiation Within the Peasantry: An Approach to Analyses of Indian Agriculture'.

Table 5.4 shows that a trend similar to the one observed in the distribution of owned area can be seen in the case of operated area as well. Between 1953 to 1971, in U.P., the decline in the share of the top 15 percent in total operated area is from 54.25 percent to 47 percent, much sharper when compared to that in owned area. The beneficiary of this reduced share was the bottom 65 percent whose share rose from 19 percent to 28.75. The middle segment too registered a decline from 26.75 percent to 24.25 during the same period. A somewhat similar trend is seen at the All-India level where the bottom 65 percent was the main beneficiary of a relatively larger decline in the share of the top 15 percent. The position of the middle group remained largely unaffected as there was a very small increase in its share from 23.25 percent to 23.5 percent between 1953 and 1971.

Further, regional variations are present within U.P. which is a very large state. Table 5.5 shows the relative position of ownership and operation of land in Western and Eastern U.P. in 1971, nearly two decades of the implementation of the U.P. Zamindari Abolition and Land Reforms Act.

Table 5.5: Concentration of Area Owned and Operated in Western and Eastern U.P. in 1971-72 (viz., NSS Round No. 26th) (Percent)

Region	Owned Area			Operated Area		
	Bottom 65	Middle 20	Top 15	Bottom 65	Middle 20	Top 15
Western U.P.	17.5	29.5	53.0	31.8	21.7	46.5
Eastern U.P.	19.8	26.2	54.0	27.5	27.5	45.0
U.P.	18.0	26.5	55.5	18.5	30.3	51.2

Source: NSS Report No.215 (Vol.2) on U.P. pp. 118, 170.

Note: (i) The 26th round which gives the region-wise break-up also provides data on the Himalayan, Southern and the Central regions within U.P. These have, however, not been included here.

The share of total area operated by the top 15 percent in 1971, in both Western and Eastern U.P., was much less than its share in owned area while the reverse was true for the bottom 65 percent of households. The difference reflects net leasing-in of land from the top 15 percent by the bottom 65 percent of households. However, unlike in eastern U.P. where the share of the middle group in total area owned and operated was roughly the same around 26 to 27.5 percent, in Western U.P., even the middle group was leasing-out a substantial proportion of its owned land to the bottom segment up to 1971.

The second phase from 1971 to 1991, the period of the ‘green revolution’ in Indian agriculture shows an increase in the concentration of operated area with the top 15 percent in U.P. as well as in India. Table 5.4 shows that in India, the top 15 percent consolidated its position with respect to operated area at the expense of the bottom 65 percent, even as the share of the middle segment remained constant at 23.5 percent. In U.P., the increase in the share of the top 15 percent during the first decade was much larger and the consequent decline in the share of the bottom 65 percent sharper than in India. Thereafter, between 1981 and 1991, while the share of the top and bottom segments declined by 1 point each, that of the middle segment rose by 2 points.

The third phase of neo-liberal economic reforms since 1991 saw a reversal of the earlier trend of increased concentration and has been marked by a *decline* in the share of the top 15 percent of the households. However, the definition of operational holding has been changed again in the 2013 Report, which warns of non-comparability, so it is difficult to assess whether this is a real trend.¹¹ At the All-India level, the decline starts from 1991 but it has been particularly sharp between 2003 and 2013. U.P. however presents a contrasting scenario: after a small initial decline in the percent share of the top 15 percent of households from 51.25 to 51 during 1991 to 2003, it increases thereafter to 55 in 2013 (Table 5.4). However, within the top 15 percent, the share of the topmost 5 percent has been rising steadily in U.P. throughout the period of neoliberal economic reforms, as is evident from Table 5.4. In India, though the share of the topmost 5 percent within the top 15 percent has been rising continuously since 1971, the decade after 2003 has for the first time seen a decline in its share by 2.75 points.

Even though the concentration of operated area is usually expected to be much less than that of owned area primarily owing to net leasing-in from big landlords by smaller cultivators, this is not supported by the official data to the expected extent. The reason for this lies partly in the complex pattern of tenancy relations whereby the

¹¹ See NSS Report No. 571. *Household Ownership and Operational Holdings in India*. 2013. See p.33 where it is stated that “during 2002-03 (59th round), the area possessed by an operational holding for the major part of the reference period was taken as its ‘area operated’ while in 2012-13 (70th round) ‘area operated’ includes the area of the plots which were used for agricultural activities, i.e., only crop production on jhum land, only farming of animal/fishery, both crop production and farming of animal/fishery, and other agricultural uses.”

marginal and small landowners also lease out to bigger landowners. Partly it may lie in tenancy being driven underground and not being recorded.

Long-term trends in the distribution of total area leased-in in U.P. in relation to All-India are clear from Tables 5.6a and 5.6b. In U.P., while the share of the bottom 65 percent of the households in total leased-in area increased from 31 percent to 36.2 percent between 1953 and 1971, that of the top 15 and middle 20 percent of households declined. This trend is however reversed if we look at the period of technical change between 1971 and 1991. The increase in the share of the top 15 percent as also of middle 20 percent of households was mainly at the expense of a substantial decline in the share of the bottom 65 percent by more than two-fifths from 36 percent to 21 percent. The period of neo-liberal economic reforms since 1991 has however been marked by a break in the earlier pattern of distribution of leased-in area. A gradual withdrawal of the state from its active demand management role through public investment, has increasingly resulted in non-viability of farming, especially for those at the lower end of the rural hierarchy.

This gets reflected in a complex pattern of tenant relations in U.P. wherein the middle segment of farmers are leasing-out their lands to the top 15 percent. At the same time, increasing mechanisation accompanied by shifts in cropping pattern resulting in decline in farm employment as also lack of non-farm employment options, has led the marginalized majority comprising the landless and semi-landless to desperately hold on to tiny plots of land obtained through the land lease market by offering higher rents. This is reflected in a rise in the share of the bottom 65 percent in total leased-in area in 2003 in U.P. In the absence of alternative employment options, this tendency of the marginalized poor to lease-in land by offering higher rents has the potential risk of reasserting the barrier of pre-capitalist rent to the process of capitalist accumulation, a question taken up in the next chapter.

A similar pattern of land leasing-in can be observed in All-India from Table 5.6b. However, unlike in U.P., the data on distribution of total leased-in area for All-India shows a rise in the share of the top 15 percent in 1991 over 1971 from 39 percent to 58.4 percent, via a large decline in the share of the bottom 65 percent as also a 5.4 percent fall in the share of middle segment in total leased-in area. The post

reform period however has been marked by a distinct break in the earlier trend seen in favour of reverse tenancy.

However, the ongoing period of neo-liberal economic reforms since 1991 has seen a withdrawal of the state from its demand stimulating role in the economy at large while agriculture has been opened up further to trade. Accelerated commercialisation of agriculture has been taking place simultaneously with declining levels of public investment. Declining productivity levels accompanied by increasing production costs owing to falling input subsidies has led to declining profitability of agricultural production.

In the event of a decline in profitability as is indeed happening at present, if there is no land reform, there is always a risk of landlords- turning capitalist farmers switching back from direct cultivation to leasing out land as a method of surplus appropriation. Our results discussed so far on trends in concentration of operated and leased-in area during the period of reforms show a definite break from the earlier trend towards reverse tenancy prevalent during the green revolution decades. In the absence of alternative employment options, this tendency of the marginalized poor to lease-in land by offering higher rents has the potential risk of reasserting the barrier of pre-capitalist rent to the process of capitalist accumulation.

Concluding Remarks

From a rapidly growing economy of the mid-sixties constrained on the supply side and marking a definite break from the trends that prevailed during the colonial period, to its transformation into a demand constrained system since the nineteen nineties, Indian economy has indeed come a long way. The capitalist model of agrarian development adopted by the post-colonial Indian state has resulted in increasing concentration of socio-economic and political power in the hands of the rural elite. Land reforms as implemented across the Indian countryside in the period immediately after independence by and large failed to address the equity aspect to a sufficient degree. Far from being egalitarian in nature, land reforms aided in the formation of landlords- turned capitalist class while also encouraging the rise of the rich peasantry, especially in North India.

The concentration of agricultural output as also access to the means of production in the hands of the rural rich was intensified by the adoption and subsequent spread of the green revolution technology. Given that the yield raising HYV package was introduced within the context of an unreformed agrarian structure with barely one-fifth of the total cultivated area having irrigation facilities then, the technology was bound to be crop, region and class specific. The New Agricultural Strategy, by concentrating such high levels of agricultural surplus in the hands of a tiny minority of rich farmers in agriculturally advanced areas, has weakened the very foundations of central planning itself.

The fact that more than 50 percent of the workforce is still employed in agriculture even after half a century of technological reforms in Indian agriculture shows that inter-sectoral linkages in the economy continue to be weak. A sharp deceleration can be seen in growth rates of agricultural production and yields not only in U.P. but across the Indian countryside during the economic reforms period, the decline being particularly sharp since the mid-1990s when Indian agriculture was opened up to trade liberalization. This slowing down of the agrarian economy since the decade of the 1990s is attributed as much to the changing demand management role of the state and trade liberalization prescribed by neoliberal economic policies as to the government's failure to radically alter the agrarian structure via progressive land reforms.

However, the period of technological reforms was one wherein the state did actively intervene to stimulate demand in the economy. The dissemination of modern technology required a substantial increase in government expenditure in irrigation, subsidized inputs, cheap credit etc. Thus, the 'green revolution' period saw a stepping up of public expenditure in rural economy. Various poverty alleviation programmes and numerous welfare schemes introduced by the government during this period to offset the adverse employment effects of new technology did help mitigate the problem of domestic demand in an otherwise heavily skewed pattern of asset and income distribution. It is commonly said that the state 'withdrew' from managing demand in the economy during neoliberal reforms era: on the contrary, the evidence on the fiscal policy actually followed shows that it has actively engaged in reducing

aggregate demand in the economy quoting the tenets of 'sound finance' in order to reduce public expenditure, at the behest of international financial institutions.

The introduction of green revolution technology in the mid-sixties was the Indian state's response to the growing need for attaining 'self-sufficiency' in food grains production amidst the humiliating experience of importing PL 480 wheat from the U.S. A decisive shift in the demand stimulating role of the state, from active to passive and further to promoting actual income-deflation, seen from 1991 onwards was a response to yet another situation following the war in Kuwait, which was blown up to crisis proportions.¹² The actual situation with regard to the balance of payments in 1991 was arguably not so serious and could have been tackled through direct import controls and fuel rationing. But a difficult situation was converted into a crisis by interested parties which wanted if not a political regime change, definitely a policy regime change in India to favour the interests of advanced countries on the one hand, and the Indian elite on the other. The neo-liberal economic reforms initiated from the nineties, have certainly benefited the topmost fractiles of the population by tilting income distribution towards it, but at the expense of a new form of agrarian crisis affecting the majority of cultivators while the share of wages in value added in manufacturing has also declined sharply. The new agrarian problem forms the subject of more detailed study in the next chapter.

¹² Amit Bhaduri and Deepak Nayyar 1996 *The Intelligent Person's Guide To Liberalization*.

Appendix to Chapter 5:

Table A₁: Cumulative Percentage Distribution of Household Ownership Holdings and Area Owned by Size-Class of Household Ownership Holdings in All-India and U.P., 2013

Size Class of Household Ownership Holdings (in ha.)	All-India		Uttar Pradesh	
	Cumulative Percentage distribution of		Cumulative Percentage distribution of	
	Households (X)	Area Owned (Y)	Households (X)	Area Owned (Y)
Below 0.500	69.2	12.8	72.5	20.9
Below 1.000	82.8	29.8	87.3	43.5
Below 2.000	92.8	53.3	95.4	67.2
Below 4.000	97.8	75.4	99.0	87.2
Below 5.000	98.6	81.2	99.4	90.1
Below 7.500	99.4	89.6	99.7	94.4
Below 10.00	99.8	94.2	100.0	99.3
Below 20.00	100.0	99.2	100.0	99.9
All Sizes	100.0	100.0	100.0	100.0

Source: NSS Report No. 571. See Table 4, pp. A-168, A-171 and A-213.

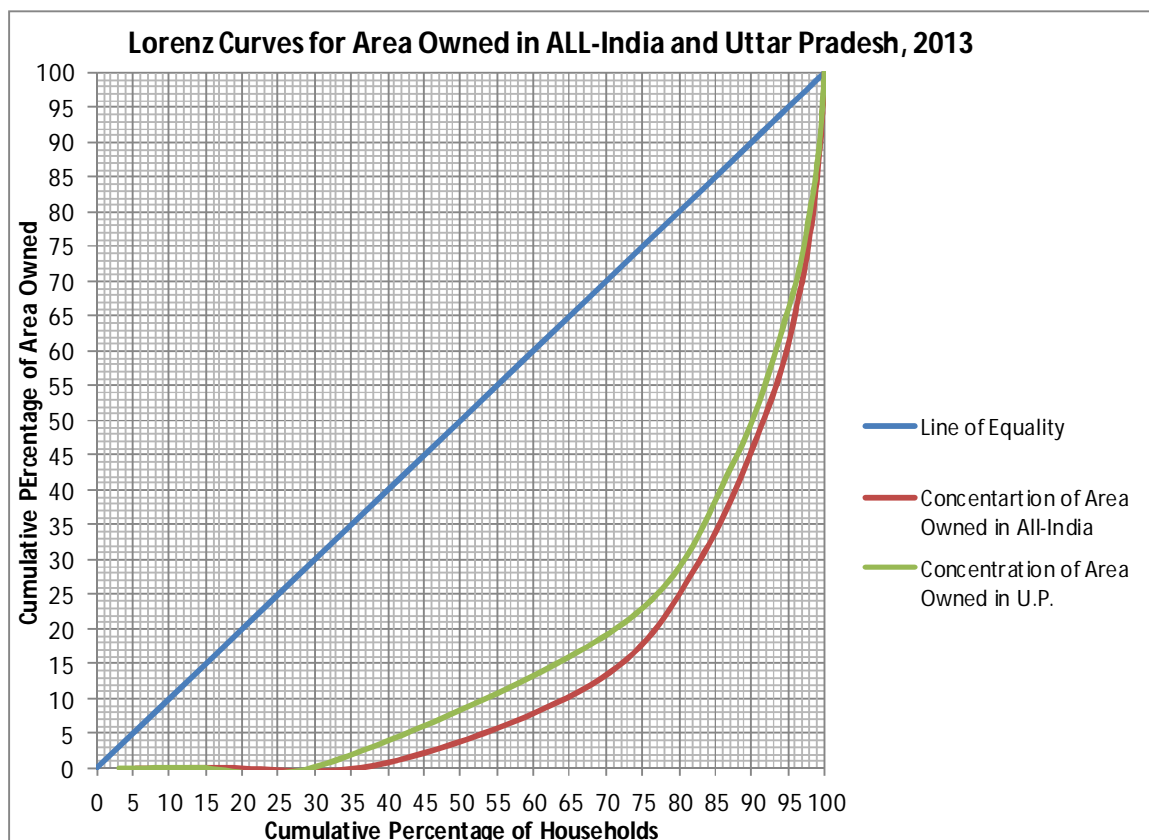


Table A₂: Cumulative Percentage Distribution of Household Ownership Holdings and Area Owned by Size-Class of Household Ownership Holdings in All-India and U.P., 2003

Size Class of Household Ownership Holdings (in ha.)	All-India		Uttar Pradesh	
	Cumulative Percentage distribution of		Cumulative Percentage distribution of	
	Households (X)	Area Owned (Y)	Households (X)	Area Owned (Y)
Below 0.41	60.15	5.83	28	0.4
Below 1.01	79.67	23.02	64.8	15.9
Below 2.01	90.48	43.4	81.7	35.9
Below 4.01	96.51	65.37	97	76.2
Below 8.01	99.14	84.44	99.1	89
Below 12.01	99.63	90.83	99.91	97.7
Below 20.01	99.9	97.02	99.99	99.8
All Sizes	100	100	100	100

Source: Source: NSS Report No. 491. Household Ownership Holdings in India, 2003. 59th Round (January-December, 2003). See Statement 3 on p.12 and Table 1R on p.A-13.

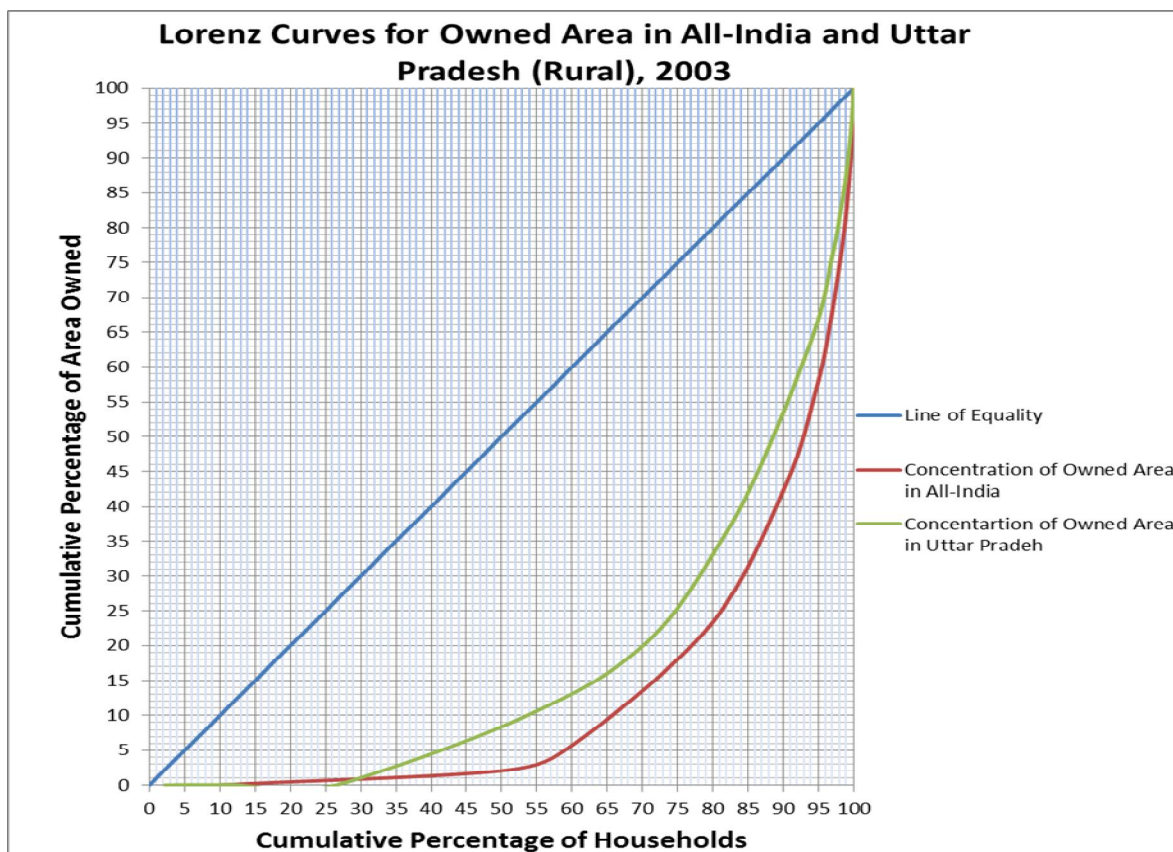


Table A₃: Cumulative Percentage Distribution of Household Ownership Holdings and Area Owned by Size-Class of Household Ownership Holdings in All-India and U.P., 1991-92

Size Class of Household Ownership Holdings (in ha.)	All-India		Uttar Pradesh	
	Cumulative Percentage distribution of		Cumulative Percentage distribution of	
	Households (X)	Area Owned (Y)	Households (X)	Area Owned (Y)
Upto 0.40	51.36	3.8	47.69	6.53
0.41-1.0	71.88	16.93	74.4	27.42
1.01-2.00	85.3	35.52	89.13	52.3
2.0-4.0	94.58	60.1	97.05	78.12
4.0-8.0	98.5	80.74	99.64	94.49
8.0-12.0	99.4	89.18	99.89	97.28
12.0-20.0	99.85	95.69	100.01	99.51
All sizes	100	100	100.02	99.99

Source: NSS Report No. 399. 'Some Aspects of Household Ownership Holdings', 48th Round, 1992. See pp. A-13, A-18, A-30 and A-35.

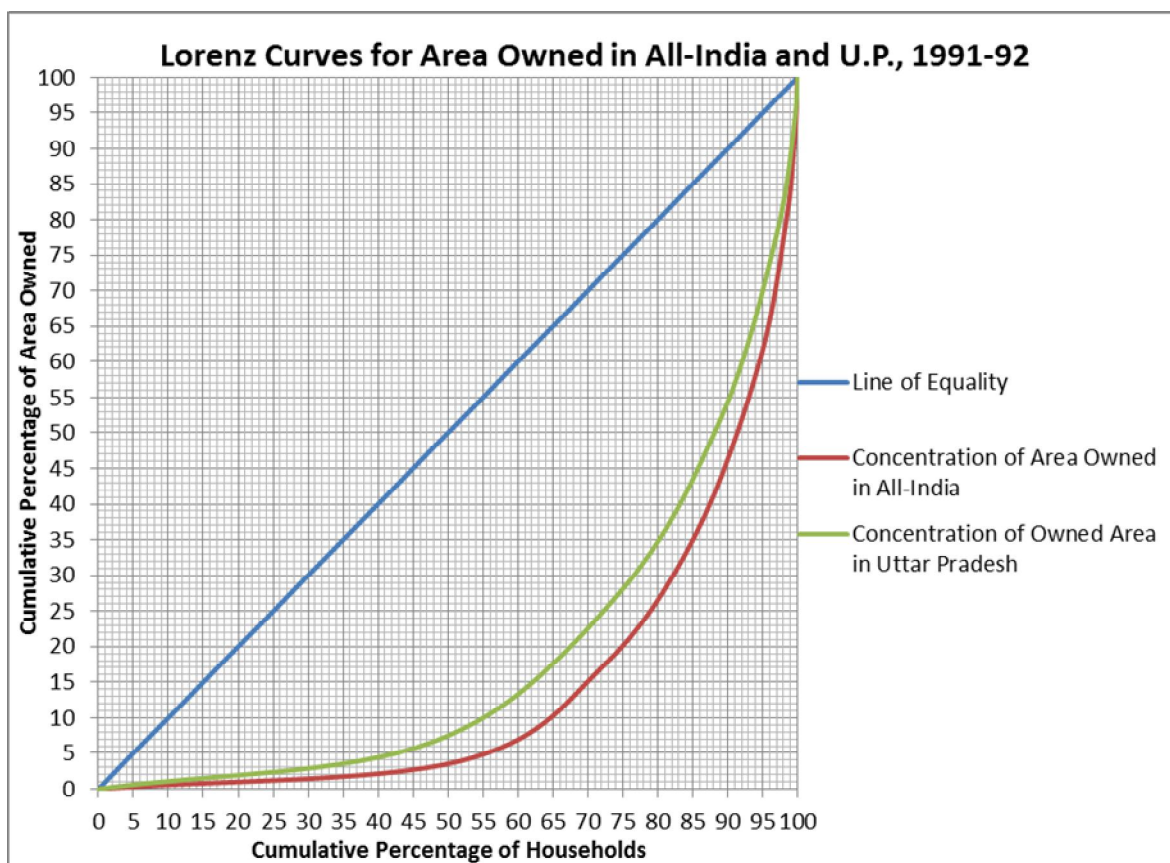


Table A4: Cumulative Percentage Distribution of Household Ownership Holdings and Area Owned by Size-Class of Household Ownership Holdings in All-India and U.P., 1981-82

Size-class of Household Ownership Holdings (ha.)	All-India		Uttar Pradesh	
	Cumulative Percentage distribution of		Cumulative Percentage distribution of	
	Households (X)	Area Owned (Y)	Households (X)	Area Owned (Y)
Upto 0.40	48.21	2.75	43.56	3.62
Upto 1.00	66.65	12.22	67.95	19.35
Upto 2.02	81.35	28.71	85.34	43.73
Upto 4.04	92.13	52.09	95.57	72.20
Upto 8.09	97.66	75.56	99.17	90.75
Upto 12.14	99.02	85.74	99.78	96.34
Upto 20.24	99.77	94.58	99.96	98.93
All Sizes	100.00	100.00	100.00	100.00

Source: NSS Report No.330. See pp.59 and 68.

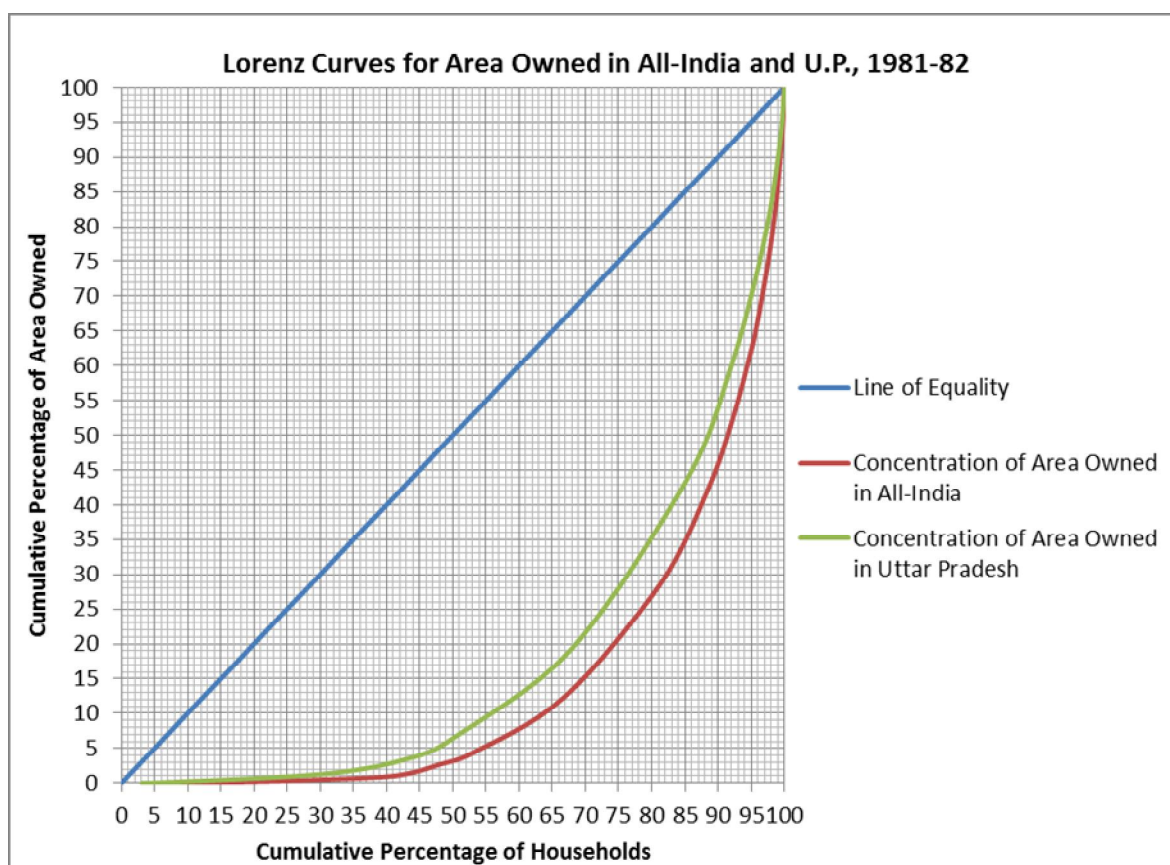


Table A₅: Cumulative Percentage Distribution of Household Ownership Holdings and Area Owned by Size-Class of Household Ownership Holdings in All-India and U.P., 1971-72

Size-class of household ownership holding (ha.)	All India		Uttar Pradesh	
	Cumulative Percentage Distribution of Households (X)	Area Owned (Y)	Cumulative Percentage Distribution of Households (X)	Area Owned (Y)
Upto 0.40	44.87	2.07	43.39	3.92
Upto 1.00	62.62	9.76	65.58	17.49
Upto 2.02	78.11	24.44	84.18	42.14
Upto 4.04	90.05	46.36	95.02	70.08
Upto 8.09	96.71	70.19	99.02	89.91
Upto 12.14	98.55	81.89	99.7	95.88
Upto 20.24	99.59	92.14	99.97	99.27
All Sizes	100	100	100	100

Source: NSS Report No. 215. See pp.66 & 67 for All-India & see State Tables, Volume I, pp. 65 & 66 for U.P.

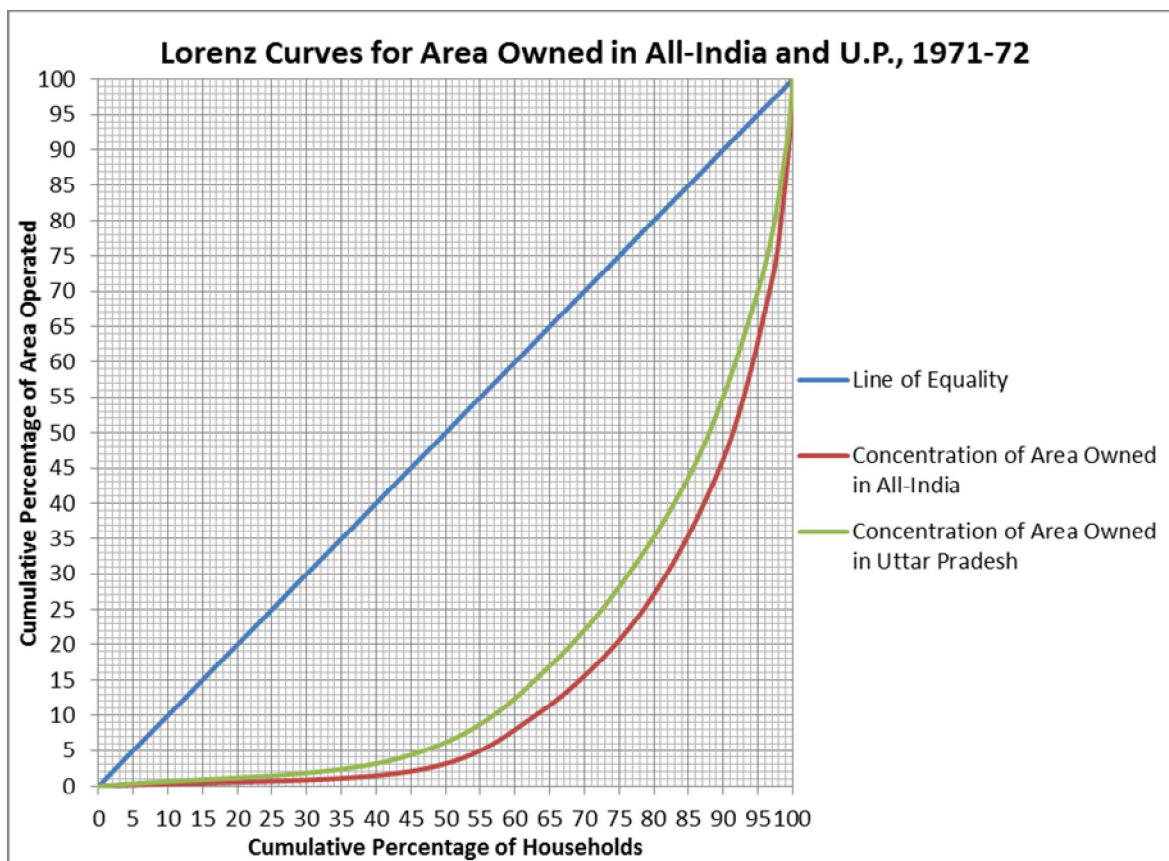


Table A₆: Cumulative Percentage Distribution of Household Ownership Holdings and Owned Area by Size-Class of Household Ownership Holdings in All-India and U.P., 1953-54

Size-class of Ownership Holdings (ha.)	All-India		Uttar Pradesh	
	Cumulative Percentage Distribution of		Cumulative Percentage Distribution of	
	Households (X)	Area Owned (Y)	Households (X)	Area Owned (Y)
Upto 1.0	46.9	1.4	49.05	2.37
Upto 2.5	60.8	6.3	60.03	12.48
Upto 5.0	74.4	16.8	78.43	31.83
Upto 10.0	87.3	36	92.68	60.91
Upto 20.0	95.1	58.9	98.21	83.11
Upto 30.0	97.6	72	99.24	90.34
Upto 50.0	99.1	84.4	99.87	97.1
All Sizes	100	100	100	100

Source: NSS Report No. 66. See pp. 12 and 44.

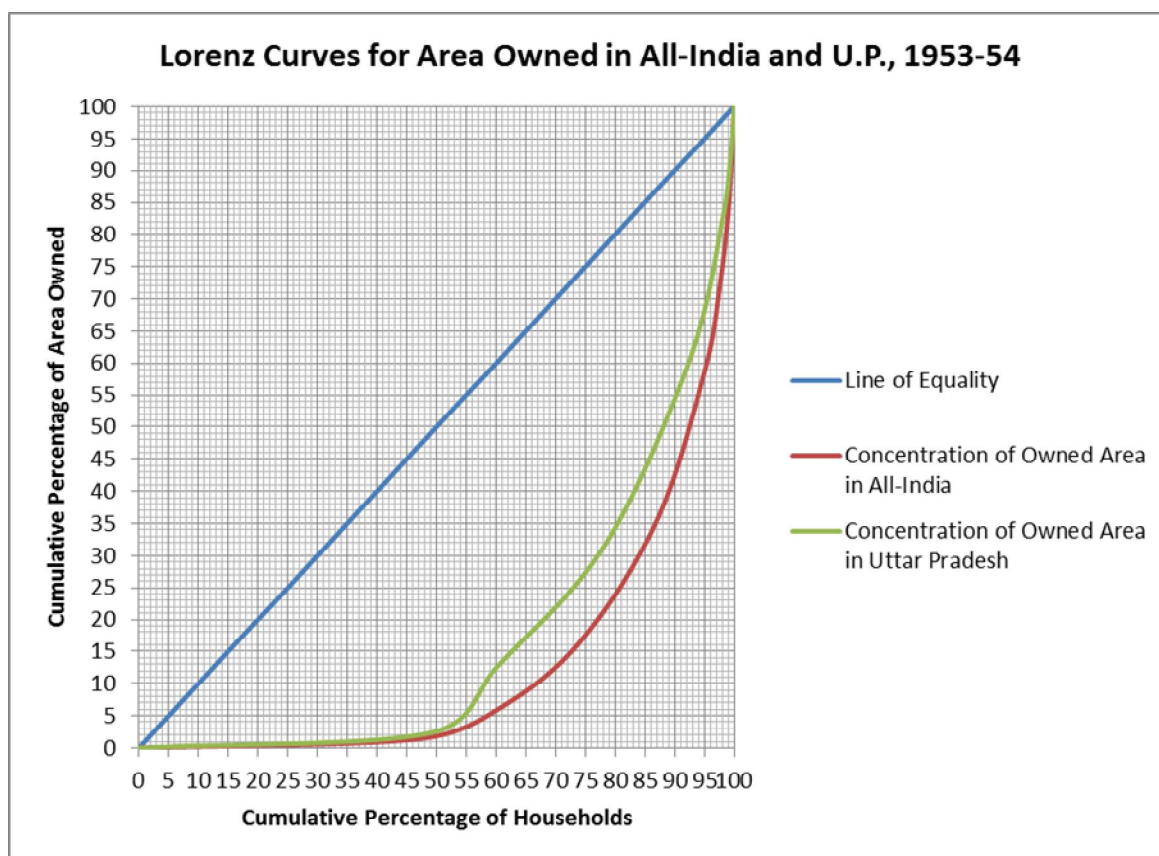


Table B₁: Cumulative Percentage Distribution of Operational Holdings and Area Operated by Size-Class of Operational Holdings in All-India and U.P., 2013

Size-class of operational holding (ha.)	All-India		Uttar Pradesh	
	Cumulative Percentage Distribution of		Cumulative Percentage Distribution of	
	Holdings (X)	Area Operated (Y)	Holdings (X)	Area Operated (Y)
Below 0.500	52.2	10.8	63.1	18.9
Below 1.000	73.2	27.7	83.0	41.8
Below 2.000	88.5	51.1	93.6	65.2
Below 4.000	96.6	74.7	98.7	86.2
Below 5.000	97.8	80.5	99.2	90.0
Below 7.500	99.2	89.8	99.6	94.0
Below 10.00	99.6	94.0	99.9	98.0
Below 20.00	100.0	99.1	100.0	99.8
All Sizes	100.0	100.0	100.0	100.0

Source: NSS Report No. 571. See pp. A-650, A-653 and A-695.

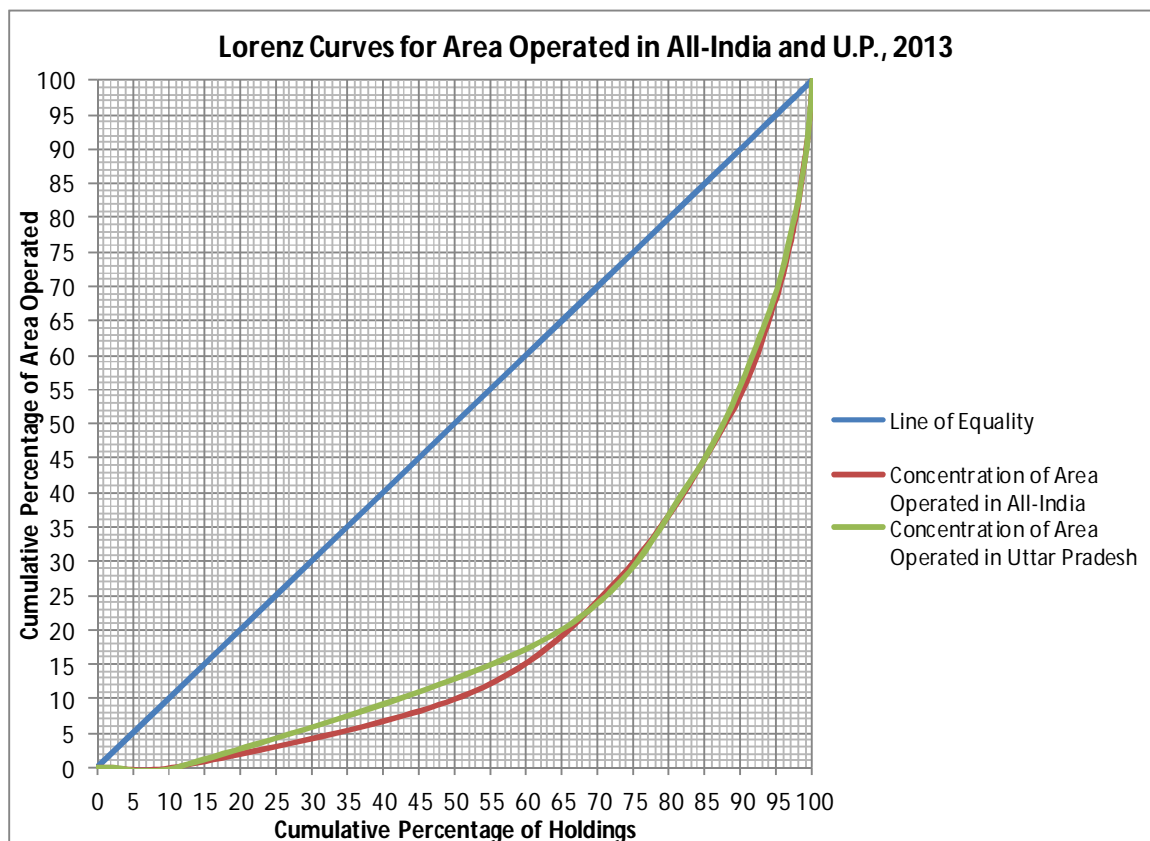


Table B₂: Cumulative Percentage Distribution of Operational Holdings and Area Operated by Size-Class of Operational Holding in All-India and Uttar Pradesh (Kharif), 2003

Size Class of Operational Holdings	All- India		Uttar Pradesh	
	Cumulative Percentage Distribution of		Cumulative Percentage Distribution of	
	Holdings (X)	Area Operated (Y)	Holdings (X)	Area Operated (Y)
Upto 0.5	49.8	8.8	54.5	14.4
Upto 1.0	69.8	22.6	76.7	35.7
Upto 2.0	86	43.5	92.6	64.9
Upto 4.0	95	65.9	98.2	84.8
Upto 5.0	96.9	73.8	98.9	89
Upto 7.5	98.6	83.5	99.8	96
Upto 10.0	99.2	88.2	99.9	97.2
Upto 20.0	99.9	96.9	99.96	99.2
All Sizes	100	100	100	100

Source: NSS Report No. 492. See pp. A-25, A-26 and A-28.

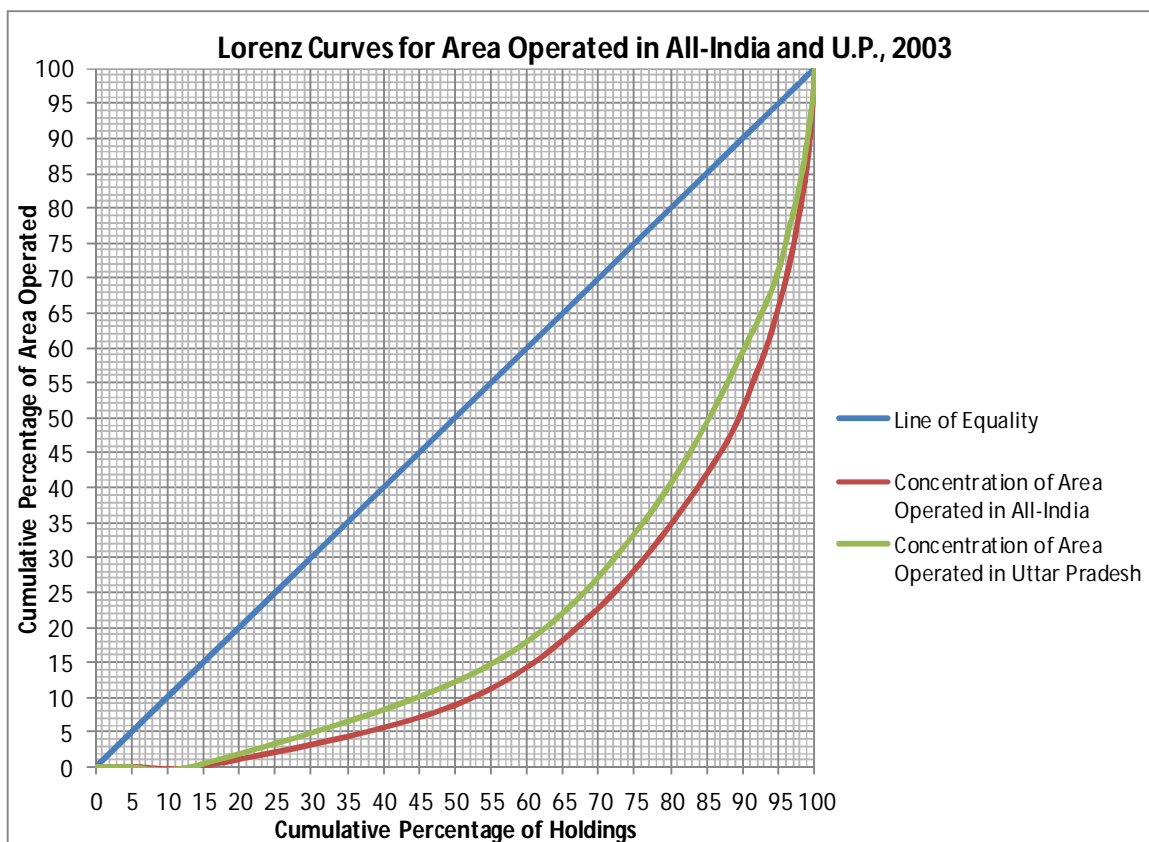


Table B₃: Cumulative Percentage Distribution of Operational Holdings and Area Operated by Size-Class of Operational Holding in All-India and Uttar Pradesh, 1991-92

Size Class of Household Operational Holdings (ha.)	All-India		Uttar Pradesh	
	Cumulative Percentage Distribution of		Cumulative Percentage Distribution of	
	Holdings (X)	Area Operated (Y)	Holdings (X)	Area Operated (Y)
Upto 0.50	44.42	5.5	45.84	8.84
Upto 1.00	62.79	15.6	68.02	24.96
Upto 2.00	80.58	34.3	86.54	51.26
Upto 4.00	92.57	58.43	96.39	77.56
Upto 5.00	95.15	66.93	97.99	84.6
Upto 6.00	96.35	71.84	98.82	89.09
Upto 8.00	97.84	79.36	99.47	93.59
Upto 10.00	98.67	84.8	99.72	95.74
Upto 20.00	99.8	95.83	99.99	99.38
All Sizes	100	100	100.01	99.99

Source: NSS Report No. 407. See pp. A-11 and A-17.

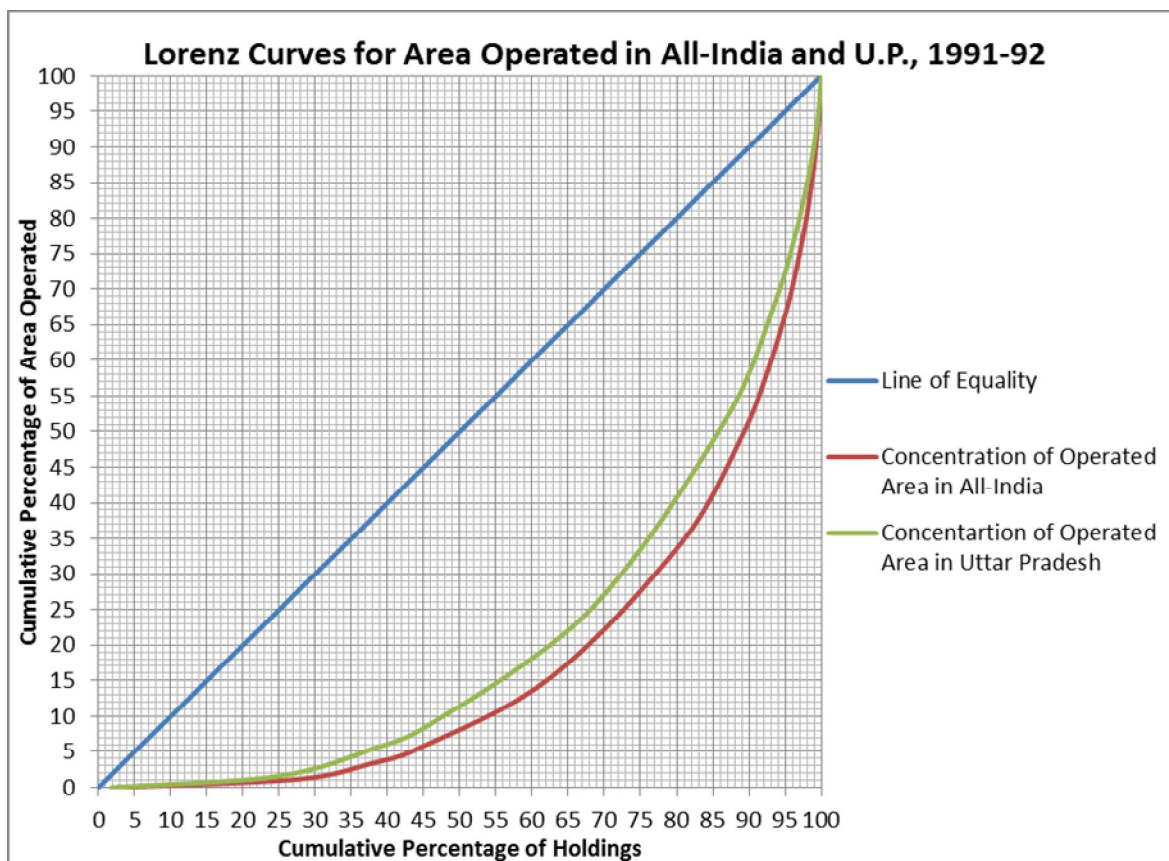


Table B₄: Cumulative Percentage Distribution of Operational Holdings and Area Operated by Size-Class of Operational Holdings in All-India and U.P., 1981-82

Size-class of Operational Holdings (ha.)	All-India		Uttar Pradesh	
	Cumulative Percentage Distribution of		Cumulative Percentage Distribution of	
	Holdings (X)	Area Operated (Y)	Holdings (X)	Area Operated (Y)
Upto 0.50	38.88	3.95	38.75	6.07
Upto 1.00	56.01	11.51	59.62	18.08
Upto 2.02	75.33	28.1	81.21	41.84
Upto 4.04	89.56	51.65	94.09	69.88
Upto 5.05	93.03	60.92	96.86	79.49
Upto 6.07	94.82	66.85	97.8	83.51
Upto 8.09	97.01	75.87	98.96	89.76
Upto 10.12	98.12	81.8	99.49	93.5
Upto 20.24	99.69	94.57	99.91	97.77
All Sizes	100	100	100	100

Source: NSS Report No. 331. See pp. 81, 100 for U.P. and pp. 90, 105 for All-India.

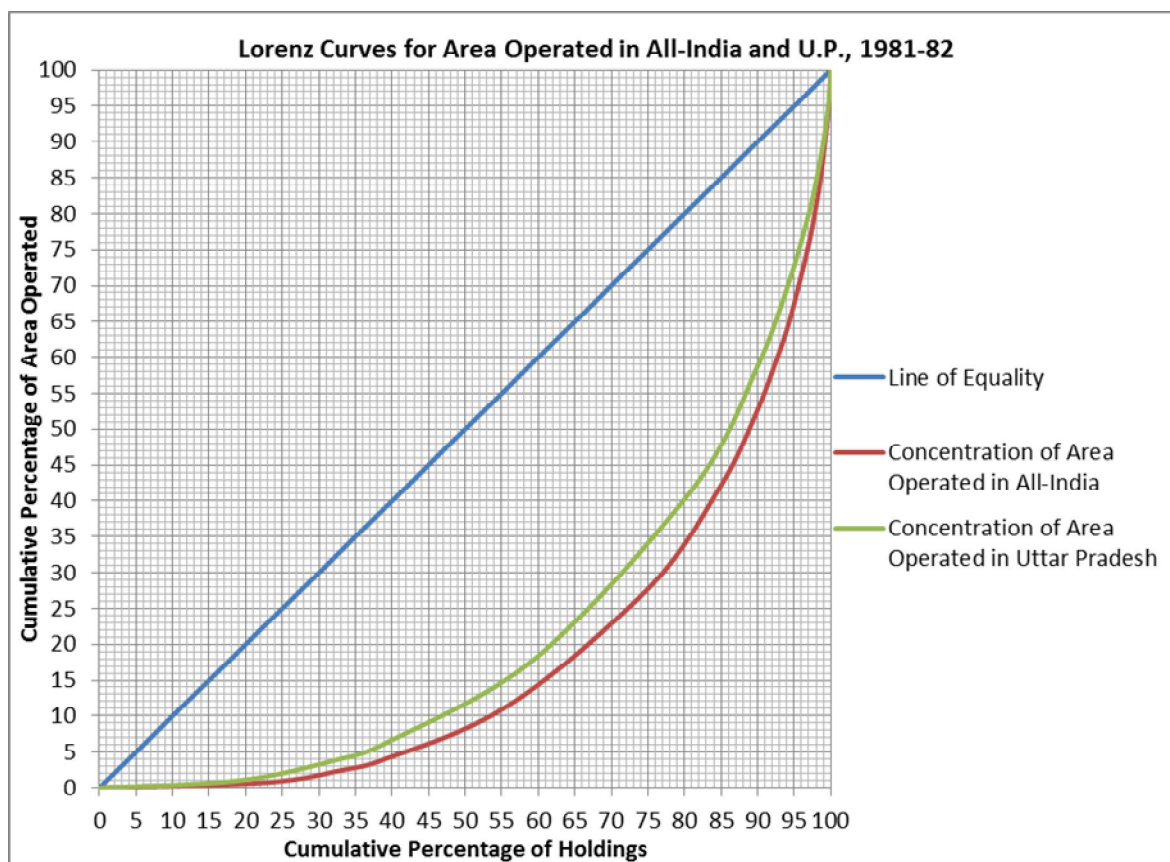


Table B₅: Cumulative Percentage Distribution of Operational Holdings and Area Operated by Size-Class of Operational Holdings in All-India and U.P., 1971-72

Size-class of Operational Holdings (ha.)	All-India		Uttar Pradesh	
	Cumulative Percentage Distribution of		Cumulative Percentage Distribution of	
	Holdings (X)	Area Operated (Y)	Holdings (X)	Area Operated (Y)
Upto 0.50	26.9	2.81	26.94	4.73
Upto 1.00	45.77	9.21	49.78	15.64
Upto 2.02	68.15	24.01	76.7	40.94
Upto 4.04	85.81	46.5	93.15	70.7
Upto 5.05	90.01	55.12	95.82	78.57
Upto 6.07	92.28	60.82	97.2	83.48
Upto 8.09	95.24	70.16	98.68	90.17
Upto 10.12	96.92	77.02	99.35	94.03
Upto 20.24	99.43	92.34	99.94	98.78
All Sizes	100	100	100	100

Source: NSS Report No. 215 (All-India), pp. 87 & 88 and State tables, vol.1, pp. 85 & 86.

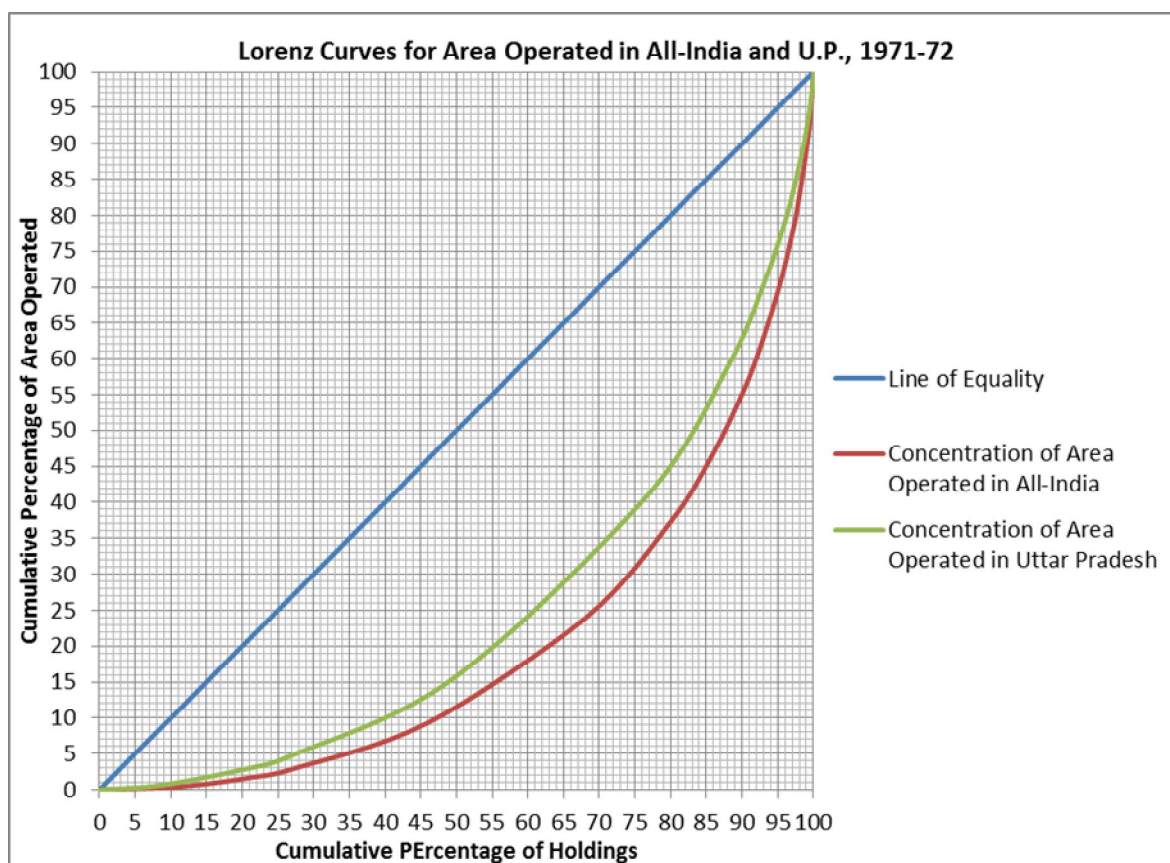
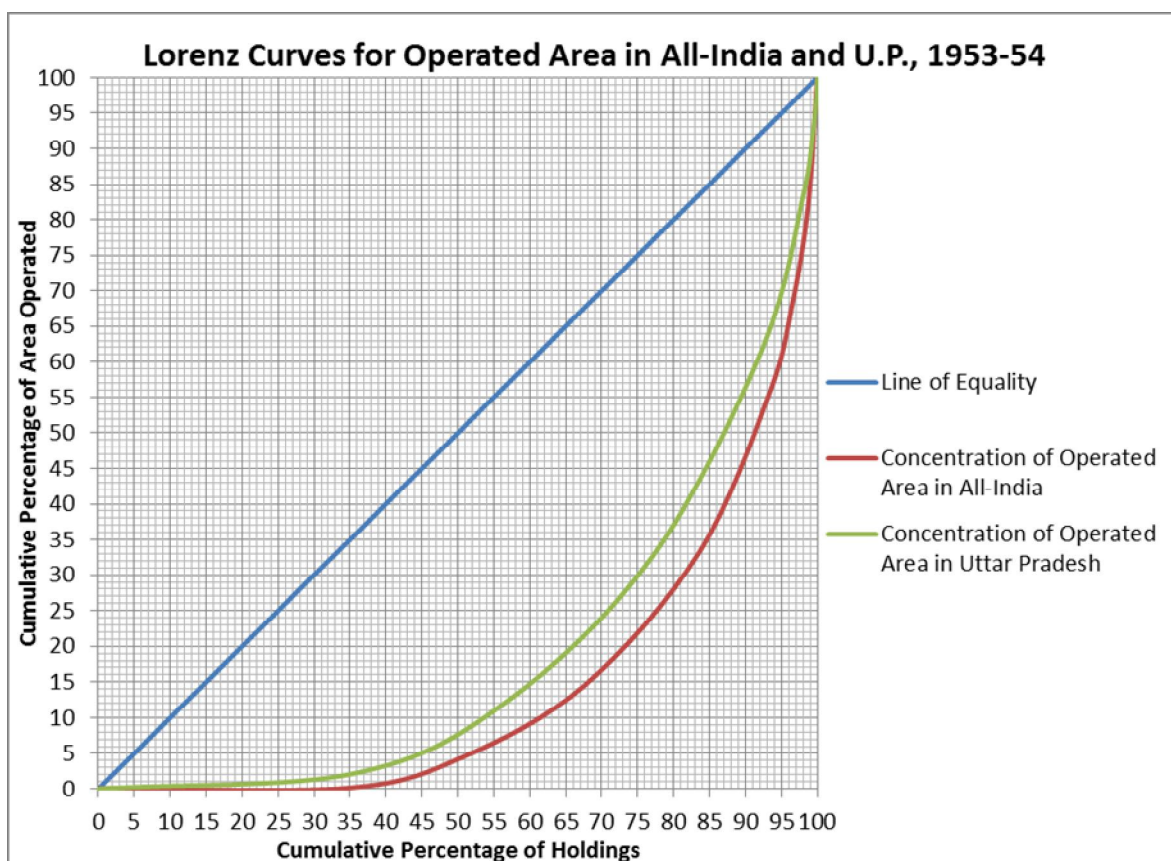


Table B₆: Cumulative Percentage Distribution of Operational Holdings and Area Operated by Size-Class of Operational Holdings in All-India and U.P., 1953-54

Size-class of Operational Holdings (ha.)	All-India		Uttar Pradesh	
	Cumulative Percentage Distribution of		Cumulative Percentage Distribution of	
	Holdings (X)	Area Operated (Y)	Holdings (X)	Area Operated (Y)
Upto 1.0	34.9	0.12	35.56	2.17
Upto 2.5	50.7	4.52	56.6	12.1
Upto 5.0	67.6	14.52	77	32.55
Upto 10.0	83.5	33.12	92.4	62.01
Upto 20.0	93.3	55.52	98.14	83.95
Upto 30.0	96.5	68.12	99.34	91.88
Upto 50.0	98.7	81.92	99.87	97.31
All sizes	100	100	100	100

Source: NSS Report No. 66. See pp. 13 and 15.



Chapter 6

Agrarian Crisis in the Economic Reforms Period

Introduction:

After WWII and the destruction it had wrought, finance capital was on the retreat globally, and Keynesian demand-management policies were followed widely to restore employment and growth in the advanced industrial world. Colonial and semi-colonial countries which became independent soon after the War ended, including India and China thus started their development under relatively favourable conditions and were able to follow growth strategies which aimed to raise the standard of life of their own populations, and to this end they both undertook expansionary fiscal policies and de-linked substantially from the global market by putting in place restrictions on trade. This was necessary to protect their new industries and to ensure food security for their populations.

Following the end of post-war boom and the oil shock of nineteen seventies, however the dominance of global financial interests re-asserted itself as the advanced countries faced renewed economic difficulties of high inflation combined with stagnation.¹ International terms of trade turned against the developing countries and particularly those dependent on energy imports started facing balance of payments difficulties. Many were obliged to seek financial accommodation from the international institutions which made the loans conditional on the borrowing countries following specific policies which were supposed to improve their balance of payments position. 'Neoliberalism' is the term used to describe the policy package favoured by international financial interests and institutions. This package entails restructuring of the economy based on fiscal and monetary contraction, privatisation of state owned assets, and trade liberalisation. The developing countries came under the sway of these policies first through 'debt-conditionalities' imposed on them, but later even when debt was fully repaid, continued with these policies which had become the dominant paradigm. The two pillars of neoliberal policies in the developing countries are the imposition of conservative fiscal and monetary policies which reduce aggregate demand on the one hand, and opening up of the economy to

¹ D. Harvey. 2005. *A Brief History of Neoliberalism*.

“free trade” by dismantling pre-existing trade and investment barriers on the other hand. At the same time, all past price support mechanisms in place for stabilisation of prices to peasant producers are sought to be dismantled.²

This policy package with its emphasis on “fiscal discipline” and “free trade” has an uncanny resemblance to policies followed when the country was a colony, with specific differences of course, since direct political control is no longer present. At that time, balanced budgets were the rule which in India meant surplus budgets since as we have seen a large part of the budget was not spent under normal heads but spent outside the country. Present day income-deflating fiscal policies in developing countries under reforms, it has been argued play a similar role of restricting mass demand and releasing scarce tropical land and other resources for producing the primary goods which advanced countries can never themselves produce owing to their climate, and it has the same adverse effect as earlier of reducing domestic per capita consumption of basic food staples as there is renewed export orientation.³ In practice, economic reforms in developing countries enable the industrialized countries to ensure their continued socio-economic and political domination of the developing world.

The extremely adverse impact of such ‘structural adjustment’ policies on the people of Latin America and Sub-Saharan Africa in nineteen eighties had been well documented already, by the time India launched on its reforms path from the early 1990s.⁴ Their experience with neoliberal economic policies clearly demonstrates how a change in their land use pattern dictated by the growing demands of Western countries for fruits and vegetables, flowers, poultry and meat products, transformed them from self-sufficiency to import dependency in staple foodgrains production on those imposing such policy changes.⁵ Not surprisingly, this has had grave

² U. Patnaik. 2013. ‘Some Aspects of the Contemporary Agrarian Question’. *Agrarian South: Journal of Political Economy*. Vol.1,3, pp. 233-254. Also see U. Patnaik. 1996. ‘Export-Oriented Agriculture and Food Security in Developing Countries and in India’ in U. Patnaik (ed.). 1999. *The Long Transition: Essays on political Economy*. pp. 351-416.

³ (i) U. Patnaik. 2007. ‘The Republic of Hunger’ in *The Republic of Hunger and Other Essays*. pp. 115-150. (ii) U. Patnaik. 2013. ‘Some Aspects of the Contemporary Agrarian Question’. *Agrarian South: Journal of Political Economy*. Vol.1,3, pp. 233-254.

⁴ G.A. Cornia, R. Jolly and F. Stewart. (Ed.). 1987. *Adjustment With A Human Face*. Vol.1.

⁵ M. Nanda. 1995. ‘Transnationalisation of the Third World State and Undoing of Green Revolution’. *EPW*. Vol. 30, 4. pp. PE20-PE30.

consequences for the agriculture of developing world in general and food security for the broad masses living in those countries in particular.

India was prescribed a similar package of economic reforms by the Bretton Woods institutions as the typical 'solution' to the temporary balance of payments difficulties which faced it in 1991 as a fall-out of the war in Kuwait and the burden of repatriating Indian citizens from there. The loan from the IMF of \$5 billion entailed the same 'conditionalities' as already seen in Africa and Latin America.⁶ Fiscal contraction through its reverse multiplier effects, reduces the growth rate of employment and incomes thus damping mass purchasing power which releases the resources for a renewed conversion of food grains growing land to the primary goods the advanced countries demand. This is reinforced by removal of the barriers to trade which had been earlier put in place to protect producers and consumers alike from rapid price changes. After a quarter century of the implementation of neoliberal economic policies by the Indian state, it is hardly a surprise that an agrarian crisis has been precipitated and continues to worsen to date.

A careful examination of the current situation prevailing in Indian countryside thus reveals a striking similarity with the colonial period in the manner in which surplus accumulation and its utilisation is taking place along with important differences reflecting the changed situation. The main new feature was the rise of the international agri-business corporations from the 1970s, which started contracting with local producers in developing countries for farm produce destined for the retail supermarkets in advanced countries, which started to become important. Contract farming came much later to India. From the late 1990s onwards many state governments started actively to facilitate the entry of these corporations for contracting with local farmers, with Punjab leading the way. Many state governments also modified their land laws to raise the ceilings on landholding to facilitate commercial crops production by corporates, and also repealed earlier provisions which had barred outsiders from acquiring local land. More recently, changes were made to the land acquisition act of 2013 which were clearly aimed at facilitating the process of farm land acquisition by domestic and international corporates. Such a land

⁶ C.P. Chandrasekhar and P. Patnaik. 1995. 'Indian Economy Under Structural Adjustment'. *EPW* Vol. XXX, 47. November 25. pp. 3001-3013.

policy change reflects a renewed attempt to alter the land use pattern of Indian agriculture for profitable exports by metropolitan agri-businesses at the expense of eroding the asset position of local farmers and at the expense of domestic food security. India's colonial history shows how disastrous the impact of colonial policies aimed at surplus extraction and its transfer to the metropolis was, on the broad masses of Indian cultivators. The current neo-liberal economic reforms policy package and the effect it is having on the people of India is a grim reminder of our colonial past.

The present chapter focussing on the last quarter century since the inception of reforms, critically analyses their stated theoretical rationale and the actual intention and impact of reforms. The first section reviews critically the theoretical arguments put forward by proponents of neoliberal economic reforms. The second section analyses the implications of economic reforms for India where as much as three-fifths of the total workforce depends on agriculture. Employment reducing macroeconomic policies are bound to have severe adverse effects for bulk of the toiling poor, particularly when viewed against the backdrop of declining public expenditure in rural India. The long-term trends in public expenditure on rural economy, farm and non-farm employment, poverty and consumption increasingly point towards an accentuating agrarian crisis manifested in a large number of peasant suicides which continue to date.

6.1. A Critical Review of Debates Underlying Economic Reforms in Indian Agriculture

The proponents of "free trade" argue that it would correct the 'policy bias' against agriculture and the 'export pessimism' that they claim existed in the development strategy that India adopted under planning from 1951. The state-led industrialization strategy with its emphasis on domestic food security and equitable growth, it is alleged, maintained an overvalued exchange rate and adverse terms of trade for agriculture, and is claimed to be primarily responsible for the agricultural underdevelopment. The focus had to be on "getting prices right" by opening agricultural sector to foreign trade.

The World Bank's argument behind this "get prices right" argument is typically provided in terms of Lipton's 'urban bias' theory and it has been discussed

by a number of authors.⁷ The argument runs as follows: a development strategy that promotes domestic industries behind high trade barriers on the one hand while restricting agricultural exports on the other tends to accelerate the shift of resources out of agriculture by lowering its profitability compared with that of industry: in other words, by turning the terms of trade between agriculture and industry so that agriculture is worse off than it would be if domestic prices were aligned with world prices.⁸ Not only would aligning domestic prices with world prices promote profitability in agriculture, but would also improve income distribution. Given that the agriculture-dependent population was on average poorer than the industry-dependent population, a shift in terms of trade in favour of agriculture that would result if world prices were allowed to prevail would lead to higher incomes in the agricultural sector as a whole and promote a better distribution of income between agriculture and industry.

The above argument put forward in the 1980s by the proponents of “free trade” is extremely dated by now and has been shown to be problematic on a number of counts. To begin with, there is serious factual error in the argument that global agricultural prices are necessarily higher than prices in developing countries under planning. On the contrary, global prices of primary products have always been highly volatile. It has been pointed out that as a result of competitive devaluation and deflation in over 80 indebted developing countries, there was a decline in absolute dollar unit values of primary products by over one-third to one-half between mid-1980s to early 1990s. Consequently, the purchasing power of developing countries’ exports fell by over 30 percent during 1985 to 1993 alone.⁹

Second, international trade is neither “free” nor “fair”. Even as the EU under Common Agricultural Policy (CAP) and the U.S. under deficiency payments programme continue to heavily subsidize their farmers by giving them direct income

⁷ (i) J. Ghosh. 1988. ‘Intersectoral Terms of Trade, Agricultural Growth and the Pattern of Demand’. *Social Scientist* Vol.16,4, April. pp. 9-27. (ii) A.S. Kahlon and D.S.Tyagi. 1983. ‘Agricultural Price Policy in India’. (iii) D.S. Tyagi. 1987. ‘Domestic Terms of Trade and their Effect on supply and Demand of Agricultural Sector’. *EPW. Review of Agriculture*. Vol.XXII,13. Mar. 28. pp. A30 –A36. (iv) D. S. Swamy and A. Gulati. 1986. ‘From Prosperity to Retrogression: Indian Cultivators during the 1970s’. *EPW*. Vol.21,25/26, June 21-28.

⁸ *World Development Report*. 1986. Part II, Ch. 4, p.61.

⁹ U. Patnaik. 2003. ‘On the Inverse Relation between Primary Exports and Food Absorption in Developing Countries under Liberalized Trade Regimes’ in J. Ghosh and C.P. Chandrasekhar (ed.) *Work and Well-being in the Age of Finance*. 2003. pp. 256-286. See p. 278.

support (included in the *green box* which lies outside the purview of GATT discipline) amounting to one-third to half of the total value of their agricultural output¹⁰, developing countries like India are being pressurized to restrict their domestic support to agriculture to 10 percent of the value of agricultural production capped at 1986-88 price levels.¹¹ Not only do advanced countries continue to give GATT compatible massive budgetary support to their farmers, but they also link their subsidy levels to global prices, increasing it in years of falling world prices and lowering it when commodity prices are high in global markets. The key condition that separates *green box* from *amber box* measures of domestic support to agriculture in Dunkel text is that while the former is thought to be minimally trade or production distorting and therefore can be retained, the latter by benefitting farmers in the form of lower prices for inputs or higher prices for outputs distort prices and hence, must be restricted. The discrimination in domestic support to farmers between the developed and developing world is best exemplified by the case of cotton. This is evident from the fact that while the U.S. cotton export prices were lower than their average cost of production by 50 percent between 1998 and 2003, India witnessed a removal of quantitative restrictions and reduction of import tariff from 35 percent in 2001-02 to 5 percent in 2002-03.¹²

The devastating impact of virtual dumping of cotton by the U.S. in international markets at depressed prices on the vulnerable cotton growing farmers of Vidarbha in Maharashtra is well known. The case of raw cotton also shows how the export of a raw-material in response to highly volatile global prices induces deindustrialization and loss of competitiveness of a sector such as textiles, which has higher value added than the production of raw material.¹³ The crashing of domestic prices as a result of import liberalization and the consequent destruction of peasantry

¹⁰ U. Patnaik. 1997. 'Political Economy of State Intervention in Food Economy'. *EPW*. Vol.32, 20/21, May 17-30. pp. 1105-1112.

¹¹ See (i) J. Mohan Rao and Servaas Storm. 2003. 'Agricultural Globalization in Developing Countries: Rules, Rationales and Results' in J. Ghosh and C.P. Chandrasekhar (ed.) *Work and Well-Being in the Age of Finance*. pp. 212-255. (ii) D. Nayyar and A. Sen. 1994. 'International Trade and the Agricultural Sector in India'. *EPW*, Vol.29,20, May 1. pp. 1187-1203. Reprinted in G.S. Bhalla (ed.) 1994. *Economic Liberalization and Indian Agriculture*.

¹² Srijit Mishra. 2009. 'Agrarian Distress and Farmers' Suicides in Maharashtra' in D.N. Reddy and S. Mishra (Ed.) *Agrarian Crisis in India*.

¹³ U. Patnaik. 1997. 'Political Economy of State Intervention in Food Economy'. *EPW*. Vol.32, 20/21, May 17-30. p.1110.

was by no means confined to cotton. Whether it be cotton growing farmers of Maharashtra, A.P. and Punjab or coffee, pepper and cardamom cultivators of Kerala, oilseeds producers of drought prone districts of A.P. and Karnataka or even the prosperous paddy and wheat growers from the “grain bowl of India”, falling global prices of primary produce since the mid-nineties hit the small and marginal peasants particularly hard.¹⁴

Contrary to the assertions of neoliberal reforms lobby, post-liberalization reality turned out to be different. Terms of trade, far from being favourable, turned against agriculture from the mid nineteen nineties and reached their lowest point in more than two decades in 2001. This is supported by the fact that between 1995-2001 (i.e., the period immediately after GATT '94), there was as much as 40-50 percent decline in unit dollar prices of all crops – cereals, cotton, jute, sugar, tea, coffee – and up to 80 percent decline in some oil crops.¹⁵ Clearly, the continuing farm support schemes both in the EU and the US have had a huge role to play in keeping agricultural prices way below their actual cost of production. Further, it has been argued that global prices are a construct. This is because they are determined by relatively small surpluses and deficits of agricultural produce which enter international markets. Therefore, even minor changes in tradable global output have the potential to cause huge changes in world prices of primary produce. This is more so when such commodities have low price elasticities, as is usually the case.¹⁶ Thus, not only do world prices not reflect actual costs of production and therefore, comparative advantage in production between trading nations, they are also extremely volatile as indeed the last two decades of trading in primary products have shown.

If falling international prices of agricultural commodities in the latter half of nineteen nineties ruined vast sections of the cultivating peasantry across Indian countryside, rising prices of food (as has been the trend since the last decade or so) actually harm rather than benefit the majority of rural poor who are net buyers of

¹⁴ D.N. Reddy and S. Mishra (ed.). 2009. *Agrarian Crisis in India*.

¹⁵ U. Patnaik. 2005. 'Liberalized Trade and Food Insecurity: The Indian Experience'. Keynote Presentation at Conference on *How to ensure food security – a major challenge for policy coherence*. Luxembourg, March 21-23. See Table 5 on p.14.

¹⁶ D. Nayyar and A. Sen. 1994. 'International Trade and the Agricultural Sector in India'. *EPW*, Vol.29,20, May 1. pp. 1187-1203. Reprinted in G.S. Bhalla (ed.) 1994. *Economic Liberalization and Indian Agriculture*.

foodgrains in the market. So, the argument of “get prices right” lobby that rural population will benefit from a favourable shift in terms of trade if only primary goods are subject to foreign trade has no merit and therefore must be disregarded. Clearly, such a view by pitting a single homogeneous group of rural population against a similarly placed urban homogenous group with identical interests completely ignores the fact of an increasing class differentiation that exists among the Indian peasantry.

Against the background of glaring socio-economic inequalities that already exist among Indian cultivators, the changing role of the state in the last quarter century of neoliberal economy has made matters worse. Along with this emphasis on “free trade”, the neoliberal economy simultaneously opposes demand management by the state via active intervention in the economy. Throughout the last quarter century or so of neoliberal economic policies, arguments have repeatedly been put forward by the advocates of such reforms justifying the ongoing cuts in agricultural input subsidies as they tend to ‘distort’ input prices. Such subsidies, especially food, fertilizers, credit and power are being viewed by them as incurring rising costs – as heavy “burden” on the exchequer. Public investment, that undoubtedly provided a stimulus to overall demand through stepping up expenditure in agriculture and allied activities, irrigation, power, rural development etc. in the eighties, thereby resulting in a rapid rate of growth of non-agricultural employment in rural areas,¹⁷ is now increasingly being seen as inhibiting private investment and is termed as “inefficient”.

This emphasis on ‘fiscal discipline’ explains the persistent efforts of the state to dismantle the public distribution system (PDS) of India. The crucial role that the PDS has historically played in safeguarding urban consumer’s interests by keeping the issue price of essentials like rice and wheat under control in times of rising prices such as during the seventies¹⁸ is well known. By procuring foodgrains at Minimum Support Prices (MSPs) that guarantees the growers a certain rate of return over and above their cost of production, it also assures a minimum level of income to cultivators especially in periods of falling agricultural output prices. This was true of

¹⁷ It has been reported that non-agricultural employment in rural India increased during the 1980s but declined sharply in the nineties. It fell from 4.56 percent during 1977-78 to 1.19 percent during 1990-91 to 1999-2000 (by UPSS status). See A. Sen. 2002. ‘Agriculture, Employment and Poverty: Recent Trends in Rural India’ in V.K. Ramachandran and M. Swaminathan (eds.) *Agrarian Studies: Essays on Agrarian Relations in Less Developed Countries*. Table 7, pp.404-409.

¹⁸ M. Swaminathan. 2000. *Weakening Welfare: The Public Distribution of Food in India*. pp.55-58.

the eighties and the more recent decade following the formation of WTO, since the mid-1990s.¹⁹ However, the twin objectives of food security and food grains price stability associated with the PDS are being undermined in the era of neoliberal economy which advocates a minimal role of the government. The argument put forward is that the system of administered pricing with its objectives of imparting relative price stability and providing a conducive climate to the growers by reducing uncertainties is ‘distorting’ the “free” and “fair” play of market forces.

This ongoing shift in emphasis on government’s role in the economy from active positive intervention in favour of farmers, to active negative intervention, follows what the World Bank calls a “desirable” set of policies for our agriculture. According to this view, not only are relative price movements and profitability ratios seen as sufficient for ensuring higher growth rates of agricultural output, but it is claimed that minimization of government intervention in agriculture by withdrawal of input subsidies, dismantling of PDS, state administered pricing system etc. are in fact the best ways of achieving the desired price movements!²⁰

The economic rationale behind the present shift in emphasis from real factors of expansionary public policies to stimulate demand, to ‘price incentives’ that this current economic reform policy package entails, has its foundation in faulty economic theories like the “Wages Fund” doctrine²¹, according to which the capacity to invest is limited by the fixed pool of savings that exist in an economy. This manifests itself in such views as ‘public investment crowds-out private investment’.²² The assumption underlying this theoretical understanding is that there is full employment of labour and resources. However, this assumption generally does not hold. The total level of savings in an economy is not fixed and depends amongst other factors on the level of income which can rise through investment in a situation where unutilised labour and

¹⁹ R. Thamarajakshi. 1990. ‘Intersectoral Terms of Trade Revisited’. *EPW*. Vol.25,13, March 31. pp. A48-A52.

²⁰ A. Sen. 1996. ‘Agricultural and Economic Liberalization: The Indian Outlook’ in P. Robb (ed.) *Meanings of Agriculture*. pp. 313-331. Also, see World Development Report. 1986. Part II: Trade and Pricing Policies in World Agriculture. Chapters 4 and 5.

²¹ M. Dobb. 1938. See ch. 4, viz., ‘Wages’ in *Theories of Wages*.

²² A. Gulati and S. Bathla. 2001. ‘Capital formation in Indian Agriculture: Revisiting the Debate’. *EPW*. Special Article. May 19. Also, see A. Gulati and A. Sharma. 1995. ‘Subsidy Syndrome in Indian Agriculture’. *EPW*. Sep.30.

capacity exists.²³ Moreover, in a world where foodstocks in excess of buffer norms remain with the FCI²⁴, public investment far from “crowding-out”, in fact “crowds-in” private investment via the multiplier effect which tend to operate more strongly in agriculture than anywhere else in the economy.

Further, despite an improvement in terms-of-trade for the agricultural sector in the latter half of the eighties, agricultural investment reduced in real terms by almost 20 percent since the peak reached in 1978.²⁵ This is attributable to the downward trend in public investment in agriculture since the late nineteen eighties. In other words, given strong linkage effects in agriculture, the decline in public investment in agriculture and in rural infrastructure had both direct and indirect effects through the concomitant decline in private investment.

We find that exclusive reliance is being placed nevertheless upon price incentives for stimulating growth which is assumed to lead to greater equity. Quite apart from the fact that such populist theories as the ‘Urban Bias’ conveniently ignore the glaring fact of class differentiation within the peasantry, it has been pointed out that “the case for ‘getting prices right’ is untenable, whether we look at it from the point of view of distribution, or ‘efficiency’ or growth”²⁶.

It has been argued that agricultural output, whether in a given period or over time, is not a function of prices alone. While in the short run, it depends on the capacity to produce (eg., the availability of water, quality of seeds, availability of fertilizers and technology of production), in the long run too, the magnitude of investment and hence, agricultural growth (within the existing institutional set up) depends crucially on public investment in infrastructure, irrigation etc.²⁷ In fact, it has been noted that shifting terms of trade in favour of agriculture does not stimulate investment and hence, output growth if a certain minimum rate of return is already

²³ A. Bhaduri. 1990. *Macroeconomics: The Dynamics of Commodity Production*. See especially Chapter 2, ‘The Principle of Effective Demand’. Revised Indian Edition.

²⁴ U. Patnaik. 2003. ‘Food Stocks and Hunger: The Causes of Agrarian Distress’. *Social Scientist*. Vol.31, Nos.7-8. July-Aug.

²⁵ A. Sen. 1996. ‘Agriculture and Economic Liberalization: The Indian Outlook’ in P. Robb (ed.) ‘Meanings of Agriculture’. Chapter 11. p.321.

²⁶ P. Patnaik. 1998. ‘Some Indian Debates on Planning’ in T.J. Byres (ed.) *The Indian Economy. Major debates since independence*. pp. 173-183.

²⁷ *Ibid.*

being earned on capital advanced in agriculture²⁸. This is a crucial point to note particularly in Indian agriculture where the level of profitability has been shown to be very high.²⁹ The average rate of profit, estimated on the basis of farm-level data collected in 1969 has been calculated to be 14.8 percent for the sample, when the value of land is included in the concept of capital advanced. The rate of profit rises with expanding scale of production (scale being measured in terms of gross value of output, Rs.000) – from 5.84 percent on the smallest to 23.93 percent on the largest scale of operation. Further, when the value of land is excluded from the definition of capital advanced, the average rate of profit was found to be considerably higher at 46.43 percent, this rate varying from 6.56 percent on the lowest to as high as 75.76 percent on the largest scale of operation³⁰.

Therefore, not only does World Bank's argument lose its credibility theoretically, even empirically, it has been shown that the net barter terms of trade between agriculture and non-agriculture do not have a statistically significant effect on aggregate agricultural output.³¹ While rising prices in themselves have been shown to have no impact on agricultural output and investment, they surely have an adverse impact on the pattern of income distribution across the countryside. The worsening of economic position of bulk of the rural masses comprising agricultural labourers, small and poor peasants in periods of rising agricultural prices essentially takes place through the economic process of profit inflation. This results in an erosion of their real incomes, the benefits of which accrue to the net-sellers of such primary commodities, namely the big landlords and rich peasants. Indeed, the real earnings of rural labour as shown by Rural Labour Enquiry fell sharply between 1963-65 and 1974-75, the period marked by a 30 percent rise in intersectoral terms of trade in favour of agriculture with base 1960. This decline was of the order of nearly one-third

²⁸ Ibid. See pp. 173-177.

²⁹ U. Patnaik. 1991. 'Capitalist Development in Agriculture: Note' in U. Patnaik (ed.) 'Agrarian Relations and Accumulation – The 'Mode of Production' Debate in India'. September 25, 1971.

³⁰ Ibid. These estimates of profit are based on primary data collected in 1969 from 66 big farmers spread over 10 districts from five states, viz., Orissa, A.P., Mysore, Madras and Gujarat. See Table 1 on p.43.

³¹ R. Thamarajakshi. 1977. 'Role of Price Incentives in Stimulating Agricultural Production in a Developing Economy' in D. Ensminger (ed.) *Food Enough or Starvation for Millions*. Also, see J. Ghosh. 1988. 'Intersectoral Terms of Trade, Agricultural Growth and the Pattern of Demand'. *Social Scientist*. Vol.16,4. April.

for rural male labourers and nearly half for rural female workers on an all-India basis.³²

Contrary to the widespread belief that falling agricultural prices imply an improvement in incomes and hence, living standards of net-buyers of foodgrains, we find that such periods are in fact marked by massive cuts in output and employment levels, thereby leading to a decline in incomes and hence, overall demand in the countryside. A shift in terms of trade against agriculture results in massive rural underconsumption brought about by income deflation of the vast majority of tillers, namely agricultural labourers and poor peasants. This is exactly what the available statistics tell us; during the period 1978-79 and 1984-85, when agricultural goods prices were falling, the current value of 'compensation of employees' in the primary sector goes up by 67.6 percent while the WPI and the CPIAL rise by 80 percent and 89 percent respectively. In other words, whichever deflator we use, the real value of the wage bill in the primary sector has fallen³³.

Thus, movements in terms of trade in either direction lead to a worsening of the economic position of the rural masses. While in a situation of rising agricultural prices relative to those of industry, it happens via the economic process of profit inflation; in periods of adverse terms of trade for agriculture, this worsening of income distribution takes place through income deflation. If this was true of a period when there was at least an attempt made by the state to stabilize such output-input price ratios by providing input subsidies, and stabilising output prices through state administered pricing, the situation in the ongoing reforms phase characterised by rising input prices on the one hand and highly volatile output prices subject to the vagaries of world markets on the other, can well be imagined!

The past two decades of trade liberalization in agriculture have only served to make our agrarian economy more vulnerable and incapable of defending itself in the global market. All available evidence suggests that the ongoing neoliberal reform policies have further accentuated the already existing socio-economic inequalities among Indian peasantry. The next section discusses some of the macroeconomic

³² U. Patnaik. 1988. 'Some aspects of development in the agrarian sector in independent India'. *Social Scientist*. Vol.16.,2. Feb.

³³ Ibid.

trends that reveal how damaging such policies have been for vast masses drawing their living from the soil.

6.2. Impact of Neoliberal Reforms on Indian Agriculture: Some Evidence from Agrarian India with Special Emphasis on Rural Uttar-Pradesh

The last quarter century of economic reforms has seen the unfolding of an agrarian crisis which is unprecedented in the post-Independence period. Every available indicator of living conditions of the rural population points not only towards greater socio-economic inequality but absolute decline for a large segment of the rural population. The distribution of land (owned and operated) which was already heavily skewed in favour of the rich minority at the top of rural class hierarchy, is becoming even more concentrated. There is inadequate employment generation in non-agriculture particularly in industry, so there is worsening of the problem of rapidly increasing reserves of unemployed labour in agriculture.

The process of ‘accumulation by dispossession’ whereby increasing concentration of capital is taking place in the hands of domestic and international corporates has resulted in large scale displacement of primary producers, particularly small and marginal peasants from their lands. In the absence of productive employment opportunities outside of agriculture, nature of state led capitalist development as it unfolded in post-colonial India on the one hand and neoliberal economic policies favouring surplus accumulation by elite on the other have meant that a structural transformation of the type witnessed in every developed economy of today continues to elude India.³⁴ Consequently, even after more than six decades of independence, structure of Indian workforce remains predominantly agrarian with more than 50 percent of the employed still dependent on agriculture for their livelihoods. (Table 6.1)

Let us begin by looking at the growing divergence between agriculture’s share in employment on the one hand and its contribution to GDP on the other. (Tables 6.1 and 6.2) Against the backdrop of a deceleration in agricultural output, this has obvious implications not only for the growing imbalance between agriculture and industry but also for the living conditions of those rural masses whose potential

³⁴ T.J. Byres. 2003. ‘Structural Change, the Agrarian Question and the possible Impact of Globalization’ in C.P. Chandrasekhar and J. Ghosh (ed.) *Work and Well-being in the Age of Finance*.

remains untapped owing to the absence of productive non-farm employment opportunities.

A. *Employment and income structure of Indian economy since the seventies:*

Table 6.1: Shifts in Sectoral Distribution of Workforce in terms of Usual (Principal + Subsidiary) Status in India

Sector	1972-73	1977-78	1983	1987-88	1993-94	1999-00	2004-05	2009-10
Agriculture	73.9	71.0	68.6	64.9	64.0	60.3	56.3	51.3
Industry	11.3	12.6	13.8	17.0	15.0	16.2	18.8	22.0
Services	14.8	16.5	17.6	18.1	21.1	23.4	24.9	26.7

Source: Papola, T.S. and Sahu, Partha Pratim. *Growth and Structure of Employment in India. Long-Term and Post-Reform Performance and the Emerging Challenge*. ICSSR. March 2012.

Table 6.2: Sectoral Share in GDP (constant at 1999-2000 prices) in India

Sector	1972-73	1977-78	1983	1987-88	1993-94	1999-00	2004-05	2009-10
Agriculture	40.9	40.4	37.1	31.7	30.0	25.0	20.2	15.2
Industry	23.3	23.7	24.3	25.2	25.2	25.3	26.2	25.9
Services	35.8	35.9	38.6	43.1	44.8	49.7	53.6	58.8

Source: Same as Table 6.1.

Clearly, the pace at which shift of workers from agriculture to industry and services has proceeded in Indian economy since independence has been dismal. Even after a quarter century of gaining independence, nearly three fourths of the workforce was dependent on agriculture with its share in GDP being a little over two-fifths then. During the next four decades or so following 1972-73, it is evident from Table 6.1 that the employment structure of the economy continues to be predominantly agrarian with more than half the workforce still drawing their living from land even as the share of primary sector in income has come down to 15.2 percent. This imbalance between the share of agriculture in employment and income means that labour productivity as measured by value added per worker in the sector has grown at a drastically reduced rate of 0.28 percent in the five years between 1998/9 to 2003/4 compared to a relatively much healthier growth rate of 1.16 percent in the five years preceding the introduction of economic reforms in Indian agriculture.³⁵ The services sector, with its share in national income amounting to nearly three-fifths of the total,

³⁵ Report of the Steering Committee on Agriculture and Allied Sectors for Formulation of the Eleventh Five Year Plan (2007-2012). Planning Commission. Government of India. April 15, 2007. See Table (6) on p.18.

has emerged as the fastest growing sector of the economy in terms of its contribution to GDP.

This extremely slow pace of structural transformation of the economy in terms of movement of workers from primary to secondary and tertiary sectors is a fallout of the nature of capitalist industrialization as it unfolded in independent India. With industry absorbing less than one-fourth of the workforce by 2009-10, it has evidently failed to create productive employment opportunities for the ever rising numbers rendered unemployed by an increasingly unviable agriculture. Even the jobs provided by the services sector have been associated with poor and uncertain remuneration as also deteriorating conditions of employment.³⁶

Not only has the pace of structural transformation of the economy in terms of shift of workforce from agriculture to industry been very slow, the neoliberal period has witnessed an increasing divergence in the rates at which sectors have been growing. Thus, while growth in industry and services taken together accelerated to around 7 percent during 1995-2005, agriculture witnessed a very sharp deceleration in the decade immediately after it was opened up to international trade. GDP growth rate in agriculture fell from 3.3 percent during 1980-1995 to 2 percent during 1995-2005.³⁷ As per planning commission's own admission, "over the last 50 years, deceleration in the growth of agricultural output was not witnessed for such a long period as seen after 1994-95."³⁸

B. Changing composition of agricultural output and a rapidly deteriorating scenario with respect to production in Indian agriculture

A careful examination of agricultural output of various sub-sectors shows that the current situation with regard to production is indeed alarming.

³⁶ C.P. Chandrasekhar and J. Ghosh. 2007. 'Recent employment trends in India and China: An unfortunate convergence?'. Macroscan. April 5th.

³⁷ Report of the Steering Committee on Agriculture and Allied Sectors for Formulation of the Eleventh Five Year Plan (2007-2012). Planning Commission. Government of India. April 15, 2007. See Table (1) on p.14.

³⁸ Ibid. See p.13.

Table 6.3: Growth Rates of Agricultural Output of Various Sub-Sectors at 1993-94 prices

Period	Crop Sector	Livestock	Fishery	Fruits and Vegetables	Non-Horticulture Crops	Cereals
1980-81 to 1989-90	2.71	4.84	5.93	2.42	2.77	3.15
1990-91 to 1996-97	3.22	4.12	7.41	5.92	2.59	2.23
1996-97 to 2003-04	0.61	3.76	4.28	3.66	-0.31	-0.11

Source: Report of the Steering Committee on Agriculture and Allied Sectors for Formulation of the Eleventh Five Year Plan (2007-2012). Government of India. April 15, 2007 quoted in Mehta, Jaya. The Crisis in Indian Agriculture. Revolutionary Democracy. Volume XVI. No.1. April 2010.

Table 6.3 shows the changing composition of agricultural production in the period of neoliberal reforms. A clear shift in production pattern away from foodgrains and in favour of ‘sunrise sectors’ comprising livestock, fisheries and horticulture can be seen from the 1990s. This is reflected in the high growth rates recorded by ‘sunrise sectors’ especially in the first half of the nineties on the one hand and a declining trend in the rate of growth of cereals and non-horticulture crops on the other. However, the period following trade liberalization in Indian agriculture since the mid-1990s has witnessed a virtual collapse of the growth of crop sector, with cereals and other non-horticulture crops registering negative growth rates. At the same time, growth of even ‘sunrise sectors’ which were the main source for acceleration in growth rate of agricultural output in initial years of reforms has decelerated since the latter half of the 1990s.³⁹

The long-term trends in foodgrains production, which we have already examined in Chapter 4, show that the economic reforms period has been marked by a sharp deceleration in the rate of growth of foodgrains output (Tables 4.2 and 4.5, Chapter 4). Our findings revealed that the decade and a half since the early nineteen nineties witnessed a steep decline in the growth of every single component of foodgrains viz., rice, wheat, coarse cereals as well as pulses compared to the four decades preceding it. For the first time since the mid-sixties has the decade after the mid-1990s seen a decline in both per capita net output and availability of cereals in rural India. Such a long term deceleration, especially in the growth of foodgrains output has obvious implications for domestic food security and is therefore a cause for serious concern.

³⁹ Ibid.

This drastic slowdown in the growth of agricultural production during the period of economic reforms is an inevitable fallout of a decline in cropped area due to the ongoing land grab by corporates on the one hand and falling productivity levels of most crops owing to declining public expenditure in agriculture on the other.

It must be noted that rapid increases in productivity of most crops during the Green Revolution period more than compensated for the decline in area under foodgrains so that the period did achieve self-sufficiency in the production of foodgrains. Despite the unevenness of growth of agricultural output, the crucial issue of domestic food security was nevertheless addressed in the pre-reforms green revolution period. However, the neoliberal economy has been marked by an absolute decline in cultivated area along with steadily declining productivity levels, both of which together have resulted in a sharply deteriorating trend in the growth of foodgrains output (See Chapter 4).

The process of forcible acquisition of fertile agricultural lands of Indian farmers for non-agricultural uses by the profit oriented national and international corporates has been a feature of the neoliberal economy and is corroborated by the reported trends in operated area over time by the NSSO. Their reports on landholdings clearly show that area under the plough has declined by as much as 14 percent in a mere decade covering the period 1991-92 to 2002-03. If we consider the two decades between 1991-92 and 2012-13, we find that total operated area has declined by nearly 25 percent (Table 6.4). In U.P. alone, more than 40,000 hectares of agricultural land has been put to non-agricultural uses per year between 2000 and 2009.⁴⁰

At the same time, increasing pressure of population on land has led to falling land-man ratios reflected in a steady decline in average operated area over time. As is evident from Table 6.4, not only has there been a marked decline in total operated area in agriculture during the neoliberal economy, even the number of cultivating households has reduced sharply from 80 percent to 69.7 percent between 1991-92 and 2012-13. The fact that fewer households are taking to cultivation during this period, when viewed against the background of a lack of employment generating growth in industry as also a sharply declining trend in employment growth rates within

⁴⁰ V. W. Ambekar and R.K. Singh. 2014. 'Land Use Scenario in Uttar Pradesh' in A. K. Singh and S. Mehrotra (ed.) *Land Policies For Equity and Growth: Transforming The Agrarian Structure In Uttar Pradesh*. Ch. 13. See Table 6.13.1 on p.259.

agriculture, points towards an increasingly unviable agriculture. More than anything else, it means that the vast reserves of labour rendered unemployed by a gradual withdrawal of the state from investing in the rural economy have nowhere to turn to for earning their livelihoods. The situation of agricultural households both in U.P. and India has further worsened in the decade after 2003, as our analysis of NSSO's data on *Situation Assessment Survey of Farming Households* will show (See Section VI, Chapter 11).

Table 6.4: Total and Average Area Operated as well as Percentage of Operating Households to all Rural Households in India, 1971-72 to 2012-13

Year / NSS Round	1971-72 26 th	1991-92 48 th	2002-03 59 th	2012-13 70 th
Total Operated Area (in million hectares)	125.68	125.1	107.65	94.48
Average Area Operated Per Holding (in ha.)	2.2	1.34	1.06	0.87
% of Operating Hhs. to All Rural Hhs.	73	80	69	69.7

Source: See NSS Report No. 407 for 26th and 48th Rounds and Report No. 492 for 59th Round. Also, for percentage of operating to all households, see NSS Report No. 493. p.10. For data of 2012-13 (70th Round), see NSS Report No. 571. Statement 5.2 on p. 34.

Needless to mention, the increasing unviability of farming in the neoliberal reforms era is closely linked to the decisive shift in the state's role in the economy, from active to passive, in the quarter century since the initiation of neoliberal economic policies in 1991. It has been widely documented by many economists that new economic reform policies have been deflationary, and that the rural sector has seen very sharp reduction in the state's outlays on rural development.⁴¹ Further, as macroeconomic demand deflationary policies such as restraint on central government expenditure, limits on credit expansion, wage restraint, etc., are being forced upon the third world developing economies like ours, the share of public capital formation in real gross capital formation in agriculture has registered a continuous decline throughout the nineties.

Below, we examine the trends and pattern of public expenditure in the rural economy of Uttar Pradesh based on the data collected by us from the budget documents of U.P.

⁴¹ C.P. Chandrashekhar and P. Patnaik. 1995. 'Indian Economy under 'Structural Adjustment'. *EPW*. Vol. 30, 47. pp. 3001-3013. Also, see P. Patnaik. 1999. 'The Performance of the Indian Economy in the 1990s'. *Social Scientist*. Vol.27,5-6.

C. Declining public expenditure in rural Uttar Pradesh in the Neoliberal Economy

With economic reform policies opposing planned economic development via active state intervention, it is hardly a surprise that sharp cutbacks in public spending on social and economic sectors have been registered since the nineteen nineties.

Table 6.5a: Budgetary Expenditure on Components of ‘Rural Economy’⁴² and its share in Combined Total Budgetary Expenditure (Rs. Crore) in Uttar-Pradesh, Current Prices

Components of ‘Rural Economy’ (RE)	1974-75 to 1979-80	1980-81 to 1989-90	1990-91 to 1999-2000	2000-01 to 2009-10
Agriculture and Allied Activities	75.0	237.8	980.1	2720.6
Agricultural Research and Education	n.a.	12.7	59.3	107
Minor Irrigation	73.4	212.8	424.6	607.0
Village and Small Industries	12.6	49.1	80.1	126.8
Rural Development	45.0	308.0	1100.1	3021.6
Co-operation	28.4	71.9	93.4	150.5
Total (Annual Average) Expenditure on ‘RE’	234.4	892.3	2737.4	6733.5
Share of ‘RE’ in total budgetary expenditure (in %)	14.6	16.3	12.7	2.0

Source: Reserve Bank of India Bulletin, Appendix II & IV, Various Issues and Budget Documents of Uttar Pradesh. See ‘Expenditure from Consolidated Fund’ for data on major and minor expenditure heads.

Note: 1.) Agriculture and Allied Activities includes Crop Husbandry, Soil and Water Conservation, Animal Husbandry, Dairy Development, Fisheries, Forestry and Wild Life and Food Storage and Warehousing. 2.) The budgetary expenditure figures on various developmental heads under ‘RE’ include revenue expenditure, capital expenditure plus loans and advances made by the state government.

Table 6.5b: Shares of Components of ‘RE’ in Total Budgetary Expenditure on ‘RE’ in Uttar-Pradesh (Percent)

Components of ‘Rural Economy’	1974-75 to 1979-80	1980-81 to 1989-90	1990-91 to 1999-2000	2000-01 to 2009-10
Agriculture and Allied Activities	32.0	26.7	35.8	40.4
Agricultural Research and Education	n.a.	1.4	2.2	1.6
Minor Irrigation	31.3	23.8	15.5	9.0
Village and Small Industries	5.4	5.5	2.9	1.9
Rural Development	19.2	34.5	40.2	44.9
Co-operation	12.1	8.1	3.4	2.2

Source: Same as Table 6.5a

⁴² Based on a study by P. Jha and N. Acharya, public expenditure on the ‘Rural Economy’ of U.P. includes spending on the following major developmental heads: (a.) Agriculture and Allied Activities (b.) Agricultural Research and Education (c.) Minor Irrigation (d.) Village and Small Industries (e.) Rural Development, and (f.) Co-operation. P. Jha and N. Acharya. 2011. ‘Expenditure on the Rural Economy in India’s Budgets since the 1950s: An Assessment.’ *Review of Agrarian Studies*. Vol.1, 2. July-Dec.

Table 6.5a shows that public expenditure in the 'Rural Economy' of U.P. has been falling since the 1990s. The decline has been particularly severe in the decade since 2000-01. The share of 'Rural Economy' in the total budgetary spending on U.P. increased from 14.6 percent during 1974-75 to 1979-80 to 16.3 percent during the 1980s. It has subsequently declined to 12.7 percent during the 1990s and was barely 2 percent of the total budgetary spending during 2000-01 to 2009-10.

If we look at the variation in the components of total developmental expenditure in U.P. between 1974-80 and 2000-10, we find that while the percentage shares of agriculture and allied activities and rural development have risen, those of minor irrigation, village and small industries and co-operation have registered a decline (Table 6.5b). The fall in the share of minor irrigation from 31 percent during 1974-75 to 1979-80 to a mere 9 percent during 2000-01 to 2009-10 is sharp and is a cause for serious concern. At the All-India level, the share of minor irrigation in total budgetary spending on 'Rural Economy' declined by more than 77 percent from 24.3 during the 1970s to 5.5 during 2000-01 to 2009-10.⁴³

This declining trend of public expenditure is by no means confined to rural U.P. but is equally true of Indian agriculture as a whole. Table 6.5c shows that the share of 'RE' as percentage of both total combined budgetary spending and GDP has been declining throughout the period of economic reform policies introduced since 1991.

Table 6.5c: Budgetary Expenditure on 'Rural Economy' (RE) and its share in combined budgetary expenditure and GDP, 1950-51 to 2009-10 in Rs. crore, at current prices, All-India

	1950-51	1960-61	1966-67 to 1969-70	1970-71 to 1979-80	1980-81 to 1989-90	1990-91 to 1999-2000	2000-01 to 2009-10
Total Expenditure on 'RE'	104.2	309.2	640.5	1,610.6	8,538.4	31,225.4	1,03,466.7
Share of 'RE' in total combined budgetary expenditure (in %)	11.4	12.0	9.9	9.5	10.9	10.8	9.7
Share of 'RE' in GDP (in %)	0.9	1.7	1.7	1.9	2.8	2.7	2.6

Source: Jha, P. and N. Acharya, 2011. 'Expenditure on the Rural Economy in India's Budgets since the 1950s: An Assessment.' See Table 1, p.140.

⁴³ Ibid. See Table 2, p.142.

The implication of such declining levels of public expenditure and falling output growth rates in agriculture has been a rise in the growth of rural unemployment. There is both fast growing open unemployment and fall in the number of days employed of the work force during the economic reforms period.⁴⁴ This is corroborated by the NSSO data on employment-unemployment over successive quinquennial rounds available since the early seventies.

D: Employment trends in rural Uttar Pradesh in relation to All-India

Quite expectedly, this decline in public spending has had an extremely adverse impact on employment generation in agriculture. Indeed, an examination of the trends in the rate of growth of employment based on NSSO data reveals a grim scenario. Table 6.6a shows a dramatic decline in employment growth rates in agriculture between 1993 and 2010 when compared with the two decades prior to the introduction of economic reforms. Specifically, there has been an absolute decline in the workforce employed in agriculture in the economic reforms period reflected in a negative growth rate of (-) 0.1 percent. In sharp contrast, we find that barring the period between 1983 and 1987-88 when the rate of growth of overall employment generation in agriculture fell below 1 percent (1987 being a drought year), never in the two decades prior to the introduction of economic reforms had the employment generation rate declined to such low levels.

A comparison of employment trends in Uttar-Pradesh with All-India shows a striking similarity between the two scenarios. The period since 1993-94 in both U.P. and All-India has witnessed a steep decline in the rate of growth of those employed in agriculture (Tables 6.6a & 6.6b). Further, both have registered a recovery in growth rates in the brief period between 1999-2000 and 2004-05 in an otherwise overall downward trend witnessed throughout the economic reforms period from 1993 to 2010.

⁴⁴ U. Patnaik. 2005. 'Liberalized Trade and Food Insecurity: The Indian Experience'. Keynote Presentation at Conference on *How to ensure food security – a major challenge for policy coherence*. Luxembourg. March 21-23.

Table 6.6a: Growth Rates of Total Employed Population in Agriculture by Usual Principal and Subsidiary Activity Status (UPSS), 1972-73 to 2009-10, All-India

Between NSSO Rounds	Year	Usual Principal and Subsidiary Status (UPSS)		
		(M+F)	M	F
27 th - 32 nd	1972-73 to 1977-78	1.7	1.4	2.3
32 nd - 38 th	1977-78 to 1983	1.4	1.0	2.2
38 th - 43 rd	1983 to 1987-88	0.4	0.7	-0.1
43 rd - 50 th	1987-88 to 1993-94	2.2	2.1	2.3
50 th - 55 th	1993-94 to 1999-2000	0.1	0.3	-0.02
55 th - 61 st	1999-2000 to 2004-05	1.3	0.4	2.6
61 st - 66 th	2004-05 to 2009-10	-1.7	0.03	-4.2
<i>Decadal Employment Growth Rates in Agriculture</i>				
27 th - 38 th	1972-73 to 1983	1.6	1.2	2.2
38 th - 50 th	1983 to 1993-94	1.4	1.5	1.3
50 th - 61 st	1993-94 to 2004-05	0.7	0.3	1.2
<i>Longer term Employment Growth Rates in Agriculture</i>				
27th to 50th	1972-73 to 1993-94	1.5	1.4	1.8
50th to 66th	1993-94 to 2009-10	-0.1	0.2	-0.5

Source: For WPRs, see NSS Report Number No. KI (66/10), p.52 for 66th round; NSS Report No. 515, p.96 for 61st round; NSS Report No. 455, p.14 for WPRs of all the quinquennial rounds between 1972-73 and 1999-2000.

Table 6.6b: Growth Rates of Total Employed Population in Agriculture by Usual Principal and Subsidiary Activity Status (UPSS), 1977-78 to 2009-10, Uttar-Pradesh

Between NSSO Rounds	Year	Usual Principal and Subsidiary Status (UPSS)		
		(M+F)	M	F
32 nd - 38 th	1977-78 to 1983	2.9	1.8	5.5
38 th - 43 rd	1983 to 1987-88	-0.4	0.4	-2.2
43 rd - 50 th	1987-88 to 1993-94	1.7	1.6	1.8
50 th - 55 th	1993-94 to 1999-2000	-0.2	-0.3	0.5
55 th - 61 st	1999-2000 to 2004-05	2.3	0.7	5.3
61 st - 66 th	2004-05 to 2009-10	-1.5	0.2	-4.8
<i>Longer term Employment Growth Rates in Agriculture</i>				
32 nd - 43 rd	1977-78 to 1987-88	1.4	1.2	2.0
32nd - 50th	1977-78 to 1993-94	1.5	1.3	1.9
50 th - 61 st	1993-94 to 2004-05	1.0	0.1	2.7
50th to 66th	1993-94 to 2009-10	0.2	0.2	0.3

Source: For WPRs, see Sarvekshana. Vol.9. No.4. April 1986 for 32nd round. Pp.S-114-116; For 38th round, Sarvekshana. Vol.11. No.4. April 1988. p.23; For 43rd round, NSSO Special Report No.1.Key Results of Employment and Unemployment Survey: All-India (Part-I); For 50th round, see NSS Revised Report No. 406, p.29; For 55th Round, Report No. 455, p.14; For 61st and 66th rounds, same as All-India.

Given that state repression in terms of deflationary cuts on the Indian peasantry during this quinquennium was probably at its peak in recent times, the reversal of downward trend in agricultural employment during this period of neoliberal reforms seems somewhat puzzling. However, a careful observation of trends based on a study of existing literature on the subject highlights a number of interesting points. First and the foremost, the slight recovery in the rate of growth of agricultural employment during 1999-2000 to 2004-05 was primarily driven by self-employed women workers on own farms.⁴⁵ This can be seen in the high growth rates of women workforce recorded during this period in both rural Uttar Pradesh as well as All-India. At the same time, it has been pointed out that wage employment in Indian agriculture actually fell quite sharply from 1.06 percent between 1993-94 and 1999-2000 to a negative (-) 3.18 percent during 1999-2000 to 2004-05.⁴⁶

Equally striking is the subsequent collapse of the earlier observed increase in the growth rate of women workforce in agriculture in the latter half of the same decade. Not only has there been a significant absolute decline in agricultural women workers, the rate of growth of male workers in agriculture too has fallen. Consequently, the total population employed in agriculture during the latter half of the decade has registered a steep decline, both in U.P. and All-India.

It has been argued that as agriculture became increasingly unviable in the neoliberal reforms era, male workers moved out of agriculture in the hope of securing productive and remunerative non-farm employment, leaving household women behind to take care of their meagre holdings. This is what explains a quantum leap in the rate of growth of women workers in agriculture during 1999-2000 to 2004-05. Also, there is evidence of some increase in non-agricultural employment (both rural and urban) during this period.⁴⁷ However, poor remuneration, growing uncertainty associated with increasing casualization of workforce and inadequate employment generation outside of agriculture ensured that this apparent recovery was indeed a shortlived phenomenon.

⁴⁵ C.P. Chandrasekhar and J. Ghosh. 2007. 'Recent employment trends in India and China: An unfortunate convergence?'. *Macroscan*.

⁴⁶ *Ibid*.

⁴⁷ *Ibid*. It has been noted that while rural non-agricultural employment grew from 2.26 percent between 1993-94 and 1999-2000 to 5.27 percent between 1999-2000 and 2004-05, total (rural+urban) non-agricultural workforce increased from 2.53 percent to 4.66 percent.

Therefore, as male workforce returned to the villages and resumed work on their tiny holdings, women withdrew from farm work to tend to domestic household activities. This is what explains the dramatic decline in female workforce in agriculture in the subsequent quinquennium, viz., 2004-05 to 2009-10.

It must be noted that the collapse in the rate of growth of female agricultural workforce was accompanied by a simultaneous decline in the growth rate of male workforce in rural U.P. as well as in rural India. The decline in growth rates was so severe that there was a significant absolute fall in the number of people employed in agriculture. The reasons for this are not hard to find. The process of 'accumulation by dispossession' aided by neoliberal state policies has displaced huge numbers of small and marginal farmers from their holdings who, in the absence of non-farm productive employment opportunities only end up adding to the already existing vast reserves of unemployed labour in the economy.

Today, we are witnessing a situation where landholding structure continues to remain heavily skewed in favour of a small minority at the top even as total area under the plough has registered a sharp decline. As input subsidies like fertilizers and power are gradually being withdrawn, values of output-input cost ratios have been declining,⁴⁸ thereby making cultivation more and more economically unfeasible for a large number of poor, small and even a section of middle farmers.

The situation is further worsened by the ongoing financial reforms that have implied reduced access to low cost credit through formal sources of credit supply like commercial and co-operative banks in the rural sector.⁴⁹ An inevitable fallout of this has been an increase in indebtedness of the marginalized comprising the landless and semi-landless agricultural labourers as well as small and poor peasants, who have been forced to depend on credit supplied at extremely high interest rates by the local moneylenders even for meeting their consumption as well as working capital requirements, especially since the 1990s.

⁴⁸ A. Sen and M.S. Bhatia. 2004. *Cost of Cultivation and Farm Income: A Study on the Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in India and of Results from it.*

⁴⁹ M. Swaminathan and V.K. Ramachandran. 2002. 'Rural Banking and Landless Labour Households: Institutional Reform and Rural Credit Markets in India'. *Journal of Agrarian Change*. Vol.2,4. pp. 502-544.

Against this overall background of falling output and employment, and hence demand of the broad masses of the rural poor in the countryside, there has been a sharp decline in per capita output and availability of foodgrains in India since the mid-1990s. While the per head absorption of foodgrains in India declined by an annual rate of 1.6 percent between the triennium ending 1991-92 and 1997-98, this decline was of the order of 10.9 percent in just four years' time starting from the triennium ending 1997-98 to the biennium ending 2001-02.⁵⁰ Such has been the impact of these macroeconomic contractionary policies that the average level of per capita cereal availability at 147.7 kg. per annum for the years 2006-10 is even below the 148.5 kg. that existed in colonial India during the difficult inter-war period of 1939-44, a period which also witnessed the Bengal famine (See Table 4.1, Chapter 4 & Table 3.2, Chapter 3)

In other words, the past two decades or so have witnessed a deep, pervasive agrarian crisis in India.⁵¹ The period has seen a sharp decline in total daily calorie intake for all foods (foodgrains + non-foodgrains) in both rural and urban areas, the decline being much sharper for rural areas. For the first time since independence, by 1999-2000, average rural calorie intake per capita fell below urban average intake, which had been rising in the 1990s.⁵²

It is then no wonder that signs of distress can be both seen and heard from all over the country throughout the 1990s.⁵³ This is reflected in a spate of farmers' suicides across regions witnessed particularly in the last quarter century of neoliberal economic reforms.⁵⁴ Be it the cotton growing farmers of Andhra-Pradesh or the irate potato growers of Maharashtra, Uttar-Pradesh and Punjab, mass discontent and rebellion seems to have gripped our countryside in the last few years. Incidents of produce dumping on the highway due to lack of buyers by the surplus wheat, paddy and sugarcane growing farmers of Punjab and U.P. are increasingly being reported.

⁵⁰ U. Patnaik. 2005. 'Liberalized Trade and Food Insecurity: The Indian Experience'. Keynote Presentation at Conference on *How to ensure food security – a major challenge for policy coherence*. Luxembourg. March 21-23. See Table 7 on p. 16.

⁵¹ D. N. Reddy and S. Mishra (ed.). 2009. *Agrarian Crisis in India*.

⁵² NSS Report No. 471. Nutritional Intake in India, 1999-2000. July 1999-June 2000. p. 35.

⁵³ S. Pathy. 2003. 'Destitution, Deprivation and Tribal Development'. *EPW*. Also, 'Undernutrition and Starvation Deaths: An Inquiry'. May 2003. *EPW*. Also see M. Assadi. 1998. 'Farmers' Suicides: Signs of Distress in Rural Economy'. *EPW*.

⁵⁴ R. Padhi. 2012. *Those Who Did Not Die. Impact Of The Agrarian Crisis on Women In Punjab*.

It is precisely against this rapidly worsening situation in our agrarian sector that the official explanation of declining poverty levels, especially in rural areas, in terms of “voluntary diversification” of consumers’ consumption basket away from cereals and in favour of non-foodgrains like fruits, vegetables, fish etc. for **all** expenditure groups does not carry much weight.

An analysis of trends in rural poverty since the early nineteen seventies based on large sample survey rounds of the NSSO on consumption and expenditure pattern of households shows how futile the official claims of declining poverty in the neoliberal reforms era are.⁵⁵

E: Poverty trends in rural Uttar Pradesh in relation to All-India

In Tables 6.7a and 6.7b, we examine two concepts of poverty lines and the estimates of rural poor corresponding to those poverty level incomes in Uttar Pradesh and All-India. The **first** is planning commission’s ‘**Official poverty line**’ (OPL) which serves as the basis for identifying the ‘poor’ in the country. This was defined in 1973-’74 as the aggregate monthly per capita expenditure (MPCE) on all goods and services whose food expenditure part allowed the consumer to purchase a consumption basket that would satisfy the daily minimum per capita calorie ‘norm’ of 2400 and 2100 in rural and urban areas respectively. Thus defined, 56.5 percent of the rural population was found to be officially poor in U.P. and 56.4 percent in India in 1973-74.

However, it has been pointed out that 2200 calories was the actual norm accessible with the official poverty line of Rs.49. The 2400 calorie norm required Rs.56 as the poverty line, and about 72 percent of persons in rural India were below this (see Table 6.7b).⁵⁶ Furthermore, the official poverty lines have over time been obtained simply by applying a price index to the 1973-74 poverty line expenditure or MPCE of Rs.49 (for rural India) to adjust for price changes with no consideration for the corresponding nutritional norm at those MPCE levels. Tables 6.7a and 6.7b show

⁵⁵ For a debate on the methodology of poverty estimation, see (i) U. Patnaik. 2007. ‘Neoliberalism and Rural Poverty in India’. *EPW*. Vol. 42,30. pp. 3132-3150. (ii) J. Mehta and S. Venkatraman. 2000. ‘Poverty Statistics: Bermicide’s Feast’. *EPW*. Vol. 35,27. pp.2377-2379 + 2381-2382.

⁵⁶ (i) U. Patnaik. 2007. ‘Neoliberalism and Rural Poverty in India’. *EPW*. Vol. 42,30. See Table 2 on p. 3138. (ii) U.Patnaik. 2013. ‘Poverty Trends in India 2004-05 to 2009-10. Updating Poverty Estimates and Comparing Official Figures’. *EPW*. Vol.48,No.40,Oct.

that the minimum calorie intake levels accessible at the official poverty lines have been falling over time, both in U.P. and All-India. While the calorie norm declined from 2200 kcal. in 1973-74 to 1820 in 2004-05 and further to 1780 in 2009-10 at the All-India level, it fell by 530 calories in U.P., from 2380 to 1850 between 1977-78 and 2009-10. During the same period, the 'OPL' or MPCE based on URP (Uniform Recall Period) distribution required to access these declining calorie intake levels increased from Rs.49 to Rs.557 in rural India, and from Rs.54 to Rs.531 in rural U.P. As a result of lowering of the nutrition norm over time, the official poverty in rural India has dropped by nearly 60 percent, from 56.4 to 23 between 1973-74 and 2009-10. In U.P., the percentage of rural persons below 'OPL' (based on URP distribution) has declined from 47.6 to 22.5 between 1977-78 and 2009-10.

The above estimates of declining rural poverty are Planning Commission's estimates made on the basis of methodology that was recommended by the Lakdawala Committee (1993). Amidst growing criticism of these official estimates which were found to be too low and clearly needed to be raised, an expert group under the chairmanship of Prof. Suresh D. Tendulkar was set up in December 2005 to review the methodology of official poverty estimation in India. According to the updated official estimates of rural poverty based on Tendulkar methodology which are exclusively based on MRP (Mixed Recall Period) distribution, poverty lines (OPL-T) for the years 2004-05 and 2009-10 were revised upwards to Rs.435.14 and Rs.663.7 for U.P. and Rs.446.7 and Rs.672.8 for All-India respectively.⁵⁷ The corresponding poverty ratios (OPR-T) for the same years (in %) were accordingly raised from the earlier estimates of 33.4 and 22.5 to 42.7 and 39.4 in rural U.P. and from 28.3 and 23 to 41.5 and 33.8 in rural India respectively. These revised official estimates using Tendulkar methodology are all on MRP basis, while the unrevised official estimates are all on URP basis.

It is important to emphasise that despite the upward revision in the revised official rural poverty estimates, calorie intake even at OPL-T continues to decline from 1930 to 1870 at the All-India level and from 2020 to 1930 in rural U.P. between 2004-05 and 2009-10. Hence, rural poverty continues to fall even at the new official

⁵⁷ (i) Press Note on Poverty Estimates. Government of India, Planning Commission. January 2011. (ii) Press Note on Poverty Estimates, 2009-10. GOI, Planning Commission, March 2012.

poverty lines during the neoliberal reforms period, as is shown by Tables 6.7a and 6.7b. In Planning Commission's own words, "It is important to emphasise that while the higher estimate of rural poverty using the Tendulkar committee methodology means more people in rural areas are below the new poverty line, **it does not mean that rural poverty has increased compared to what it was a decade earlier.**"⁵⁸

Those in favour of neoliberal economic reforms justify and view the sharp decline in official estimates of rural poverty since the 1990s as a positive impact of the implementation of such reforms. The fall in average daily calorie intake over time even as real per capita consumption expenditures have increased has been referred to as the calorie consumption puzzle and has been explained officially in terms of voluntary diversification of consumers diet away from cereals and in favour of non-foodgrains like fruits, vegetables, milk, eggs, fish, nuts etc. for **all** expenditure groups.⁵⁹ Another explanation for declining calorie levels over time has been put forward by some academics in terms of reduced calorie requirements due to lower levels of physical activity resulting from increased mechanisation and improvements in the health environment.⁶⁰

However, both these explanations for declining poverty in terms of dietary diversification as well as declining calorie needs have been criticised on the grounds that they are not supported by observed empirical evidence that exists across countries and are therefore, factually incorrect.⁶¹ It has been argued that it is fallacious to reason that the declining cereal consumption in the face of rising incomes reflects a diversification of diets. This is because *total* cereal consumption includes both *direct* (in the form of foodgrains) and *indirect* (in the form of feedgrains embodied in animal products) consumption, and should rise, not fall as average income rises. Therefore, "the higher the average income, the higher is the average cereal consumption, the higher is the share of indirect consumption (mainly as feed) in the total and the higher is average calorie intake. Thus, "there exists no inverse relation between average

⁵⁸ Ibid.

⁵⁹ Planning Commission. 1993. Report of the Expert Group on Estimation of Proportion and Number of Poor. See pp. 19-20 & Tables 3.9 to 3.13 on pp. 27-31. Also see C.H.H. Rao. 2000. 'Declining Demand for Foodgrains in Rural India: Causes and Implications'. *EPW*. Vol.35,4. Jan.22-28, pp.201-206.

⁶⁰ A. Deaton and J. Dreze. 2009. 'Food and Nutrition in India: Facts and Interpretations'. *EPW*. Vol. 44,7. Feb.14-20, pp. 42-65. Also see C.H.H Rao. 2000. 'Declining Demand for Foodgrains in Rural India: Causes and Implications.' *EPW*. Vol.35,4. Jan.22-28, pp.201-206.

⁶¹ U. Patnaik. 'On Some Fatal Fallacies'. *EPW*. Vol.45,47. pp. 81-87. Nov.20.

cereal consumption and per capita income across countries; on the contrary the demand for cereals is directly related to levels of per capita income.”⁶² This is empirically supported by the fact that advanced countries with higher levels of income and mechanisation than developing countries, have much higher levels of per capita *total* cereal/calorie intake compared to third world countries like India.

Further, the official and independent claims of declining rural poverty during the economic reforms period have been sharply contested by economists using the direct method of poverty estimation.⁶³ Planning commission’s poverty estimates have been criticised both on the grounds of methodological problems inherent in the official estimates of rural poverty as well as their inconsistency with adverse macroeconomic trends prevalent in the Indian economy, particularly since the mid-1990s.⁶⁴ According to these direct approaches to poverty estimation centred on an invariant nutrition standard, the fact that the calorie norm has not been kept constant in the official estimates of poverty means that the planning commission’s definition of poverty itself has changed, which makes their estimates non-comparable over time. The direct method argues that the official estimates of poverty show a decline precisely because the initial consumption standard of 2400 and 2100 calories per capita per diem in rural and urban areas that was used to define the ‘poor’ in 1973-74 by the planning commission, has not been kept constant but has been continuously lowered over time. The same is true of revised official poverty estimates that are based on Tendulkar methodology which also show declining calorie intake levels between 2004-05 and 2009-10 at the revised poverty lines. Given the definition of poverty line, **nutrition centred approaches to poverty estimation show that contrary to the rapidly declining estimates of officially poor, rural poverty has risen sharply during the economic reforms period.**

The **second** concept of poverty line and the estimates of rural poor corresponding to it that we use in Tables 6.7a and 6.7b is Utsa Patnaik’s **‘Direct**

⁶² Ibid.

⁶³ (i) U. Patnaik. 2007. ‘Neoliberalism and Rural Poverty in India’. *EPW*. Vol. 42,30. pp. 3132-3150. (ii) U. Patnaik. 2013. ‘Poverty Trends in India 2004-05 to 2009-10. Updating Poverty Estimates and Comparing Official Figures’. *EPW*. Vol.48, No.40, Oct. (iii) J. Mehta and S. Venkatraman. 2000. ‘Poverty Statistics: Bermicide’s Feast’. *EPW*. Vol. 35,27. (iv) U. Patnaik. 2010. ‘A Critical Look at Some Propositions on Consumption and Poverty’. *EPW*. Vol.45,6, Feb.6. pp. 74-80. (v) U. Patnaik. ‘On Some Fatal Fallacies’. *EPW*. Vol.45,47. pp. 81-87. Nov.20.

⁶⁴ Ibid.

Poverty Line. The 'Direct Poverty Line' or 'DPL' refers to the monthly per capita expenditure (MPCE) on all goods and services, whose food spending part allowed the consumer to access the earlier official minimum nutrition norm of 2400 kcal. per capita per day in rural areas. Three such 'direct poverty lines' (in Rs.) have been used, which give the consumer access to specified calorie intake levels of 2400, 2200 and 1800 kcal. respectively. The poverty line will differ depending on whether Uniform Recall Period (URP) or Mixed Recall Period (MRP) is taken. We have used the URP distribution of MPCE (except where specified as MRP basis) to estimate the 'direct poverty lines' for U.P. The URP distribution, which uses a reference period of 30 days for all items, was required for maintaining comparability with estimates for years prior to 2004-05, since there was no MRP distribution of MPCE for earlier years. The poverty ratios corresponding to 'DPLs' for Uttar- Pradesh in Table 6.7a have been obtained following U. Patnaik's method of combining NSS data from two different reports in each of its quinquennial rounds on consumer expenditure. These are the reports on household consumer expenditure in India which also provides state level data on the distribution of persons by expenditure classes and their average expenditure or MPCE, and the report on nutritional intake which gives us data on the average calorie intake of the same distribution of persons by the same expenditure classes, both at All-India and state level.⁶⁵

Following the above direct method of poverty estimation, we find that in sharp contrast to the official claims of declining poverty, the percentage of rural poor below all three specified calorie norms in Tables 6.7a and 6.7b has increased in reality during the period of neoliberal economic reforms, both in U.P. and All-India. The percentage of rural poor below 2400 calories in U.P. has increased by 13.5 percent, from 50 to 63.5 in the pre-economic reforms period between 1977-78 and 1993-94, and by more than 25 percent, from 63.5 to 89 in less than two decades of neoliberal economic reforms during 1993-94 to 2009-10. The Direct Poverty Ratios (DPR < 2200 kcal.) in U.P. increased by 10 percent, from 35.5 to 45.5 between 1977-78 and 1993-94, and by as much as 26.5 percent, from 45.5 to 72 between 1993-94 and 2009-10. If we look at the percentage of rural poor below 1800 calories (an indicator of the

⁶⁵ U. Patnaik. 2007. 'Neoliberalism and Rural Poverty in India'. *EPW*. Vol. 42,30. p.3136. See Appendix to the chapter for detailed tables on calorie intake per diem per capita and cumulative percent of persons by MPCE (Rs.) for U.P., from the various quinquennial rounds of the NSS on consumer expenditure. The results in Table 6.7a have been obtained on the basis of this data.

depth of poverty), we find that while it increased by less than one percent in the former period, there was an increase by as much as 7.5 percent, from 11.5 to 19 during the latter period of economic reforms. Exactly similar trends can be seen at the All-India level from Table 6.7b.

The 'direct poverty line' or MPCE (U-30) required to access the initial consumption standard of 2400 calories per capita is far higher at Rs.790 for rural India and Rs.566.5 for rural U.P. in 2004-05. The 'OPL' for All-India at Rs.356 is only 45 percent of what is actually needed to access 2400 calories per capita in 2004-05. Similarly, the 'OPL' for U.P. is a mere 65 percent of the actual MPCE or 'DPL' required to access the 2400 calorie norm in 2004-05. A comparison of 'OPL' with 'DPL' required to access a lower calorie norm of 2200 for the same year reveals that the former is still only 63 percent and 75 percent of the latter for All-India and U.P. respectively.

If we compare DPL (< 2400 kcal.) with OPL for the year 2009-10, we find that the official poverty lines (on URP basis) at Rs.531 and Rs.557 for U.P. and All-India are a mere 43 percent and 35.5 percent of the direct poverty lines estimated at Rs.1230 and Rs.1570 respectively for U.P. and India. When we compare the same DPLs (< 2400 kcal.) for the same year with the revised official poverty lines (OPL-T) at Rs.632 and Rs.645 for U.P. and All-India, we find that the latter is still significantly lower than the former. The updated poverty lines (OPL-T) on URP basis work out to only 51 percent and 41 percent of the DPLs for rural U.P. and rural India in 2009-10. Further, a comparison of OPLs (unrevised) with DPLs of Rs.895 and Rs.1075 required to access a lower calorie norm of 2200 for U.P. and India reveals that the former continues to be only 59 and 52 percent of the latter. Even the higher revised official poverty lines (OPL-T) in 2009-10 are only 70 percent and 60 percent of the DPLs (< 2200 kcal.) for U.P. and All-India respectively. This shows the extent to which even the new revised official poverty lines using Tendulkar methodology underestimates the minimum per capita expenditure required to access specified calorie levels and therefore, do not reflect the actual extent of rural poverty that prevails both at the state and national level.

Further, the gap between 'OPL' and 'DPL' (below 2400 and 2200 calorie norms) has been increasing over time. For instance, OPL as a percentage of DPL

(below 2400 kcal.) in rural India has decreased from 87.5 in 1973-74 to 72 percent in 1983, and has continued to decline further from 63 percent in 1993-94 to 35.5 percent in 2009-10. Even if we consider a lower calorie norm of 2200, we find that while OPL was 96 percent of DPL in 1977-78, it was only 52 percent of DPL in 2009-10 (Table 6.7b). The same is true of U.P., as can be seen from Table 6.7a.

Tables 6.7a and 6.7b show that the incidence of rural poverty at the much higher 'DPLs' relative to OPLs is very high indeed and has risen sharply between 1993-94 and 2004-05, both in India and U.P. The percentage of persons who are actually poor based on a calorie norm of 2400 kcal. (the consumption standard used to define the rural poor in 1973-74 by the planning commission) increased from 72 to 90.5 between 1973-74 and 2009-10 in rural India, and from 50 to 89 between 1977-78 and 2009-10 in rural U.P. Despite a relatively lower level of absolute poverty than All-India, U.P. has consistently had more than 50 percent of its population below 'poverty line' since the time such quinquennial surveys began to be conducted by the NSSO in 1973-74.

The adverse impact of neoliberal policies on rural poverty levels is clearly visible from the sharply rising trend, particularly after 1999-2000. While the two decades prior to 1993-94 saw a mere 2.5 percent increase in Indian rural poverty, from 72 to 74.5, a relatively short period of a decade of economic reforms witnessed an increase in the percentage of rural poor by as much as 16 percent, from 74.5 to 90.5 between 1999-00 and 2009-10. The increase in the percentage of rural poor during the neoliberal economic reforms era has been particularly sharp in U.P. which has seen a 25.5 percent rise in poverty between 1993-94 and 2009-10, even though the two decades or so prior to 1993-94 saw the percentage of rural poor rising relatively slowly by less than 10 percent.

Even when we lower the nutrition norm from 2400 calories to 2200 calories (the norm actually applied in the base year 1973-74 by the Planning Commission), we find that the percentage of rural poor corresponding to 'DPLs' of Rs.1075 and Rs.895 for All-India and U.P. continues to be substantially higher than the official estimates of poverty in 2009-10. The direct method of poverty estimation shows that as much as 75.5 percent of the rural population in India and 72 percent in U.P. had an MPCE which was even less than what was required to access a lower nutrition norm of 2200

calories in 2009-10. These direct poverty ratios (in %) are clearly noticeably much higher than both the unrevised official estimates (OPR) of 23 and 22.5 percent as well as the revised official estimates (OPR-T) of 33.8 and 39.4 percent for All-India and U.P. respectively for the same year.

Thus, the percentage of rural population that is actually poor (as opposed to officially poor) based on a consumption standard of 2400 calories or even considering a lower calorie norm of 2200 kcal. per capita per day, is in reality appallingly high. In a predominantly agrarian economy like ours where close to 70 percent of the total population lives in rural areas with more than 50 percent of the workforce still employed in agriculture, rural poverty levels of this magnitude are shocking, to say the least. A detailed study of the socio-economic conditions, which have a direct bearing upon the incomes of cultivators is, therefore of utmost importance.

Table 6.7a: Percentage of rural population below 'Official Poverty Line' (OPL) and 'Direct Poverty Line' (DPL) in Uttar Pradesh⁶⁶

NSS Rnd No.	Year	Official Estimate			Direct Estimate					
		Percent of persons below OPL	Official Poverty Line (OPL in Rs.)	Calorie Intake at OPL (Kcal.)	Percentage of persons below specified calorie intake levels			Direct Poverty Line (DPL in Rs.) required to access		
					2400 kcal.	2200 kcal.	1800 kcal.	2400 calories	2200 calories	1800 calories
25th	1970-71	..	..	..	53.75	41.5	13	31	26.8	18
27 th	1972-73	..	..	..	48.75	34	10	37.5	31.5	23
28 th	1973-74	56.5	..	..	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
32 nd	1977-78	47.6	54	2380	50	35.5	10.75	55.5	47	32.75
38 th	1983	46.5	83.5	2280	55.5	41	14.5	93	79	55
50 th	1993-94	42.3	213	2165	63.5	45.5	11.5	272	221.5	141
55 th	1999-00	31.2	337	2040	61.5	47.5	10	455	393	257.5
61 st	2004-05 (URP)	33.4 (OPR-T: 42.7*)	366 (OPL-T: 435.14*)	1965 (2020*)	72.5	60	17	566.5	485	305
66 th	2009-10 (URP)	22.5 (OPR-T: 39.4)	530.9 (OPL-T: 632)	1850 (1945)	89	72	19	1230	895	508
66 th	2009-10 (MRP)	22 (OPR-T: 39.4*)	557.5 (OPL-T: 663.7*)	1830 (1930*)	88.5	70	18.5	1190	900	540

Source: For 25th round, see NSSO Report No. 269, Pp. 45, 54 and Nayyar, Rohini. 1991. Rural Poverty in India: An Analysis of Inter-State Differences; For 27th round, see NSSO Report No. 297; For 32nd round, see NSSO Report No.329 and Sarvekshana, volume 9, No.3, 1985-86, pp.S-54 and S-6;. For 38th round, see NSSO Report No. 353, pp.14 & A-115-A-121 and Sarvekshana, volume 13, No.2, Oct.-Dec.1989, pp. S-179, S-188 & S-205, S-214. For 50th Round, see NSSO Report Nos.402, pp.A-24 & A-222 and No.405, p.A-12. For 55th Round, see NSSO Report Nos.454, pp.36 & 46 and No.471, p.A-8. For 61st Round, see NSSO Report Nos.508, p.A-231 and No.513, pp.A-14 & A-86. For 66th Round, see Report No.538, pp.A-9,A-33 & A-81,A-105 and No. 540, p.A-153,A-177. ^ URP refers to uniform reference period and MRP to Mixed reference period. All poverty lines and poverty ratios (except where specified as MRP basis) are based on URP distribution of MPCE and are therefore comparable over time. The 2009-10 official estimates within parenthesis correspond to revised official poverty lines that have been updated using Tendulkar Methodology (OPL-T) and are exclusively based on

⁶⁶ See Table A1 in Appendix to the chapter for NSS data on the basis of which results in Table 6.7a have been derived for U.P.

MRP distribution. *The revised official poverty line and ratio, i.e., (OPL-T) & (OPR-T) as well as calorie intake at the revised official poverty line for 2004-05 are based on Mixed distribution of MPCE.

Table 6.7b: Percentage of rural population below ‘Official Poverty Line’ (OPL) and ‘Direct Poverty Line’ (DPL) in All-India

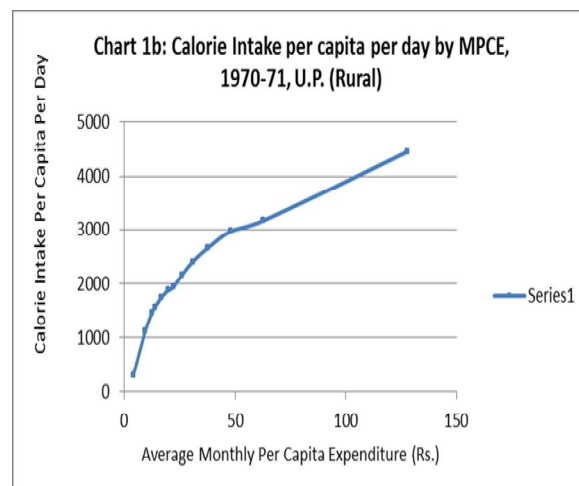
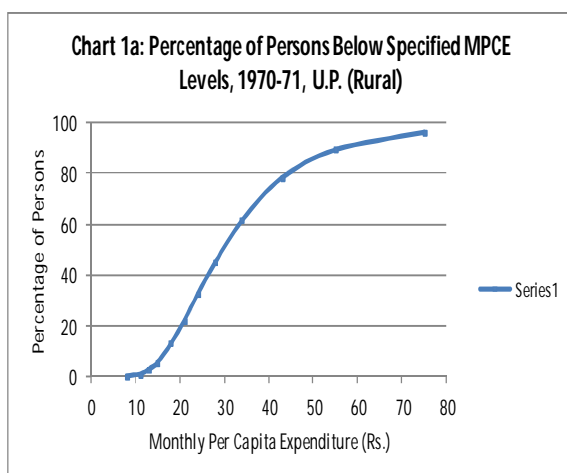
NSSRnd No.	Year	Official Estimate			Direct Estimate					
		Percent of persons below OPL	Official Poverty Line (OPL in Rs.)	Calorie Intake at OPL (Kcal.)	Percentage of persons below specified calorie intake levels			Direct Poverty Line (DPL in Rs.) required to access		
					2400 calories	2200 calories	1800 calories	2400 calories	2200 calories	1800 calories
25 th	1970-71	..	..	..	71.5	58	27	39.75	33.25	22.75
27 th	1972-73	..	..	..	64.5	52.75	26.5	44	38	27.5
28 th	1973-74	56.4	49*	2200*	72*	56.4	..	56*	49	..
32 nd	1977-78	53.1	56	2170	65.5	55.5	24	67	58.5	39
38 th	1983	45.7	86	2060	70	56	22.5	120	100	66.5
50 th	1993-94	37.3	206	1980	74.5	58.5	20	325	260	168
55 th	1999-2000	27.4	328	1890	74.5	58	20	565	457	298
61 st	2004-05 (URP)	28.3 (OPR-T: 41.5)	356 (OPL-T: 415 & 446.7*)	1820 (1930)	87	69.5	25	790	575	342
66 th	2009-10 (URP)	23 (OPR-T: 33.8)	557 (OPL-T: 645)	1780 (1870)	90.5	75.5	23	1570	1075	560
66 th	2009-10 (MRP)	23 (OPR-T: 33.8)	580 (OPL-T: 672.8)	1780 (1870)	90.5	75.5	25	1580	1100	610

Source: See U. Patnaik, (a.) “Neoliberalism and Rural Poverty in India”. EPW. July 28, 2007 for all rounds starting from the 28th till 61st. For the 66th Round, see U. Patnaik “Poverty Trends in India 2004-05 to 2009-10”. EPW. Oct.5th, 2013. For the 25th and 27th Rounds, same as Table 6.7a. *The revised official poverty lines (OPL-T) for the year 2004-05 on URP and MRP basis are Rs.415 and Rs.446.7 respectively and (OPR-T) is the official poverty ratio based on Tendulkar methodology. All poverty lines and poverty ratios (except where specified as MRP basis) are on URP basis and are therefore comparable.

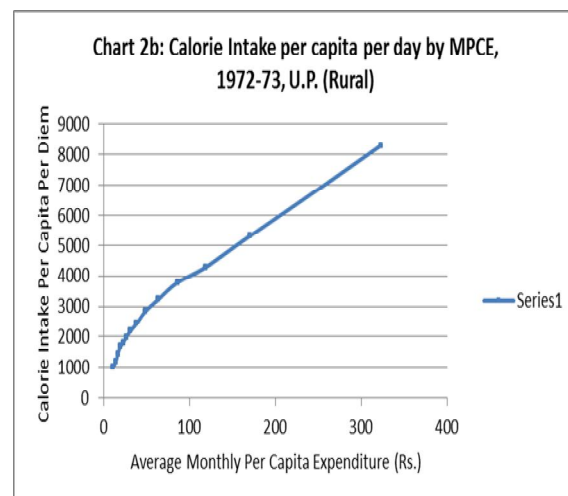
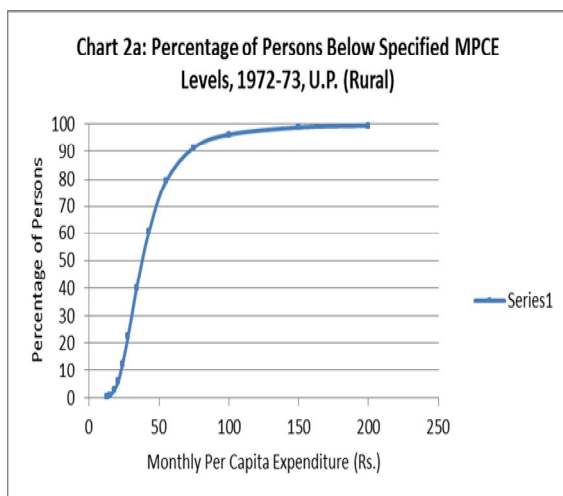
Appendix to Chapter 6:

Table A1: Calorie Intake per Diem per Capita and Cumulative Percent of Persons by Monthly Per Capita Expenditure Class (Rs.), Uttar Pradesh

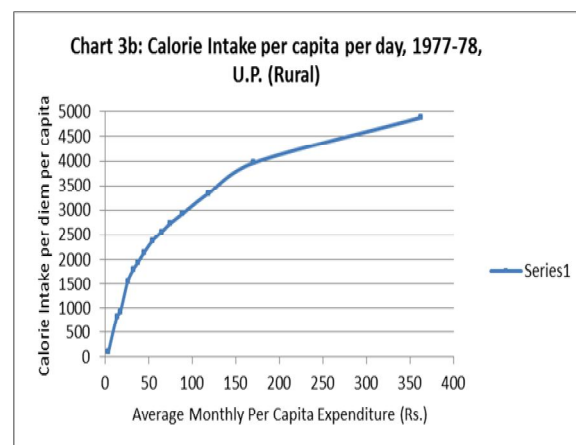
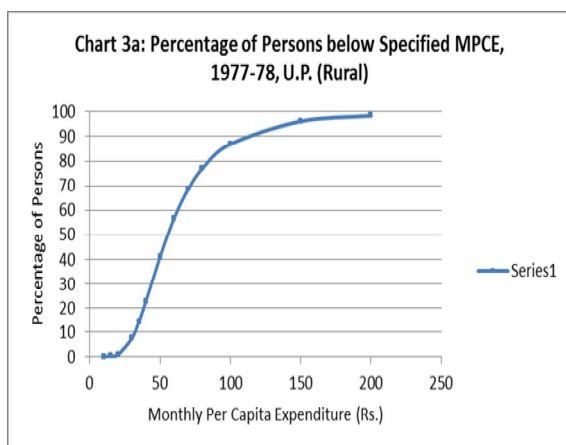
NSS 25th Round, 1970-71, Uttar-Pradesh (Rural)			
Monthly Per Capita Expenditure Class (Rs.)	Cumulative Percent of Persons	Average MPCE (Rs.)	Calorie Intake Per Diem Per Capita
0-8	0.12	3.98	294.6
8-11	0.87	9.5	1123.3
11-13	2.72	12.44	1455.1
13-15	5.52	13.85	1565.5
15-18	12.93	16.71	1736.1
18-21	22.12	19.65	1869.9
21-24	32.35	22.09	1929.8
24-28	45.02	26.07	2160.4
28-34	61.53	30.95	2404.2
34-43	78.34	37.64	2650.8
43-55	89.3	48.05	2966.1
55-75	96.34	62.59	3164.7
75 & Above	100	127.75	4451.1
All	..	35.08	2402.1



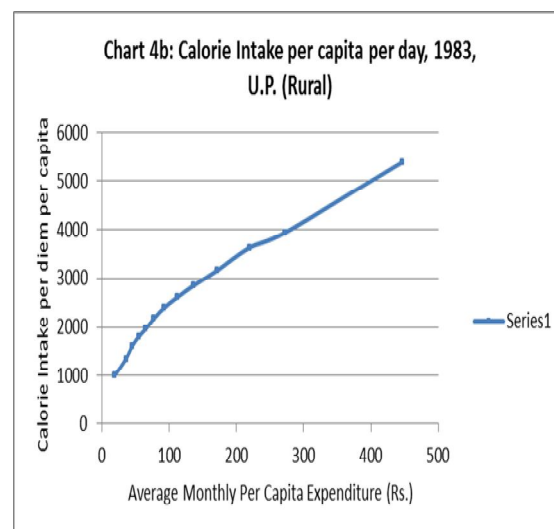
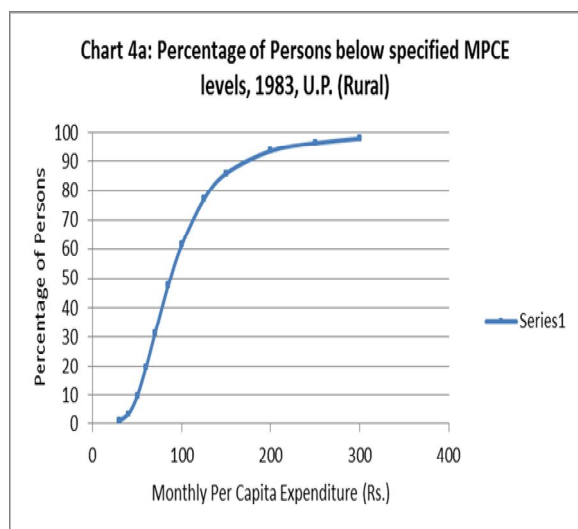
NSS 27th Round, 1972-73, Uttar-Pradesh (Rural)			
Monthly Per Capita Expenditure Class (Rs.)	Cumulative Percent of Persons	Average MPCE (Rs.)	Calorie Intake Per Diem Per Capita
0-13	0.34	10.92	1019
13-15	0.84	14.15	1174
15-18	2.81	16.6	1450
18-21	6.05	19.6	1689
21-24	12.61	22.75	1798
24-28	22.52	26.08	1975
28-34	39.89	31.18	2188
34-43	60.79	38.29	2429
43-55	79.23	48.46	2833
55-75	91.45	63.5	3220
75-100	96.33	85.75	3774
100-150	98.91	118.65	4281
150-200	99.56	170.2	5304
200 & Above	100	322.77	8298
All Classes	100	45.03	2575



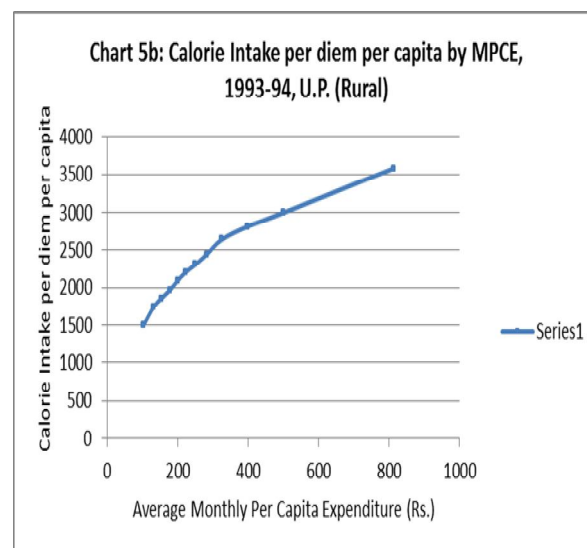
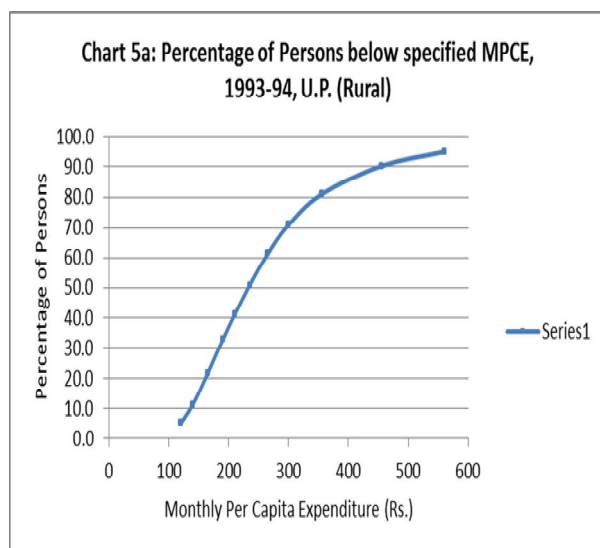
NSS 32nd Round, 1977-78, Uttar-Pradesh (Rural)			
Monthly Per Capita Expenditure Class (Rs.)	Cumulative Percent of Persons	Average MPCE (Rs.)	Calorie Intake Per Diem Per Capita
0-10	0.11	3.79	92.4
10-15	0.27	13.8	829.6
15-20	0.86	17.64	923.3
20-30	7.44	26.11	1552.6
30-35	14.28	32.67	1801.3
35-40	22.88	37.61	1934.9
40-50	40.95	44.97	2141.1
50-60	56.75	54.74	2384.4
60-70	68.5	64.71	2554.9
70-80	76.89	74.81	2731.4
80-100	86.92	88.82	2927.6
100-150	96.19	118.75	3342.9
150-200	98.44	170.57	3963.7
200 & Above	100	362.39	4884.5
All Classes	100	67.34	2464



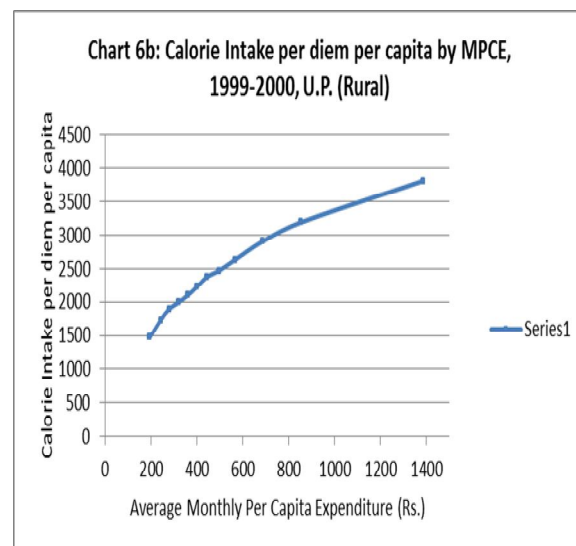
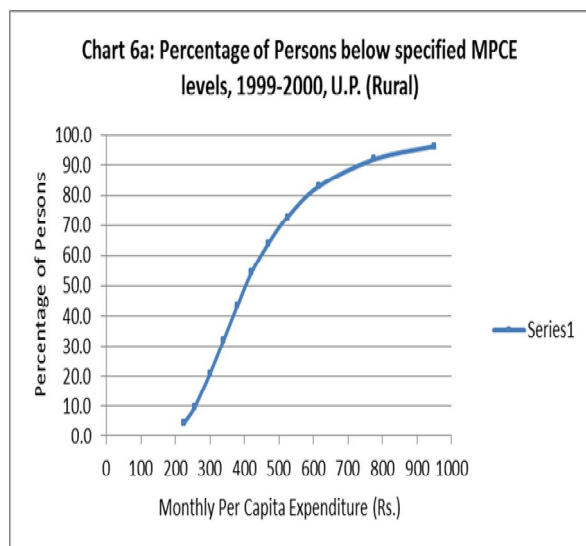
NSS 38th Round, 1983.			
Monthly Per Capita Expenditure Class (Rs.)	Cumulative Percent of Persons	Average MPCE (Rs.)	Calorie Intake Per Diem Per Capita
0-30	0.88	19.36	1012
30-40	3.37	36.03	1354
40-50	9.64	45.41	1618
50-60	19.78	55.19	1807
60-70	31.22	65.09	1958
70-85	47.71	77.41	2174
85-100	61.36	92.17	2390
100-125	76.95	111.69	2602
125-150	85.94	136.5	2849
150-200	93.69	170.86	3155
200-250	96.54	220.05	3628
250-300	98.1	271.86	3931
300 & Above	100	446.7	5390
All Classes	100	103.82	2399



NSS 50th Round, 1993-1994.			
Monthly Per Capita Expenditure Class (Rs.)	Cumulative Percent of Persons	Average MPCE (Rs.)	Calorie Intake Per Diem Per Capita
Less than 120	5.1	102.84	1495
120-140	11.4	130.76	1735
140-165	21.7	152.8	1856
165-190	32.7	177.38	1965
190-210	41.1	199.75	2092
210-235	50.9	222.54	2207
235-265	61.3	249.8	2308
265-300	71.0	281.25	2441
300-355	80.9	325.56	2644
355-455	90.3	397.76	2815
455-560	95.1	499.78	2998
560 & above	100.0	811.73	3577
All classes	100.0	273.83	2307



NSS 55th Round, 1999-2000.			
Monthly Per Capita Expenditure Class (Rs.)	Cumulative Percent of Persons	Average MPCE (Rs.)	Calorie Intake Per Diem Per Capita
0-225	4.4	195	1466
225-255	9.5	243	1734
255-300	20.8	279	1893
300-340	32.1	320	1990
340-380	43.6	361	2100
380-420	54.2	400	2226
420-470	64.0	444	2375
470-525	72.8	496	2470
525-615	82.9	566	2631
615-775	92.0	687	2907
775-950	96.3	852	3190
950 & More	100.0	1386	3815
All classes	100.0	467	2327



NSS 61st Round, 2004-05.			
Monthly Per Capita Expenditure Class (Rs.)	Cumulative Percent of Persons	Average MPCE (Rs.)	Calorie Intake Per Diem Per Capita
0-235	4.0	202.64	1396
235-270	9.6	253.83	1647
270-320	20.5	297.54	1778
320-365	33.2	342.74	1914
365-410	43.8	388.42	2009
410-455	53.7	431.93	2109
455-510	64.4	482.2	2195
510-580	73.7	543.23	2339
580-690	82.8	629.36	2541
690-890	91.8	773.68	2608
890-1155	95.8	994.47	2898
1155 & more	100.0	1953.56	3802
All classes	100.0	532.63	2200

Chart 7a: Percentage of Persons below specified MPCE levels, 2004-05, U.P. (Rural)

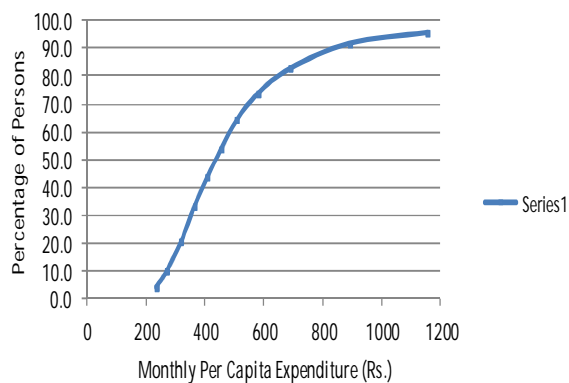
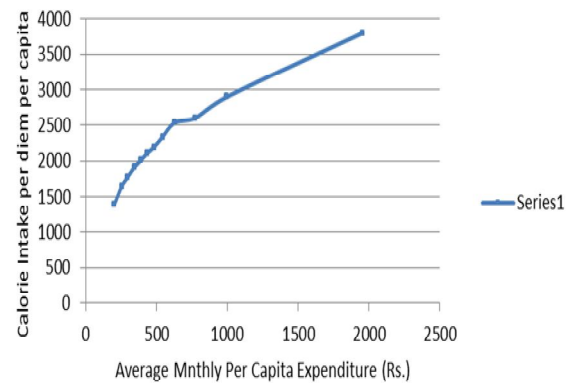
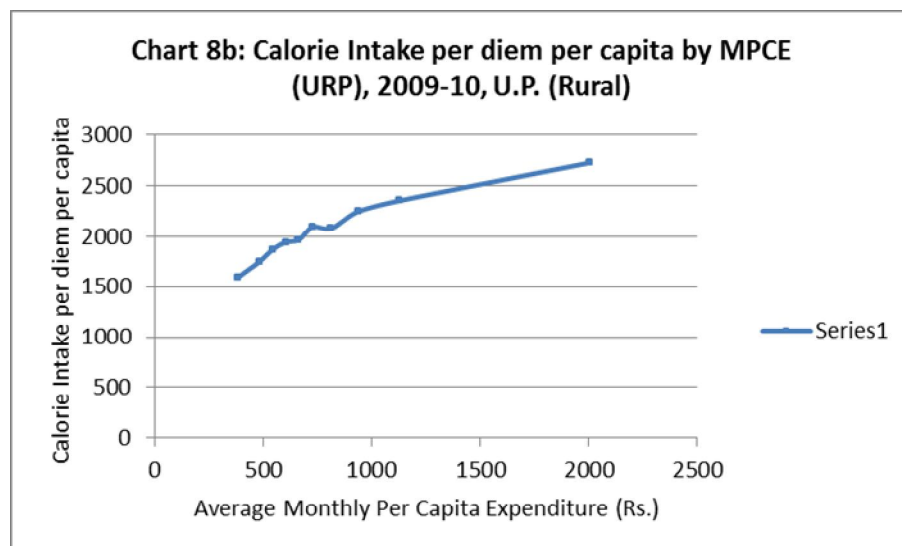
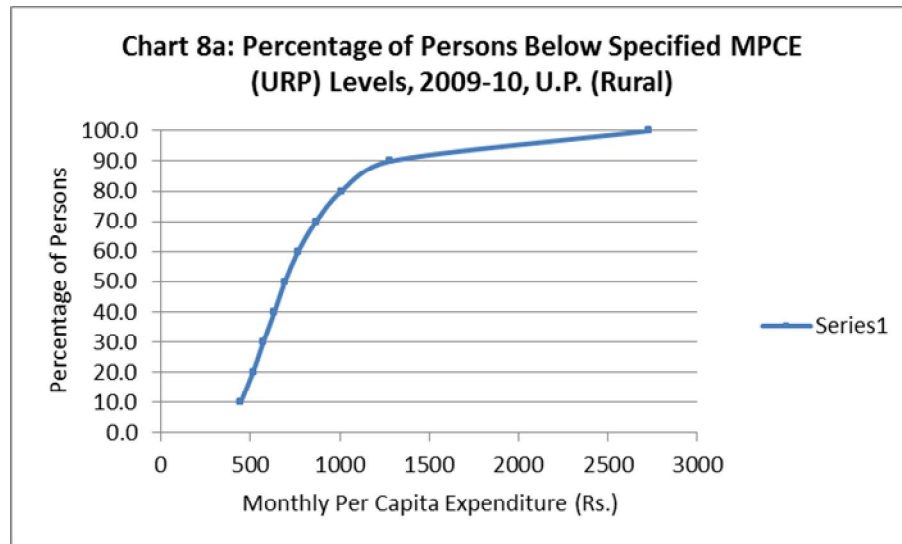


Chart 7b: Calorie Intake per diem per capita by MPCE, 2004-05, U.P. (Rural)



NSS 66th Round, 2009-10.			
<i>Monthly Per Capita Expenditure Class (Rs.)</i>	<i>Cumulative Percent of Persons</i>	<i>Average MPCE (Rs.)</i>	<i>Calorie Intake Per Diem Per Capita</i>
<i>URP Distribution</i>			
170-446	10.0	383.63	1595
446-515	20.0	481.69	1749
515-573	30.0	544	1873
573-635	40.0	604.77	1945
635-693	50.0	663.04	1967
693-767	60.0	728.21	2095
767-868	70.0	813.5	2081
869-1010	80.0	936.15	2248
1010-1280	90.0	1127.21	2355
1280-132961	100.0	2004.37	2729
All Classes	100.0	828.67	2064

NSS 66th Round, 2009-10.			
<i>Monthly Per Capita Expenditure Class (Rs.)</i>	<i>Cumulative Percent of Persons</i>	<i>Average MPCE (Rs.)</i>	<i>Calorie Intake Per Diem Per Capita</i>
<i>MRP Distribution</i>			
195-473	10.0	416.85	1587
473-550	20.0	514.52	1764
550-608	30.0	579.87	1846
609-667	40.0	639.58	1887
667-731	50.0	697.50	1999
731-793	60.0	762.17	2018
793-895	70.0	839.37	2107
895-1021	80.0	952.11	2267
1021-1267	90.0	1130.55	2364
1269-13859	100.0	1788.19	2797
All Classes	100.0	832.18	2064



Chapter 7

An Overview of Agro-climatic and Socio-Economic Profile of the Chosen Villages

An examination of socio-economic features of the overall population from which our sample is drawn is essential for any meaningful discussion of findings based on field survey. The agro-economic and social structure of the chosen villages defines the overall framework within which our detailed study of the smallest unit, the sample households, is based. The present chapter describes this overall macroeconomic scenario that characterizes our six villages, in terms of the demographic profile, land utilization pattern, structure of landholding, cropping pattern, and irrigation systems.

Table 7.1 gives the demographic profile of the villages. The area per person or land-man ratio is extremely low averaging between one-tenth to one-fifth of a hectare. A number of interesting points emerge from Table 7.1. Firstly, mounting population pressure reflected in a high population density across the surveyed villages accounts for such low values of land-man ratios. This is particularly true of the two villages of *Jansath* block, viz., *Kawal* and *Nagla-Kabir*, both of which are located on the *Muzaffarnagar- Jansath-Mirapur* highway. Moreover, barring *Kamruddin-Nagar* (an interior village), average household size is also high at approximately 7 which is at par with the district average of 6.7. Secondly, though adverse sex ratio is a feature typical of *Muzaffarnagar* district at large, it is exceptionally adverse at 768 in case of *Karori*. This is especially surprising for a village which fares better than the district average both in terms of its overall as well as female literacy rate, which is in fact substantially higher at 52.1 percent compared with the 44.5 percent registered for rural *Muzaffarnagar* as a whole.

Further, if we look at the sex ratio in the (0-6) years age-group, the situation is particularly alarming. For instance, in *Nagla-Kabir*, sex ratio falls dramatically by more than 30 percent from 887 for all age groups to 678 in the (0-6) years age group. This is equally true of every other village surveyed, except *Kheri-Sarai* (predominantly Muslim inhabited) which registers a higher sex ratio of 928 in the (0-6) years age group relative to an overall ratio of 916. Such low values of sex ratio is a

Table 7.1:- Demographic Profile of the Sample Villages

Village Name	Block / Tehsil Name	Total No. of Households	Total Population	Total Village Area (in hectares)	Average Household Size	Sex Ratio*		Density of Population (Persons per sq.km.)	Literacy Rate^				Land-Man Ratio
						Overall	(0-6 Years)		Total	Male	Female	Gender Gap	
Karori	Shamli	181	1319	273	7.3	768	734	483	64.9	74.9	52.1	22.8	0.21
Bhainswala	Shamli	1067	7170	1410	6.7	871	784	509	65.8	77.2	53.1	24.1	0.20
Kamruddin-Nagar	Budhana	396	2272	600	5.7	917	871	379	70.5	85.2	54.7	30.5	0.26
Nagla Kabir	Jansath	268	1704	192	6.4	887	678	887	76.4	87.7	64.2	23.5	0.11
Kawal	Jansath	1338	9433	772.1	7.1	896	841	1222	54.0	64.3	42.6	21.8	0.08
Kheri-Sarai	Jansath	685	4761	879.9	7.0	916	928	541	53.2	65.5	39.7	25.7	0.18
Muzaffarnagar District		395327	2639480	387962.39	6.7	866	860	680	58.8	71.2	44.5	26.7	0.15

Source: Area Profile, Primary Census Abstract, Uttar Pradesh, Census of India, 2001.

Note: 1 Square Kilometre=100 Hectares

cause of concern as it is an indication of the poor health and social status of women in rural areas of *Muzaffarnagar* and therefore, requires immediate consideration.

Thus the district lags a long way behind the abysmal performance of the state itself when it comes to such parameters of social development as literacy and women's empowerment. This scenario is however completely reversed when we examine the situation with regard to agricultural development. *Muzaffarnagar* is perhaps one of the most advanced districts in terms of agricultural performance in Uttar-Pradesh. Let us focus on some of the aspects of agrarian development in the chosen villages of *Muzaffarnagar* district in Western Uttar-Pradesh.

An overview of agro-economic conditions in the surveyed villages highlights the extreme diversity in agrarian structure and relations across the district. This difference in the overall environment within which cultivation is practised has been aptly summarized by farmers of *Nagla-Kabir* and *Kawal* of *Jansath* block. According to them, unlike in the villages of *Budhana* or even *Shamli tehsil*, the lesser the rainfall, the higher the yield of the most important cash crop, i.e., sugarcane in this part of the district. Given the geographical location of their villages along the banks of the river Ganga, even a moderate to good rainfall means flooding of their fields while a drought means a bumper harvest for them! Villages lying to the east of river *Hindan* (such as those in *Muzaffarnagar* and *Jansath* tehsils) have water levels very close to the earth's surface while those that fall westwards of river *Hindan* (covering *Shamli*, *Kairana* and *Budhana* tehsils) find water at a relatively greater depth, thereby resulting in water scarcity. It is then no wonder that while water levels vary between 25 to 40 feet in *Karori* and *Bhainswal* villages of *Shamli* block, the same can be found at barely 10-12 feet below the surface in *Nagla-Kabir* and *Kawal* of *Jansath* block. In a village like *Kamruddin-Nagar* of *Budhana tehsil*, a region where water is probably found at a greater depth than anywhere else in the district, water table is as deep as 60 to 80 feet. Clearly, such variations in water levels have implications for a wide range of farming practices adopted by the cultivators across the district. The following two Tables on land utilization as well as cropping pattern makes this clear.

Table 7.2:- Land Utilization Pattern and Irrigated Area by Source

Village Name	Total Village Area (Hectares)	Net Sown Area (hectares)*	Gross Sown Area (hectares)	Cropping Intensity	NSA as % of Total Village Area	Net Sown Area as % of Total Cultivable Area	Gross Irrigated Area as % of GSA	Distribution of Gross Irrigated Area by Source			No. of Tubewells			NSA per Tubewell (Hectares)	
								Canal Irrigated	Tubewell (Public) Irrigated	Tubewell (Private) Irrigated	Public	Private			
												Total	Electric		Diesel
Karori	273	239	334.6	140.0	87.5	96.8	100	9.6	0.00	90.4	0	70	70	0	3.4
Bhainswal	1410	1207	1633	135.3	85.6	97.6	100	55.5	0.00	44.5	0	137	79	58	8.8
Kamruddin-Nagar	600	534	878	164.4	89.0	99.3	100	0.0	5.58	94.4	3	87	86	1	5.9
Nagla-Kabir	192.0	149.4	203.2	136.1	77.8	-	100	86.8	0.00	13.2	-	40	6	-	3.7
Kawal	772.1	665.8	1058	158.9	86.2	98.8	100	3.6	0.00	96.4	2	519	45	474	1.3
Kheri-Sarai	879.9	762.2	1177	154.4	86.6	97.7	100	16.6	0.34	83.0	3	151	109	42	4.9

Source: Milaan Khasra, Village Lekhpals.

Note: Total Cultivable Area = (Area under Forests + Cultivable Waste land + Current Fallows + Other Fallows + Pastures and Grazing Land + Orchards, Bushes etc. + Net Sown Area) – (Usar and Other Land Unfit for Cultivation + Land used for Non-Agricultural Uses).

Table 7.3:- Cropping Pattern: Area Under Principal Crops in the Chosen Villages

Village Name	Area Under Principle Crops as Percentage Distribution of Gross Sown Area											Area under (Sugarcane+Wheat) as % of GSA	
	Paddy		Wheat (HYV)	Total Cereals	Total Pulses	Total Foodgrains	Sugarcane	Mustard	Total Fodder	Total Fruits + Vegetables	Others		Grand Total
	HYV	Total											
Karori	8.7	8.7	21.0	29.6	0.1	29.8	51.2	3.3	14.5	0.3	0.9	100	72.2
Bhainswal	3.1	3.1	26.1	29.1	1.7	30.8	55.2	1.0	11.5	1.4	0.1	100	81.3
Kamruddin-Nagar	1.1	2.5	32.0	34.5	0.3	34.9	47.5	0.6	15.0	2.0	0.0	100	79.5
Nagla-Kabir	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Kawal	3.9	6.1	27.7	33.7	0.2	34.0	39.5	0.7	15.2	10.0	0.8	100	67.2
Kheri-Sarai	2.0	6.0	30.5	36.5	0.4	37.0	40.1	2.1	18.2	2.4	0.2	100	70.5

Source: Jeenswaar Khasra, Phasli 1418, i.e., Agricultural Year 2010-11, Village Lekhpals.

The land utilization pattern as shown in Table 7.2 reveals the near impossibility of increasing agricultural production through physical area expansion. Net sown area as percentage of total cultivable area is already high at 97 percent or more in our sample villages. Further, cropping intensity varies between 135.3 in *Bhainswal* to as much as 164.4 in *Kamruddin-Nagar*. That cropping intensity is less in the two villages of *Shamli* block relative to those of other areas is perhaps attributed to the far greater extent to which sugarcane has replaced all other crops in *Shamli*. Commercialization of agriculture has taken place to a somewhat greater extent in *Shamli* compared to other parts of the district. This is precisely what our statistics on cropping pattern suggests.

Table 7.3 shows that wheat and sugarcane are clearly the two most important crops sown. From two-thirds (67.2 percent) of the gross sown area in *Kawal* to as much as four-fifths (81.3 percent) in *Bhainswal* being under wheat and sugarcane alone, these two high-valued labour intensive crops have today displaced all other crops, especially coarse cereals and pulses. This is true not only of our sample villages but of *Muzaffarnagar* countryside as a whole. Further, it is clear from Table 7.3 that the extent of acreage sown under an expensive crop like sugarcane (demanding not only in terms of water and labour requirements but equally in terms of the duration for which it occupies land) in the two villages of *Shamli* is far greater than in any other. While more than 50 percent of the gross sown area in the two villages of *Shamli* is accounted for by sugarcane alone, this falls to 40 percent in case of *Kawal* and *Kheri-Sarai* in *Jansath*. In *Kamruddin-Nagar*, an equally high 47.5 percent of the gross sown area is under sugarcane. This is in part due to the relatively cheaper irrigation facilities available to cultivators of *Shamli* and partially owing to better quality of land (in terms of evenness) which enables farmers there to reap greater profits from sowing a high-valued cash crop like sugarcane. Looking at the distribution of gross irrigated area by source (Table 7.2), we find that as much as 55.5 percent of the gross irrigated area is canal irrigated in *Bhainswal*. Moreover, even in *Karori* where a mere 9.6 percent of the gross irrigated area is canal irrigated, almost the entire area is irrigated by privately owned electric tubewells. This is in sharp contrast to the situation prevailing in the villages of *Jansath* where bulk of the gross sown area is irrigated by tubewells operated through diesel. Even though *Kawal* reports the highest number of

tubewells per unit area (net sown area per tubewell is the smallest at 1.3 hectares), this is primarily on account of diesel operated pumping sets which are owned by a large number of farmers, used mainly for irrigating their fields. Given the rate at which diesel prices are fast increasing in India, the latter is undoubtedly a much more expensive system of irrigation compared to one by electric tubewells.

Another striking observation is the virtual absence of state owned tubewells operated through electricity (Table 7.2) in our chosen villages. Even in a village like *Kamruddin-Nagar* where water table is very deep and fast declining, we find a mere 5.5 percent of GSA being irrigated by public tubewells. The implication of this non-existence of both canal irrigation as well as public investment in tubewells is an implicit denial of such basic rural infrastructure facilities as irrigation to the small and marginal farmers who are then forced to depend on private tubewell owners for irrigating their fields, because the initial cost of installation of an electric tubewell makes it unaffordable for the vast majority. More often than not, the “have-nots” who comprise the bulk of the rural population face acute water shortage owing to a refusal by the “haves” to lend water to them even at exorbitant rates per hour. The motive of the tubewell owners is clear. By starving their fields of water, they practically force the marginalized to sell their lands at throwaway prices to them. This is indeed what *Muzaffarnagar* countryside is witnessing today, a reflection of which can be seen in the landholding pattern of the six villages in which we carried out our detailed fieldwork. This process of dispossessing peasants from their lands, thereby rendering ever increasing numbers of small and marginal cultivators landless is clearly aided and abetted by the state by denying them easy and cheap access to irrigation and such essential facilities. The process of landlessness that the district is undergoing today is manifested in a highly concentrated structure of landholding on the one hand and an ever increasing “reserve army of labour” on the other.

We have used data on the landholding pattern in our sample villages to construct Lorenz curves and have identified the land owned by the top 15, middle 20 and bottom 65 percent of the households.¹ The results are shown in Table 7.4. We find a substantially high concentration of landholding in each of the six villages

¹ See Chapter 5 for the rationale behind the threefold division of the population, namely top 15, middle 20 and bottom 65 percent of the households.

surveyed though there are variations. Concentration of owned area by the top 15 percent of households is especially high at over 55 percent in *Karori* and *Kamruddin-Nagar*. At the other pole a mere 12 percent of the total area is owned by the bottom 65 percent of households in *Karori*, while it is only slightly better at 18.25 in case of *Kamruddin-Nagar*.

Table 7.4: Concentration of Area Owned in the Six Surveyed Villages in Relation to District Landholding Structure

Village Name	Year 2005-06			Average Size of Land Owned (acres)
	Bottom 65%	Middle 20%	Top 15%	
Karori	12.0	28.0	60.0	1.08
Bhainswala	23.25	26.75	50.0	1.09
Kamruddin-Nagar	18.25	26.25	55.5	0.75
Nagla Kabir	25.25	29.0	45.75	1.28
Kawal	26.25	27.75	46.0	1.06
Kheri-Sarai	24.50	28	47.5	1.14

Source: Agriculture Census, 2005-06. Village Lekhpals

This is indeed a very high degree of concentration of owned area. It must however be noted that these are precisely the villages where there is neither any substantial degree to which area is irrigated by canal nor is a significant area covered by state owned tubewells. Alternatively, villages like *Bhainswal* and *Nagla-Kabir*, where surface irrigation (canal) does exist to a significant extent, fare slightly better than the two villages noted above in respect of their landholding structure. This is however not to underestimate the highly unequal distribution of owned area that is a characteristic feature not only of our sample villages but of the district at large.

An inevitable fallout of such an inequitable structure of landholding is the ever increasing reserves of landless agricultural labourers. A look at the occupational distribution of workforce in our sample villages reveals an astonishingly high percentage of agricultural labourers, particularly in *Karori*, a village exhibiting strongest tendency towards concentration of owned area. This is corroborated by the statistics presented in the Table below.

Table 7.5: Occupational Distribution of Total Population and Total Workers by Category of Work in our Sample Villages

Village Name	Percentage Distribution of Total Population into		Percentage Distribution of Total Workers by Category						Agricultural Labourers as % of Total Population
	Total Workers (Main+ Marginal)	Non-Workers	Agricultural Workforce			Non-Agricultural Workforce		Grand Total	
			Culti-vators	Agricultural Labourers	Total	Household Industry	Other Workers		
Karori	36.1	63.9	22.3	58	80.3	8.2	11.6	100	20.9
Bhainswala	37.1	62.9	42.5	35.8	78.3	3.6	18.1	100	13.3
Kamruddin-Nagar	27.4	72.6	50.4	27.4	77.8	9.3	12.8	100	7.5
Nagla Kabir	31.7	68.3	48.5	20	68.5	3.3	28.1	100	6.3
Kawal	31.2	68.8	28.5	42.8	71.3	3.9	24.8	100	13.3
Kheri-Sarai	28.8	71.2	51.2	26.3	77.5	2.2	20.4	100	7.6
District Muzaffar-nagar	35.1	64.9	40.6	28.4	69	3.5	27.5	100	10.0

Source: Primary Census Abstract, Uttar-Pradesh, Census of India, 2001.

Table 7.5 shows a sharply polarized agricultural workforce across our chosen villages in accordance with the overall district scenario. This is particularly true of *Karori*, *Kawal* and to an extent *Bhainswal* wherein the percentage of agricultural labourers to total workforce is way above that reported for rural *Muzaffarnagar* as a whole. In *Karori*, agricultural labourers as percentage of total workforce are a staggering 58 percent. Even as percentage of total population, their estimate at 21 percent is more than double of the district figure of 10 percent. However, we were informed that this was not the case some years earlier. It seems that the non-viability of farming in the ongoing reforms period, especially for those at the bottom rung of the peasantry, namely the small and marginal tillers, results in their increasing displacement over time. This process of pauperization of the marginalized, reflected in an ever growing “reserve army” of landless agricultural labourers across our sample villages, is reinforced by the lack of adequate non-farm employment opportunities. This is particularly true of *Karori* where a mere 11.6 percent of the total workforce is registered as ‘other workers’, the smallest across our chosen villages. As a result, an overwhelming 80.3 percent of the total population of *Karori* is dependent on farm sector for drawing its livelihood. *Nagla-Kabir*, on the other hand, reports the

highest percentage of such non-agricultural, non-household industry workers at 28.1 percent, which is marginally above the district average of 27.5 percent. This access to non-farm employment, even though limited, may well explain the smallest percentage of agricultural workers (20 percent) recorded in *Nagla-Kabir*.

It is evident from Table 7.5 that the agrarian sector constitutes a major source of income for a disproportionately large percentage of the total population across our sample villages. So much so that in four out of a total of six villages surveyed, more than three-fourths of the total village population is dependent on agriculture for drawing its livelihood. For a sector which is the lifeblood of such a huge proportion of the total population, it is imperative that its class structure be determined before any fruitful discussion of the living conditions of those dependent on it can be undertaken. Against the backdrop of increasing polarization of agrarian population as seen above, the division of rural society into antagonistic classes with contradictory interests assumes an even greater significance. Clearly then, we need a statistical criterion to locate the specific position of each household within the structure of class hierarchies thus outlined. Will it yet again be the physical size of landholding that will determine the class status of a peasant household or is there a need to explore a more adequate and reliable index, perhaps like the “labour exploitation index” that can capture class differentiation within the peasantry more accurately? The next chapter will discuss this in somewhat greater detail.

SAMPLING DESIGN AND SAMPLE SIZE

The sampling design adopted is stratified random sampling with village as primary unit and household as the ultimate unit of study. A total of 196 households (176 cultivator and 20 landless agricultural labour households) have been included in our sample. These households were chosen from the six villages spread across three blocks (out of a total of fourteen) in the district, which we have already described. A certain percentage of the total number of households in each of the chosen villages has been surveyed. Clearly, the larger the number the households in a village, the smaller the percentage of households surveyed from that village. In other words, feasibility constraint for an independent researcher ruled out the possibility of interviewing a uniform percentage of the total number of households from each of the

chosen villages. Table 7.6 gives the details of village-wise distribution of our sample holdings.

Table 7.6: Village –wise Distribution of Sampled Holdings

Village Name	Sample Size (n)	Total No. of Households (Population Size) as per		Sample Size (Cultivators+Landless) as % of Total Population		No. of landless households in sample	No. of Cultivator households in sample	Sample Size (Cultivators only) as % of Total Population	
		Census, 2001 (N _c)	Village Household Register (N _v)	Census, 2001	Village Household Register			Census, 2001	Village Household Register
Karori	31	181	328	17.1	9.5	2	29	16.0	8.8
Bhainswal	77	1067	1474	7.2	5.2	12	65	6.1	4.4
Kamruddin-Nagar	28	396	400	7.1	7.0	0	28	7.1	7.0
Nagla Kabir	20	268	237	7.5	8.4	4	16	6.0	6.8
Kawal	24	1338	1250	1.8	1.9	2	22	1.6	1.8
Kheri-Sarai	16	685	n.a.	2.3	n.a.	0	16	2.3	n.a.
Grand Total	196	3250	3689	5.5	4.9	20	176	5.4	4.3*

Source: Primary Census Abstract, Uttar-Pradesh. Census of India, 2001 for Column [3] and Village Household Register obtained from Village Pradhan for column [4].

Note: a.) Landless labourers here have been defined as those who did not cultivate any land, neither owned nor leased-in in the one year preceding the date of enumeration, the agricultural year 2005-06. By definition, all those owning zero land but operating a tiny plot by way of leased-in land (whether on fixed cash rent or share crop basis) regardless of the size or duration of the lease, have been excluded from the landless category and instead, been termed as cultivators for our purposes.

(b.) * Excludes Kheri-Sarai from the total owing to non-availability of data on that village.

As is evident from Table 7.6, our sample size (n=196) including both cultivators and agricultural labourers is 5.5 percent of the total population (i.e., sum of total number of households in six villages surveyed) as per Census 2001 (N_c). Further, n as percentage of N_v varies from 9.5 percent in *Karori* to 1.9 percent in *Kawal*.

Moreover, if we exclude landless agricultural labourers from the sample, then, our sample is 4.3 percent of the total population (though total population here has been defined as the sum of cultivator households and landless agricultural labour households, this should strictly speaking be the sum of cultivator households alone)

based on population size enumerated by the village household register, or the *parivar* register as it is locally called.

Further, our sample does not reflect the distribution of population by area owned and operated. Although an attempt has been made to capture prevailing heterogeneity within the district by including villages belonging to blocks representing diverse socio-economic and agro-climatic conditions of the district, it must be noted that ours is not a representative sample. Instead, our aim was to collect adequate number of holdings from the various landowning size-groups into which we had stratified our population in the chosen villages. This was deliberately done to ensure adequate representation of cultivators across landowning size groups.

Let us look at the criterion adopted for choice of villages followed by the methodology of selection of holdings for detailed questionnaire based study.

SELECTION OF VILLAGES

Detailed micro-studies were carried out in six villages spread across three (out of a total of fourteen) blocks of the district. These villages as earlier discussed, include *Karori* and *Bhainswal* in *Shamli* block, *Kawal*, *Nagla-Kabir* and *Kheri-Sarai* in *Jansath* block and finally, *Kamruddin-Nagar* in *Kandhla* block. These six villages were chosen randomly from the three blocks representing diverse socio-economic and agro-climatic conditions within the district of *Muzaffarnagar*. For an independent researcher, the choice of these villages, to an extent, was also dictated by practical considerations like provision of accommodation within the village. The option of staying in a village was desirable as it resulted in better and prolonged interaction with farmers and hence, understanding of the dynamics of village life in general. In short, though feasibility was a factor, selection of the above noted villages was not altogether based on easy accessibility alone. Our aim was to try and capture the tremendous heterogeneity that prevails within the district in our sample. An attempt has been made to ensure this by purposively choosing six villages from three blocks representing different agro-climatic zones into which the district has been divided.² Based on topography of the district as well as socio-economic indicators of economic

² Studies in the Economics of Farm Management in Muzaffarnagar District (U.P.), 1975. Combined Report for the years 1966-67 to 1968-69.

development at block level, *Shamli* block from *Shamli tehsil*, *Jansath* block from *Jansath tehsil* and *Kandhla* block from *Budhana* tehsil were chosen for detailed village level studies. *Shamli* block lies in the relatively more fertile tract of the Western Uplands. *Kandhla* block spans three *tehsils* viz., *Shamli*, *Kairana* and *Budhana*³ and likewise falls partially in the Central tract and partly in the Western Uplands. Finally, *Jansath* block along the banks of the river *Ganga* in the east belongs to the Eastern Uplands.

Before we look at the parameters of socio-economic development at block level, let us briefly study the physical features of *Muzaffarnagar* district. A careful examination of its physical area reveals that the district can be divided vertically into three distinct natural tracts. Noticeable differences in soil fertility, water level, land gradation etc. separate one tract from the other.⁴

1) In the **Eastern Uplands** and the adjoining riverain tract of the *Ganges* valley or the ***Ganga Khadars*** (consisting of a small stretch (less than 5 percent) of low lying land) in the extreme east, comprising *tehsils* of *Muzaffarnagar* and *Jansath* (which includes *Jansath* block), water can be found very close to the surface. Its level varies between 6.6–33.3 feet below the surface.⁵ However, in *Morna* block of *Jansath* tehsil, water level is 33.3-49.5 feet below the surface. This tract accounts for approximately 35 percent of the total area of the district. The most prominent feature of this entire region, lying between river *Kali* in the west and *Ganga* in the east, is the presence of a sandy belt. Large areas of this tract have been adversely affected owing to seepage from the *Ganga* canal, thereby resulting in frequent flooding, formation of swamps and the development of *reh*, a saline efflorescence which renders the land wholly unfit for cultivation. This perhaps explains the relatively high land-man ratio of 0.25 in *Jansath* block against the district average of 0.18 (Table 7.7). Three villages, viz., *Nagla-Kabir*, *Kawal* and *Kheri-Sarai* have been chosen from this part of the district.

³ It must be noted that *Kandhla* block spans three *tehsils* of the district. While major part of *Kandhla* block lies in the relatively more fertile *tehsils* of *Shamli* and *Kairana* in the west, a small part of it lies in the relatively less fertile zone II which includes *Budhana* tehsil. However, Village *Kamruddin-Nagar* chosen for detailed field study falls under that small portion of *Kandhla* block which lies in *Budhana* tehsil.

⁴ District Gazeteer of Muzaffarnagar. Also see 'Studies In The Economics Of Farm Management in Muzaffarnagar District (U.P.)'. Combined Report for the years 1966-67 to 1968-69.

⁵ Information on water levels in different blocks of the district was obtained from Minor Irrigation Department, Vikas Bhawan, Muzaffarnagar. Note: 1 mt.=3.3 ft. or 1ft.=0.3048 mts.

2) In the *Doab* of the rivers *Kali* in the east and *Hindan* in the west lies the **Central depression tract** comprising parts of *Kairana*, *Budhana* and *Muzaffarnagar tehsils*. It accounts for approximately 20 percent of the total area of the district. Both the level of land as well as water is usually low throughout this tract. Infact, water in this tract is found at a greater depth than anywhere else in the district, its level varying between 49.5-82.5 feet from the surface. Village *Kamruddin-Nagar* in *Kandhla* block, lying on the south western border of *Budhana* block has been selected for detailed field surveys from this tract.

3) The **Western Uplands** accounting for approximately 45 percent of the total area of the district and comprising *tehsils* of *Kairana*, *Shamli* and parts of *Budhana* lie westward of river *Hindan* and east of the river *Yamuna*. Water level in this tract varies between 9.9-39.6 feet in *Thanabhawan* block of *Shamli tehsil* to 49.5-66.0 feet from the surface in *Shamli* block of *Shamli tehsil*. Further, barring north western boundary of *Kairana* block comprising low-lying villages along the banks of the river *Yamuna*, the entire tract is very fertile owing mainly to the absence of sand. Moreover, water levels in this tract are suitable for well irrigation. We chose the villages of *Karori* and *Bhainswal* lying in the fertile *Shamli* block for detailed primary surveys from this part of the district. It must however be understood that such regional diversity is not confined to the topography of the district but is equally pronounced in the parameters of socio-economic development examined in Table 7.7.

Let us briefly look at how each of the three chosen blocks fare with regard to some of the key socio-economic and infrastructural indices of development. The overarching picture that emerges is one of extreme diversity within an otherwise agriculturally advanced district. This diversity is reflected in several social, economic and infrastructural indices such as access to basic education and health facilities, state of roads, use of modern fertilizers, implements and machinery per unit area, cropping intensity etc. Clearly, while averages for almost all indices of development lie above district figures in case of *Shamli*, converse is true of *Jansath* block which performs below par on most counts. *Kandhla* block lies in between the two extremes, averaging close to district performance.

Table 7.7: Socio-Economic Indicators of the Extent of Development at Block Level

<i>Description</i>		<i>Geographical Region</i>			
		<i>Shamli Block</i>	<i>Jansath Block</i>	<i>Kandhla Block</i>	<i>Muzaffarnagar District</i>
<i>Demographic Profile</i>					
Average Household Size		7	6.6	6.8	6.7
Sex Ratio		840	888.1	833.7	866.4
Land-Man Ratio (i.e., persons per hect. of reported area)		0.15	0.25	0.16	0.18
% of Workforce to Total (M+F) Population		33.4	37.1	36.3	35.1
% Distribution of Total (M+F) Workforce into:	Main Workers	90.2	86.6	85.3	87.9
	Marginal Workers	9.7	13.4	14.7	12.1
% Distribution of Total (M+F) Main Workers into:	Cultivators	42.1	44.3	48.4	44.4
	Agricultural Labourers	34.2	37.6	31.1	34.4
	(Cultivators + Agri. Lab.)	76.3	81.9	79.4	78.8
	Manufacturing	10.4	7.8	8.8	8.1
	Others	13.3	10.2	11.8	13
	Total	100	100	100	100
<i>Social and Infrastructural Indicators</i>					
Literacy Rate	Male	63.7	51.8	59	54.5
	Female	30.2	22.9	23.2	24.1
	Total (M+F)	48.5	38.7	42.9	40.6
	Gender Gap	33.5	28.9	35.8	30.4
Per Lakh Population, number of:	Senior Basic Schools	22.6	14.2	13	17
	Higher Secondary Schools	6.5	4	6.2	5.5
Access to basic health facilities such as:	No. of Allopathic Clinics and PHCs per lakh population	4	1.7	2.5	2.7
Length of Pucca Roads per '000 sq. kms.		1126.4	491.2	643.7	633.2
Distance (in kms.) of the chosen Blocks from:	Nearest Railway Station	2	14	3	0
	District Headquarters	38	22	50	0

Contd. Table 7.7

Description		Geographical Region			
		Shamli Block	Jansath Block	Kandhla Block	Muzaffarnagar District
<i>Economic Indices</i>					
Net Sown Area as % of Total Cultivable Area (in hecets.)		95	95.4	97.2	96.5
Cropping Intensity (=GSA/NSA*100)		165.1	139.5	153	149.8
Fertilizer Use (in kg.) per hectare of GSA		407.7	182.1	197.5	234.2
Use of Chemical Fertilizers (in Qtl.) per hectare of NSA	N	5.7	2.1	2.4	2.8
	P	0.9	0.4	0.6	0.6
	K	0.09	0.03	0.07	0.05
	Total	6.7	2.5	3	3.5
Gross Irrigated Area as % of GSA		100	99.71	100	98.99
% Distribution of Total Irrigated Area by Source:	Canal	16.52	25.45	23.31	25.73
	Tubewell (Public)	1.78	1.96	3.1	2.97
	Tubewell (Private)	81.7	72.3	73.6	71.2
	Others (Dug Well, Pond)	0	0.26	0	0.12
	Total	100	100	100	100
Area under Sugarcane (viz., the most important Cash Crop of the District) as % of NSA		73.2	71.9	63.5	70.4
Extent / No. of Modern Implements and Machinery Used per 100 hecets. of NSA	Harrow and Cultivator	32	14	18	16
	Threshing Machine	20	5	9	7
	Tractor	14	6	9	9
	Tubewell (Private)	20.8	7.2	20.8	11.4

Source: *Sankhyakiya Patrika (Statistical Diary), 2003, Muzaffarnagar. Data on Sex Ratio is from Primary Census Abstract, Uttar-Pradesh, Census of India, 2001. * Note that literacy rates for U.P. are from PCA, U.P., 2001.*

Looking at the occupational structure of the three chosen blocks relative to the district record, we find that the percentage of workforce dependent on agriculture for its livelihood is uniformly high, hovering around the district average of nearly 80 percent (i.e., cultivators + agricultural Labourers = 78.8 percent). The high degree of

landlessness and semi-landlessness among the workforce is manifested in a very high percentage of agricultural labourers across the district. This is particularly marked at 37.6 percent in *Jansath* block. Such huge reserves of landless and semi-landless agricultural labourers have clear implications for rural wage rates that prevail in these areas.

In short, there is uniformity across blocks in terms of their demographic profile which is broadly in conformity with the overall district structure. However, when it comes to their socio-economic and other infrastructural indices of development, regional disparities could not be more glaring. The Table clearly brings out such differences in the extent of overall development across the chosen blocks, thereby suggesting tremendous heterogeneity that characterizes the countryside of Muzaffarnagar district.

SELECTION OF HOUSEHOLDS

Sampling procedure adopted for choice of households is stratified random sampling. This method of sampling is suitable in a situation where the population (cultivator households in our case) is not homogeneous but is economically differentiated into several classes with different socio-economic characteristics. By stratifying such populations into homogeneous groups with similar characteristics, stratified sampling enables us to make a detailed study of the socio-economic characteristics of each sub-group in detail. Keeping the above objective in mind, we divided the entire population from which our sample was collected into five groups based on the physical size of land operated. Information on village level distribution of area of operational holdings was acquired from Agricultural Census, 2005-06. Additionally, rough idea on village level landownership pattern was also obtained from the respective village *lekhpal*s. It may be pointed out in this regard that while the unit of Agricultural Census is *tehsil*, that of land records register known as '*khatauni*' is village. This means that while the former source includes any land owned by the resident of a village within the tehsil (in which the village lies), the latter gives us the distribution of land owned by a household within the village only and will therefore, exclude any land owned by a household outside of that village. After aggregating the holdings by acreage into five groups, we randomly selected households from each

strata into which the total population had been divided. Table 7.8 gives us the percentage distribution of sample holdings by groupings of operational area.

Table 7.8: Percentage Distribution of Sample Holdings and Area Operated by Groupings of Operational Area

Groupings by Acreage of Area Operated (acres)	Area Operated (acres)	No. of Sample Holdings	Percentage Distribution of Sample Holdings by Size-group of Operated Area	Percentage Distribution of Area Operated by size-group of Operated Area
Upto 2.5 acres	77.85	63 (83)	35.8 (42.35)	5.55
2.5-5.00	116.75	31	17.61	8.33
5.00-10.00	255.6	34	19.32	18.23
10.00-20.00	535.65	38	21.6	38.20
Above 20.00 acres	416.2	10	5.7	29.7
Grand Total	1402.05	176 (196)	100.00	100.00

Note: 1 (kutch) bigha = 4.8 acres = 5 acres (approx.). Figures in brackets include "landless" households.

Taking the population to comprise of cultivators alone (i.e., excluding all those landless households who neither owned nor operated any leased-in land), those operating upto 2.5 acres constitute 35.8 percent of the total sample households and operate a mere 5.5 percent of the total operated area of 1402.05 acres under the sample holdings. Only 5.7 percent of the total sample households comprise those who operate more than 20.00 acres, accounting for 30 percent of the total area. Such a skewed distribution of cultivated area in our sample is reflective of the highly unequal distribution of land ownership and operation that prevails in the overall population from which the sample was drawn.

The schedules that were formulated and used for intensive interviews of cultivators are briefly given below.

- A. Schedule 1: General
- B. Schedule 2: Assets
 - 2 a. Land
 - 2 b. Agricultural Machinery and Implements as well as Transport Equipment
 - 2 c. Livestock and Poultry

- C. Schedule 3: Crop and Livestock Output
 - 3 a. Crop Output
 - 3 b. Livestock Output
- D. Current Costs of Cultivation
 - 4 a. Material Costs
 - 4 b. Labour Costs
 - 4 c. Cost of Livestock Maintenance
- E. Employment Pattern in Farm and Non-Farm Operations
- F. Indebtedness Status
- G. Consumer Expenditure

Finally, it may be noted that the field work was carried out over several months during the year 2005-06. Whenever possible, this investigator stayed in the villages concerned to be able to interact with the respondents at their convenience and on several occasions.

Chapter 8

Determining the Economic Class Status of Sample Households

That the Indian peasantry is not homogeneous but is socio-economically differentiated is a fact which is evident from the concentrated structure of land holdings and assets. When the area being studied is agriculturally advanced like *Muzaffarnagar* district in Western Uttar-Pradesh, economic inequalities among cultivators are even more glaring. The immediate question arises regarding the choice of a statistical measure or index, on the basis of which the class status of peasant households can be determined. Conventionally, size of operational holding has been widely used as an indicator of economic status of those deriving their incomes from agricultural land. All official Indian data sources including the National Sample Survey Organization (NSSO) and Agricultural Census define large, medium, semi-medium, small and marginal cultivators solely in terms of the magnitude of area operated by them.¹

But it has been noted for long that acreage as a measure of the scale of production of a farm leave alone the class position, is a far from adequate index.² Wide variations in land fertility, rainfall and irrigation, intensity of cultivation and size of family renders the physical size of landholding inappropriate as a sole index of scale of operation or of the cultivators' socio-economic standing. Alternative indices such as gross value of output per holding or value of assets per farm have been suggested by A.M. Khusro but they have their own measurement problems and cannot be used in isolation for demarcating classes within the peasantry.³

The type of use of labour in obtaining a livelihood, however is a most telling index of the economic and class position of a cultivating household. Clearly those who have very little land or other assets would be obliged to *work for others* in some

¹ NSSO, Report No.493, 59th Round. p. 16.

² See the discussion on the inadequacy of using farm size as an index of the scale of an operational holding in A.M. Khusro and U. Patnaik. (i) A.M. Khusro. 1964. 'Returns to Scale in Indian Agriculture'. *The Indian Journal of Agricultural Economics*. Vol. XIX, 3 and 4. July-Dec. (ii) U. Patnaik. 1972. 'Economics of Farm Size and Scale- Some Assumptions Re-examined'. *EPW*. Vol.7, 31-33, Special No., Aug.

³ A.M. Khusro,1964. 'Returns to Scale in Indian Agriculture'. *The Indian Journal of Agricultural Economics*. Vol. XIX, 3 and 4. July-Dec.. Also see U. Patnaik. 1987. *Peasant Class Differentiation: A Study in Method with Reference to Haryana*.

form either as wage-paid labour or as tenants retaining a share of crop, to obtain their livelihood. Those who have enough land and assets to employ themselves and family members in production would be mainly self-employed producers while those endowed with a great deal of land and assets would rely mainly on employing the labour of others without resources. These were the considerations underlying both V. I. Lenin's class analysis of rural societies of Russia and European countries in 1920, and Mao Zedong's analysis of rural society in China in 1933.⁴

A "Labour Exploitation Index", firmly located within the Marxist framework and quoting the rationale of the above-mentioned writings had been proposed by U. Patnaik as a method to demarcate classes within the agricultural population.⁵ Teodor Shanin compared this proposal to the attempts by the post-revolution scholars of agrarian economy in Russia to similarly demarcate classes.⁶ The index suggested by U. Patnaik has been empirically applied and tested by scholars using primary data in different agro-economic and social environments in the world (Brazil, Bangladesh, Pakistan) and in India, but so far it has not been applied to Uttar Pradesh.⁷ The present study applies the "Labour Exploitation Criterion" to our sample of 196 households (176 cultivator and 20 landless households) spread across six villages of *Muzaffarnagar* district in Western Uttar-Pradesh whose overall characteristics have been discussed in the previous chapter.⁸

⁴ (i) V.I. Lenin. 1899. *The Development of Capitalism in Russia*. Vol.3. Collected Works. (ii) V.I. Lenin. 1920. 'Preliminary Draft Thesis On The Agrarian Question'. Selected Works. pp. 586-595. (iii) Mao Tse-Tung. 'How to Differentiate Classes in Rural Areas'. 1933. *Selected Works*. Vol.3,4.

⁵ U. Patnaik 1976. 'Class Differentiation within the Peasantry: An Approach to Analysis of Indian Agriculture'. EPW. September.

⁶ T. Shanin. 1980. 'Measuring Peasant Capitalism. The Operationalization of Concepts of Political Economy: Russia's 1920s- India's 1970s' in E. J. Hobsbawm et.al. (ed.). *Peasants in History –Essays in honour of Daniel Thorner*. pp. 83-104.

⁷(i) Ednaldo Araquem da Silva. 1984. 'Measuring the Incidence of Rural Capitalism: An Analysis of Survey Data from North-East Brazil'. *Journal of Peasant Studies*. (JPS) 12,1,Oct. (ii) Haroon Akram-Lodhi, 1993 'Agrarian Classes in Pakistan: An Empirical Test of Patnaik's Labour-Exploitation Criterion'. *JPS*. Vol. 20,4 July. pp. 557-589. (iii) U. Patnaik. 1987. *Peasant Class Differentiation: A Study in Method with Reference to Haryana*. (iv) Venkatesh Athreya Gustav Boklin, Goran Djurfeldt and Staffan Lindberg. 1987. 'Identification of Agrarian Classes: A Methodological Essay with Empirical Material from South India'. *JPS*. Vol.14, 2.

⁸ Though a total of 200 households were interviewed (180 cultivator and 20 landless), four have been dropped from the sample owing to non-responsiveness of respondents.

8.1. The “Labour Exploitation Criterion”⁹

U. Patnaik’s “Labour Exploitation ratio” is defined as the use of **net** hired-in labour relative to family labour on a given operational holding during a production period. It is denoted by $E=x/y = (a+b)/y = [(H_i - H_o) + (L_o - L_i)] / y$

where,

$x = (a + b)$ = Net use of outside labour on the operational holding

$a = (H_i - H_o)$ = Direct hiring-in of net labour days against wages (time or piece rate, cash or kind) on the operational holding where H_i = Total labour days hired-in on the operational holding and H_o = Family labour days hired-out

$b = (L_o - L_i)$ = Indirect hiring-in of net labour days in the form of rent received on land leased-out where L_o = Total labour days on land leased-out and L_i = Total labour days on land leased-in

y = family labour days on self-cultivated operational holding

Thus defined, the E-ratio makes overt, the covert exploitation of labour which is an inherent feature of production relations under the capitalist as well as transitional modes of production. These relations are necessarily exploitative in nature because as we have seen a minority of landholders control the bulk of the land (and the resulting finance) from which the majority have to get a livelihood, which the latter can do only by selling their capacity to work for this minority, either directly against wages or against a share of the crop which they produce on others’ land, while handing over the bulk to the owner. A portion of labour time per labour-day, which is the surplus labour over and above necessary labour (embodied in wages or in the crop share retained by the worker) is appropriated by the minority by virtue of their control over the means of production. By focusing on the ratio given by net surplus labour appropriated on an operational holding relative to surplus labour in self-employment, E-ratios empirically quantify the extent of this exploitation implicit in production relations in agriculture.

While the thrust of the E-ratios as formulated above is on the production relations of an agrarian economy, the index can be and has been extended to the circulation sphere by taking into account surplus labour appropriation by way of high interest rates charged by usurious moneylenders.¹⁰

⁹ U. Patnaik. 1987. *Peasant Class Differentiation: A Study in Method with Reference to Haryana*.

¹⁰ U. Patnaik. 1987. *Peasant Class Differentiation: A Study in Method with Reference to Haryana*. Ch. 3. p.58.

Given the widely prevalent practice of lending money at excessively high interest rates by the very class which monopolizes landed property in *Muzaffarnagar*, our initial aim was indeed to try and capture this form of labour exploitation as well. However, the difficulty of obtaining data on the precise amount of money lent by those at the top of the class hierarchy has compelled us to confine ourselves to the production sphere, albeit the most crucial and significant sphere for the purpose of identifying class differentiation within the peasantry. Moreover, the class which extracts surplus in exchange via lending money at usurious interest rates is often the class which also exploits labour in the production process, especially in agriculture. Even when this is not the case, the differential treatment meted out by moneylenders to cultivators is determined by their perceived risk of lending which in turn is associated with the class position of the producer defined in terms of production relations. This implies that an extension of the 'labour exploitation index' to the exchange sphere would only reinforce the socio-economic dominance of those at the top of the rural class structure.

It is equally important to note that the applicability of "labour exploitation criterion" is by no means restricted to a countryside defined by a noticeable use of wage labour relations in production. As an economic index determining the class status of peasant households, it is equally effective even in backward areas where surplus extraction through the use of others' labour mainly takes the form of rent. The fact that the index enables us to incorporate different forms of labour exploitation, direct or indirect, makes its application particularly appropriate in *Muzaffarnagar*, which though agriculturally advanced, is marked by the existence of a whole range of tenurial relations.

Before we proceed to analyse the class structure of sample households based on E-ratios, let us briefly look at the many forms in which surplus labour is appropriated by the privileged class at the expense of the poor and marginalized in the specific context of our study area.

8.2. Complexities Involved in the Computation of E-ratios in the Specific Context of *Muzaffarnagar* District

A careful examination of the many forms in which surplus appropriation takes place in agricultural production across the surveyed villages is a must for any meaningful application of the “labour exploitation index” to our sample households. This is because how we interpret these complexities involved in agrarian relations has a direct bearing on what estimates we get of net hired-in labour days and hence, economic class status based on E-values of a cultivator household. Below, we describe the several complex forms in which surplus labour is extracted in the specific context of *Muzaffarnagar* district. The class position of an individual household based on E-ratios cannot be assessed properly unless such exploitation as is implicit in the many labour contracts widely prevalent in *Muzaffarnagar* countryside is taken note of.

Forms of Surplus Labour Appropriation in the surveyed villages

Surplus appropriation through the use of net hired-in labour days in agricultural production across our sample villages assumes several forms. Labour is not only hired-in directly against time or piece rate wages (cash or kind), indirect amassing of surplus labour days through rent collection is common even in an agriculturally advanced area like *Muzaffarnagar*. First we have to distinguish between casual labour, and labour employed on longer contracts as farm servants. While extensive use is made of casual daily wage labour in farm operations in our area, the practice of keeping farm servants who are usually migrant labourers from Bengal or Bihar is equally widespread across the surveyed villages. The duration for which the latter are employed by a cultivator household varies from six months during the sugarcane harvesting season to eight to ten months per annum when their contract is terminated in the month of May following the harvest of wheat, the most important staple crop of the district. Only in rare cases involving local farm servants residing within the village are they employed at a landlord-turned capitalist and rich peasant’s holding for one whole year. Not only is their average monthly remuneration paltry sum of approximately Rs.1000 to 1500, they are also expected to work for much longer hours per day, thereby increasing manifold the extent of exploitation implicit in such migrant labour contracts.

A normal eight hours work day limit for a casual daily wage labourer is stretched to almost double the time to nearly fifteen to sixteen hours a day for a farm servant in *Muzaffarnagar*. A farm servant's gross monthly salary of Rs.1500 on an average (which includes the cost of food, medicines, intoxicants etc.) is equivalent to the amount he would have earned had he hired himself out as a casual daily wage labourer for 25 labour days at the then prevailing wage rate of Rs.60 per labour day. However, being a farm servant, he ends up working for *at least* 45 labour days (standardizing the work day at 12 hours) in return for remuneration worth only 25 labour days (i.e., Rs.1500). Thus 20 extra labour days is worked by the farm servant, and appropriated by his employer. The effective wage per standardized labour day for the farm labourer works out to only Rs.33.33 compared to Rs.60 per day for the casual worker.

It is not a new finding that the daily return to work for farm servants is much lower than for the casual worker, this finding is reported in all studies of rural labour not only in India but in other countries as well. What the rural worker needs is not only an adequate daily wage, but also the certainty of finding employment at that wage for most of the days of the month. In a situation where unemployment and underemployment prevails, the probability of finding wage-paid work for 25 days per month giving Rs.1500, may not be high for the casual wage worker. A farm servant entering into contract is basically trading a lower-than-wage return to his labour, for the certainty of monthly earnings. What is new in the context of our district is that farm servants are found to be generally migrants from other regions (with even lower average wages), hence these migrant are vulnerable to particularly onerous work demands.

This has a crucial bearing on the exact location of an agrarian household in the class hierarchy of rural society, since it has implications for the employer's wage bill and hence, profitability of direct cultivation using farm servants. To take account of the higher degree of exploitation implicit in migrant labour contracts, we have considered these farm servants separately from casual daily wage labour and have standardized the working day by taking one labour day of a farm servant to equal two labour days of family workers and 1.5 labour days of casual daily hired-in labour.

A main form of surplus labour appropriation in the district is hiring-in of casual labour on both time and piece rate wages. The unorganized agricultural labourers are pitted against a unionized lobby of influential farmers making labour hiring against piece rates all the more exploitative. From wheat harvesting to mustard and *urad* weeding to intercultural operations in sugarcane as well as sugarcane harvesting, this practice of direct hiring-in of agricultural labourers on piece rate basis, rather than time rates, is prevalent throughout the district. In *Shamli* where the practice of sowing mustard in wheat is very common, a wheat harvesting contract varying from 30 kg. wheat per bigha in *Bhainswal* to 15 kg. in *Kheri-Sarai*, also entails harvesting of mustard sown in wheat, without any payment received for the harvesting of mustard. In case of sugarcane tying, more often than not, the labourer on piece rate basis ended up tying more than he was paid for by his employer.

Working on piece rate basis means harder work relative to working on time rate basis for a remuneration of Rs. 60 per bigha. This can be clearly seen from the fact that hiring-in of labour on piece rate basis often requires the labourer to tie a part of the crop twice, while paying him/her for tying it only once. Instead of paying the worker for the 1.5 labour days it takes to tie a bigha twice, he is paid only for one labour day. Thus an extra half a labour day is appropriated by the employer. There are numerous such examples. Clearly, in all such cases involving piece rate contracts, surplus labour extraction is more than in situations where labour is directly hired-in on time rate basis.

A slight variant of the above form of hired-in labour commonly found in *Muzaffarnagar* can be seen in farm operations such as sugarcane and mustard harvesting. Unlike the above mentioned time and piece rate contracts which are formal in nature, harvesting of sugarcane often involves informal labour arrangements between the owner and the toiler. Landless and semi-landless agricultural households requiring fodder for their livestock usually harvest a farmer's sugarcane crop in exchange for sugarcane top which is used as green fodder for their draught and milch animals. The specific quantity of sugarcane harvested throughout the harvesting season lasting over six months is flexible and depends on the former's fodder requirement per day. The use of such informal labour by cultivator households in

specific agricultural operations has been treated as hired-in labour and appropriate value has been imputed to the return in kind that the labourer gets.

The numerous ways noted above in which surplus labour is appropriated by net hirers-in of labour are primarily confined to those who engage themselves in direct cultivation using both family and hired-in labour. However, indirect extraction of surplus labour days through rent collection can by no means be ignored while ascertaining the overall economic status of a peasant household even in an agriculturally advanced area like *Muzaffarnagar*. For rent, arising from monopoly ownership of landed property, as a means of surplus appropriation plays an important, at times even a defining role in determining a cultivator's class status in our sample villages. Such indirect hiring-in (or hiring-out) of net labour days in the form of rent received (or paid) on land leased-out (or leased-in) has been included by us in the estimation of E-values, which determines the economic class status of our sample households. The (net) surplus labour days appropriated as rent (both cash and kind) have been estimated using U. Patnaik's formula, which is given as $(k_1L_o - k_2L_i)$ where k_1, k_2 are the rental shares in total output on land leased-out and leased-in respectively while L_o, L_i are total labour days on land leased-out and leased-in respectively.¹¹

The form in which rent is extracted varies from fixed cash rent to share of produce, with the tiller's share ranging anything between one-fifth to one-half of the gross output depending on the type of crop sown as well as bargaining position of workers vis-à-vis landowners.

To begin with, socio-economic class differences among cultivators are clearly visible in the pattern of tenancy observed across the district. Our survey brought to light the fact that the phenomenon of leasing-out is restricted mainly to those households who either do not have adult male working members in the family or to those whose holding is highly fragmented into several small parcels with considerable distance separating them, some of which may be inconvenient for the farmer to operate. The latter option is often confined to those who can afford to let go of such inconveniences, namely the rich peasants owning huge tracts of land. However, the bulk of the cultivating peasantry comprising the small and poor farmers are faced with

¹¹ U. Patnaik. 1987. *Peasant Class Differentiation: A Study in Method with Reference to Haryana*. Ch. 3. p. 57.

very adverse conditions in the land-lease market and hence, prefer to retain their tiny holdings for self-cultivation for as long as they can.

Second, a disproportionately large fraction of the total leased-in area on fixed cash rent basis is heavily skewed in favour of those at the top of the rural class hierarchy. This is primarily owing to the fact that at least one year's *advance payment in cash* must be paid in order to lease-in land on fixed cash rent basis. The amount of cash rent per bigha of leased-in land varied between Rs. 1000 to Rs.2000 per annum during 2005-06 depending on the availability of irrigation facility as well as quality of land. These terms of advance rent payment, make leasing unaffordable for the vast majority of the toiling poor on fixed cash rent basis. Instead, in the absence of non-farm employment opportunities, they are forced to resort to leasing-in land on sharecropping basis on extremely onerous terms. In fact, leasing-in of land on crop sharing basis is solely confined to those at the bottom of the class hierarchy. This is true of all the villages surveyed.

Our fieldwork revealed that long-term sharecropping contracts of one year and above are far more widespread in villages across *Jansath* block than in villages of *Shamli* where land leasing based on fixed cash rent is the dominant form of indirect surplus appropriation. Alternatively, sharecropping contracts with lease duration of a year or more are not very common in *Shamli* where short term leases, in which a specific crop is cultivated on share of produce basis, is as prevalent as in any other part of the district. This is particularly true of universally sown crops such as paddy, mustard, potato and pulses like black gram, *masoor* and *moong*. While paddy and pulses in the two villages of *Jansath* (*Nagla-Kabir* and *Kawal*) are sown on one-fourth share of produce basis, as much as four-fifths of the total output is claimed by the landlord-capitalist in rural *Shamli*. Terms of lease differ in the two cases. While labour is entirely performed by the sharecropper in all such cropsharing contracts, division of material expenses vary depending on the produce sharing arrangement between the landlord and the tiller. If output is shared in the ratio of 1:5, then, expenditure on all material inputs such as seed, water, fuel, fertilizers and pesticides is incurred by the landlord. However, when land is leased-in on one-fourth crop share basis, the sharecropper is required to meet 25 percent of total expenses on fertilizers and pesticides in addition to performing all the labour required.

Further, in places where vegetables are sown such as in *Kawal* village, it is common practice to get them cultivated on sharecropping basis. The share of the tenant usually varies between one-third and one-half of the total produce. Fruits and vegetables including potato, chilli, peas, cauliflower, beans, watermelon, marigold etc., are some examples. In all such cases, apart from labour which is the sole responsibility of the sharecropper, the tiller must meet all expenses incurred on ploughing and sowing while at the same time sharing equally in all other material costs of cultivation such as water, fertilizers, pesticides, manure etc. in return for an “equal” share in gross output.

In a district marked by the existence of a multitude of contracts between the tiller and the land owner, it is imperative that the criterion adopted for determining a peasant household’s class status be sensitive to labour exploitation underlying such agrarian relations. The ‘E’ criterion enables us to capture exploitation of labour through appropriation of surplus labour days implicit in the host of agrarian relations in *Muzaffarnagar* district which are inherently antagonistic in nature. The following section deals with the determination of rural classes in our sample of 176 cultivator and 20 landless households based on such a criterion.

8.3. Identifying Economic Classes in our Sample Households

U. Patnaik used the ‘labour exploitation ratio’ to define *six* classes within the population dependent on agricultural production – landlords, rich peasants, middle peasants, small peasants, poor peasants and labourers. We combine two classes at each level to divide our sample households drawing a living from land into *three* broad groups constituting first, landlords plus rich peasants; second, middle peasants (in which we include the small peasants) and third, poor peasants (within which we include the labourers).

The top class comprises landlords as well as rich farmers representing the capitalist tendency. It is this combined class which commands the bulk of the owned and operated area and assets like agricultural machinery and livestock. The defining feature of this class is that their main source of income comes from appropriating surplus by exploiting outside labour. Landlords appropriate surplus labour days mainly by extracting exorbitant rents from petty tenants on the land leased-out by

them. Rich peasants, representing the capitalist tendency, appropriate surplus labour days primarily by directly hiring-in labour for agricultural production organized along capitalist lines. Usurious money-lending, widely practiced by both landlords and rich peasants is another form in which surplus is extracted from the lower rung of the indebted peasantry. The E ratios for this class as a whole can take any value between +1 and $+\infty$, i.e., $(+1 \leq E \leq +\infty)$. For landlords, $E \rightarrow \infty$ (since family labour days in self-cultivation are by definition zero which we treat as tending to zero) whereas for rich peasants, $E \geq +1$ (owing to positive family labour days on own holding).

Middle peasants are defined as those class of cultivators who draw their living mainly by self-cultivation on own holdings using family labour and comprise upper middle as well as lower middle peasants. Within the middle peasants, upper middle peasants are those who do exploit hired-in labour to some extent but to a lesser degree than the family labour days they put in. Lower middle peasants are those who are obliged to hire out their labour for wages, but to a lesser extent than the labour they perform on their operational holding. While the upper middle peasants may generate some surplus which they can put into agricultural production, lower middle peasants find it difficult to make ends meet. The feature common to both categories is that the extent of net hiring-in or net hiring out of their labour is less than the family labour days in self-employment on their operational holding. The middle peasants are thus identified by the fact that the 'E' values lie between +1 and -1, i.e., $(-1 \leq E \leq +1)$. Upper middle peasants E value lies between (+1 and >0) while lower middle peasants E value falls in the range (0 to -1).

Poor peasants or the semi-landless are the marginalized class of tillers who derive their income primarily by working on other people's land. They are the 'have-nots' who, barring owning a tiny proportion of the total area, do not have cheap and easy access to means of production and are forced to hire themselves out either directly in return for wages or indirectly through leasing-in land on extremely onerous terms. The net hired-out labour days by such a vulnerable section of cultivators are at least equal to the total number of family labour days worked on their own inadequate holdings. This means that the 'E' values for the class of poor peasants will be less than or at most equal to -1, i.e., $E \leq -1$. The ratio will however tend towards minus infinity in case of landless agricultural labourers for whom family labour days on own

holding which is nil, are treated as tending to zero. We have clubbed the poor peasants and landless labourers together for the purpose of the tabulation.

It is important to note that the E-ratios which determine the economic class status of our sample households have been estimated on the basis of labour-days hired-out in both farm and non-farm employment. The economic class status of seven households was affected by including such hired-out labour days in casual daily non-farm employment, with the number of poor peasant households increasing by seven while that of middle class (lower middle within this) households fell by the same number. The distribution of sample holdings by labour use index as seen in Table 8.1a represents their economic class status after taking into account labour days hired-out in both farm and non-farm employment.

Additionally, the distribution of households by economic class and acreage throughout has been obtained after taking into account (net) surplus labour days appropriated as rent, as already noted above. The labour day equivalent of rent (both cash and kind), the 'b component of e-ratios', has been included while estimating the e-values of our sample households. The indirect hiring-in of (net) labour days in the form of rent received (or paid) on land leased-out (or leased-in) has been calculated using U. Patnaik's formula¹², which is as follows:

$$\text{Net surplus labour actually taken as rent} = (k_1L_o - k_2L_i)$$

where,

k_1 = share of rent to output on land leased-out; k_2 = share of rent to output on land leased-in; L_o = Total labour-days on land leased-out, and L_i = Total labour-days on land leased-in.

The factors affecting farmers' incomes and their overall well-being will be examined with respect to the three broad classes within the peasantry as mentioned above. But we will also study the data by using the standard method of farm-size groups. This will enable us to see what difference if any, is made by directly applying a labour-use based index to households to separate out groups termed classes, compared to the standard method of grouping farms according to farm size. Clearly the two methods of grouping must be associated – for example we would expect the bulk of landlord and rich peasant farms to be much larger than average farm size just

¹² Ibid.

as the bulk of middle peasant farms would be close to the average size and the poor peasants would register lower than average farm size. But while we can expect association, the two methods of grouping would not be identical. This is very clear when we look at Table 8.1a which gives the cross-classification of the sample holdings by both farm size groups, and by classes using the labour use index. Barring the largest farms above 20 acres which comprise only landlords-turning capitalists and rich peasant class households, all other farm-size groups contain cultivators of varying class status. The smallest farm-size group of up to 2.5 acres is a mix of 1 rich, 20 middle and 42 poor households. The 5 to 10 acres size group contains 21 rich, 12 middle and 1 poor peasant. Clearly, the acreage grouping mixes up households of different class status.

Table 8.1a: Distribution of Sample Holdings and Operated Area by Economic Class and Size-groups of Area Operated

Size-Groups of Area Operated (in acres)	LL + Rich Peasant		Middle Peasant		Poor Peasant		All	
	Number of Holdings	Area Operated (acres)	Number of Holdings	Area Operated (acres)	Number of Holdings	Area Operated (acres)	Number of Holdings	Area Operated (acres)
Upto 2.5	1 (1.58)	2.4	20 (31.75)	35.4	42 (66.67)	39.05	63 (100.00)	76.85
2.5-5.00	10 (32.26)	41.55	18 (58.06)	65.8	3 (9.68)	9.4	31 (100.00)	116.75
5.00-10.00	21 (61.76)	165.05	12 (35.29)	83.15	1 (2.94)	7.4	34 (100.00)	255.6
10.00-20.00	37 (97.37)	525.45	1 (2.63)	10.2	0 (0)	0.0	38 (100.00)	535.65
Above 20.00	10 (100.00)	446.2	0 (0)	0.0	0 (0)	0.0	10 (100.00)	446.2
All	79 (44.89)	1180.65	51 (28.98)	194.55	46 (26.14)	55.85	176 (100.00)	1431.05

Source: Fieldwork data. Figures within brackets in each cell denote percentage to total number of holdings in each acreage group.

Table 8.1b gives us the average net hired-in labour days in farm employment only for the same matrix. Looking at the average net labour-days hired in or out per household in Table 8.1b, the sole rich holding in the 0-2.5 acre group *hires-in* 166 labour days, while in the very same size group the poor peasants *hire out* 196 labour days. In the 2.5 to 5 acres size group, the rich peasants *hire in* 185 labour days while

the poor peasants *hire out* 242 labour days. For this size group the average is 41 days hired-in net, which taken by itself as is conventionally the case, obscures the actual variation ranging from +185 to -242 labour days. Similarly, in the 5 to 10 acres group, the rich peasants *hire in* 427 days net while the poor peasants in the very same group *hire out* 159 days net (rounding the figures in every case). Thus holdings of very different, indeed opposite class status are being added together in every farm size group, yet this method is routinely used. We get an average of 288 days net hiring in for this acreage group, which by itself would give us no idea at all of the actual differentiation ranging from +427 to -159.

Table 8.1b: Average Net Labour days Hired-in/Hired-out in Farm Work by Economic Class and Farm-size Groups

Size-group of Area Operated (in acres)	Per Holding, Average (Net) Labour days Hired-in/Hired-out in Farm Work by Economic Class and Acreage Groups			
	LL + Rich	Middle	Poor	All
0-2.5	166.10	6.78	-196.10	-125.94
2.51-5.0	184.97	8.72	-241.80	41.33
5.01-10.0	426.94	83.26	-158.90	288.41
10.01-20.0	812.85	64.20	0.00	793.14
Above 20.0	2616.05	0.00	0.00	2616.05
All	850.85	26.58	-198.27	337.80

Sample Size (n) = 176

In Table 8.1c, the labour-days in non-farm employment are also taken into account, and not only farm work. The average hired-out labour days for poor peasants accordingly increases from 198 to 308 and the average labour days hired in by middle peasants decreases.

Thus looking at the net labour days hired-in/hired-out after including non-farm employment, while the position of the rich remains unaltered, that of the cultivators hitherto called middle peasant changes appreciably, with 7 out of the 45 middle peasants operating below 5 acres, shifting down to poor peasant status because their total hired-out labour days now exceeds self-employment. This reduces the total number of middle peasants from the earlier recorded 58 to 51 and accordingly, increases the number of poor peasants from 39 to 46 as shown in Table 8.1a. As

discussed earlier, the distribution of holdings based on the labour-use index in Table 8.1a has been obtained after including labour-days hired-out in both farm and non-farm employment.

Table 8.1c: Average Net Labour days Hired-out/Hired-in in Farm and Non-Farm Work by Economic Class and Farm-size Groups

Size-group of Area Operated (in acres)	Per Holding, Average (Net) Labour days Hired-in/Hired-out in Farm and Non-Farm Work by Economic Class and Acreage Groups			
	LL + Rich	Middle	Poor	All
0-2.5	166.10	3.19	-307.24	-201.18
2.51-5.0	184.99	8.27	-241.80	41.08
5.01-10.0	426.96	83.25	-518.90	277.83
10.01-20.0	812.85	64.20	0.00	793.15
Above 20.0	2616.06	0.00	0.00	2616.06
All	850.86	25.02	-307.57	308.78

Sample Size (n) = 176

In the smallest acreage group, 67 percent of the total holdings are net-hirers out of their labour and their dependence on non-farm employment is reflected in the considerable increase in net labour days hired-out by them from 196 in farm work alone to 307 when both farm and non-farm employment are considered. At the same time, the average net labour days hired-in by 20 middle class holdings in the 0-2.5 acre group falls from 6.78 in farm work to 3.19 when both farm and non-employment are taken into account since they are net hirers-out of non-farm labour.

As expected, the percentage of rich holdings to the total number in each acreage group rises with an increase in farm-size, while that of households belonging to the poor class falls sharply. Consequently, the average number of net labour days hired-in by acreage group also registers an increase with an increase in the physical size of landholding. There is clearly a positive relation between economic class and farm-size, but we would wish to know the extent of the positive association. Therefore in the next section, we carry out a non-parametric statistical test namely the *chi-square* test of association between our two methods of grouping viz., economic class and farm-size.

8.4. Degree of Association Between the Two Methods of Grouping

Table 8.2a gives the cross-classification of the total number of holdings, grouped by both farm acreage, and the class position, with three classes and five farm size groups. The class position of our sample households has been derived after taking into account labour days hired-out in both farm and non-farm employment, as noted above. This can be treated as a contingency Table. Application of Chi-square test of association between economic class and acreage to this 5 by 3 contingency Table with 8 degrees of freedom, gives an observed chi-square value of 143.69 which is far above the critical value corresponding to the probability of 0.01. Hence, we can reject the null hypothesis that no association exists between the two methods of grouping data. The results are summarized below.

Table 8.2a: Distribution of Sample Holdings by Economic Class and Farm-Size Group

Farm-size group	Economic Class			
	Landlord + Rich	Middle	Poor	All
0-2.5	1	20	42	63
2.51-5.0	10	18	3	31
5.01-10.0	21	12	1	34
10.01-20.0	37	1	0	38
Above 20.0	10	0	0	10
All sizes	79	51	46	176

Pearson $\chi^2(8) = 143.6979$ $Pr = 0.000$

Alternatively, since the probability value is 0.000 which is less than 0.005, the observed chi-square value is statistically significant at 1 percent level. The null hypothesis of no association between acreage and economic class stands rejected. The two criteria of grouping data, economic class and physical size of landholding are associated.

However there are too many cells with <5 observations in Table 8.2a for the exercise to have much meaning. So we pool together holdings into three farm-size groups by taking 0 to 5 acres, 5 to 10 acres and >10 acres and two economic classes with landlords and rich peasants in one class, middle and poor peasants in the other class. This is shown in Table 8.2b, which can be treated as a contingency Table. Application of Chi-square test of association between economic class and acreage to

this 3 by 2 Contingency Table with 2 degrees of freedom, gives an observed chi-square value of 100.32 which is far above the critical value corresponding to the probability of 0.01. Hence, we can reject the null hypothesis that no association exists between the two methods of grouping data. The results are summarized below.

Table 8.2b: 3 by 2 Contingency Table

Farm-size group (acres)	Economic Class		
	LL and Rich Peasant	Middle and Poor Peasant	All
0-5.0	11	83	94
5.0-10.0	21	13	34
Above 10	47	1	48
All Sizes	79	97	176

Pearson chi2(2) = 100.3231 Pr = 0.000

Alternatively, since the probability value is 0.000 which is less than 0.005, the observed chi-square value is statistically significant at 1 percent level. The null hypothesis of no association between acreage and economic class stands rejected. The two criteria of grouping data, economic class and physical size of landholding, are associated.

Karl Pearson's "coefficient of mean square contingency", which is a measure of the extent of association in a contingency Table, is computed using the formula $C = [\chi_s^2 / (\chi_s^2 + N)]^{1/2}$.

It works out to $C = 0.602$. This indicates that a high degree of association exists between economic class grouping and acreage grouping.

Looking at Table 8.2b, we find that the observation in one of the cells continues to be less than one. Therefore, we repeat the exercise by pooling together holdings into two acreage groups on the one hand and into two class groups on the other as shown in Table 8.2c. For this new 2 by 2 contingency Table with 1 degree of freedom, Pearson's chi-square value drops to 89.81 and the co-efficient of contingency to 0.58 as can be seen in the results summarized below.

Table 8.2c: 2 by 2 Contingency Table

Farm-size group	Economic Class		
	LL and Rich Peasant	Middle and Poor Peasant	All
0-5.0	11	83	94
5.01 and above	68	14	82
All	79	97	176

Pearson $\chi^2(1) = 89.8084$ Pr = 0.000

Thus the observed value of chi-square continues to be substantially above the critical value corresponding to the probability of 0.01. Alternatively, the Pr value is once again 0.000 which is clearly less 0.005. Therefore, the null hypothesis of no association between the two methods of grouping data continues to be rejected at 1 percent level of significance. The extent of association between the two methods of grouping, economic class and acreage, despite the coefficient of contingency being relatively lower at $C = 0.58$, continues to be moderately high.

However, since the distribution of chi-square is continuous, whereas the distribution in a contingency Table is discrete, the approximation, for moderate values of N , is, as a rule, much improved by a correction due to Yates. The effect of the correction is to replace $(ad - bc)^2$ in the calculation of chi-square by $(|ad - bc| - N/2)^2$.

Applying Yates' correction to the value of chi-square for a 2 by 2 contingency Table, we get the following:

$$\chi_s^2(1) = N (|ad - bc| - N/2)^2 / r_1 r_2 c_1 c_2 = \mathbf{86.9523}$$
 where,

$N = 176$ is the total sample size; a, b, c, d are the cell frequencies given as

$a = 11, b = 83, c = 68$ and $d = 14$; r_1, r_2, c_1, c_2 are the marginal frequencies of the row and column totals respectively and are given as $r_1 = 94, r_2 = 82, c_1 = 79$ and $c_2 = 97$.

Thus, even after applying Yates' correction to the chi-square value, the observed value remains higher than the critical value of chi-square at 1 percent level of significance. The null hypothesis of no association between the two criteria therefore continues to be rejected. Our two methods of classifying holdings into varying socio-economic status, viz., economic class and physical size of a holding are indeed positively related.

Yet, despite the moderately high degree of association between the indices we have considered, it is important to apply the alternative index of labour use for a more accurate identification of classes of households. Aggregating data by the alternative labour use index gives us sharper results in terms of the actual extent of concentration not only of land resources but also of investment in new technology which in turn determines the variations in productivity and in the ability to generate economic surplus.

We observe from our data that households with the same operated area have widely different labour use patterns and hence widely varying E-values. Three households in two different villages operated exactly the same size of physical area of 3.2 acres and yet were being classified distinctly as belonging to rich, middle and poor economic classes respectively based on their E-values. The household in Karori village had an E-value of +4.6 and hence, quite clearly belonged to the rich class. The other two peasant households of Kamruddin-Nagar village had E-values of +0.1 and -1.6 and therefore, belonged to the middle and poor classes respectively. The difference in economic class status despite operating an equal area is primarily attributed to differences in ownership versus leasing in of land, besides of course variation in family size and the quality of land tilled among the three holdings. Differences in investment pattern indicating their access to crucial farm resources required for agricultural production played an equally important role.

In the case of rich peasant of Karori, the entire operated area of 3.2 acres was owned by the farmer and so, no rent had to be paid. This was however not true of the other two holdings where more than 40 percent of the gross output value had to be paid as rent on a part of the operational holding that was leased-in. In the case of middle peasant, rent paid on 1.2 acres that were leased-in on fixed cash rent basis out of a total of 3.2 acres operated formed 41 percent of the gross value of output. Finally, the poor peasant household was found to have a complex relation with the land lease market. While leasing-out 2 of the 2.6 acres owned by her, this household additionally leased-in 2.6 acres other than cultivating her own retained plot of 0.6 acres. Now, out of these 2.6 acres leased-in, 2 acres were leased-in on 50 percent share of produce basis while the remaining 0.6 acres were leased-in on fixed cash rent basis. In this

case, we found that the peasant was paying as much as 45 percent of the gross value of crop output as rent.

Thus, rent was one of the defining factors separating these three households from one another in terms of their economic class status. Besides, the rich household with a small family size of four retained and invested the entire surplus produced in agricultural production in modern agricultural machinery such as a tractor, electric tubewell (submersible) and had a draught animal. In sharp contrast to this was the case of the poor household, which had six family members, could neither manage to invest in tractor nor had any irrigation facility on her field owing to surpluses being absorbed in the form of rent.

The following two chapters will, therefore, use both the indices, viz., acreage and economic class for studying the socio-economic characteristics of the cultivating households in our sample.

Chapter 9

Structure of Asset Ownership and Patterns of Labour Use by Economic Class and Farm Size

A household's socio-economic position in the hierarchy of rural classes is first and the foremost, shaped by its control over the means of production. For control over the means of production implies lower per unit costs and hence, control over a larger surplus per unit area produced. Needless to mention, the larger the concentration of surplus in the hands of a tiny minority comprising the rural elite, the greater the socio-economic inequality between the classes. In other words, there is a direct link between the ownership of the means of production on the one hand and farmers' incomes and their overall well-being on the other.

Following the Marxist-Leninist theory of class differentiation within the peasantry, this chapter emphasizes that "the peasantry", as conceptualized by the populists and the neo-populists like Chayanov, is far from an undifferentiated homogeneous mass. In reality, socio-economic inequalities exist within "the peasantry" as a result of a highly skewed structure of landholding. It is this extreme inequality in the access to crucial resources like land and other non-land farm assets that results in the subjugation and domination of the landless and semi-landless rural poor by the rural rich monopolizing the ownership of means of production.¹

In other words, it is precisely the concentration of landed property in the hands of a rich minority and the consequent shortage of land relative to consumption needs with the vast majority of the rural poor that compels the latter to hire-out labour to meet their subsistence requirements. Alternatively, concentration of landed property in the hands of a few is what gives rise to exploitative relationships within the peasantry, thereby socio-economically separating one economic class from another.²

This chapter is divided into two sections. In the first section, we focus on the structure of asset ownership in our sample of 196 households (176 cultivator and 20 landless). Our findings show how based on the heavily skewed distribution of the

¹ V.I. Lenin. 1899. *The Development of Capitalism in Russia*. Vol. 3. Collected Works. See ch. 2, viz., 'The Differentiation Of The Peasantry'. pp. 70-187.

² U. Patnaik. 1999. 'Neo-Populism and Marxsim: The Chayanovian View of the Agrarian Question and its Fundamental Fallacy' in U. Patnaik's *The Long Transition*. See pp. 22-23.

means of production arises an equally lopsided and exploitative pattern of labour use separating one class from another. This detailed analysis of labour use pattern will form the subject of the second section.

9.1. Structure of Ownership of Farm Assets (Land and Non-Land) in our Sample Households

The extremely uneven spread of the means of production across the classes is the first defining feature of the three classes of the cultivating peasantry.

Let us specify at the outset that by means of production, we mean land and other non-land farm assets such as improved agricultural machinery and implements, livestock, tubewells and other irrigation fixtures, other tangible assets such as farm buildings etc.

Even a cursory glance at the distribution of farm assets across the classes would reveal a highly concentrated structure of asset holding in favour of the top strata of the cultivating population. This is true not only of land holding (ownership as well as operational) but is equally applicable to other farm assets (other than land) such as agricultural machinery and implements (tractor, thresher, harrow, sugarcane razor etc.), livestock (which includes both draught as well as milch animals), irrigation (electric and diesel tubewells), other tangible assets including buildings used for farm business (such as farm house, cattle shed, grain storage etc.). Below, we highlight the extent of inequality in asset ownership between the three classes demarcated by us based on the labour exploitation criterion, as discussed in Chapter 8. We begin by looking at the distribution of land holding followed by non-land farm assets such as those listed above.

A. Landholding (Ownership and Operational) Pattern by Economic Classes:

An examination of the land ownership pattern across our surveyed farms, as expected, shows a heavily skewed distribution of owned area in favour of the rich class of cultivators, even in our sample which clearly does not represent the actual distribution of households by size-groups of area owned or operated in the total population from which it was drawn. The need to study the socio-economic aspects of households belonging to each of the three economic classes, including the rich, explains the disproportionately large number of households belonging to the rich class

in our sample. Nevertheless, even a cursory glance at the distribution of owned area by class shows that it is heavily concentrated in the hands of the rich. This is clearly brought out by Tables 9.1a and 9.1b.

Table 9.1a: Distribution of Sample Holdings and Owned Area by Economic Class and Size-groups of Area Owned

Size-Group of Area Owned (in acres)	Landlord + Rich		Middle		Poor		All	
	Number of Holdings	Area Owned	Number of Holdings	Area Owned	Number of Holdings	Area Owned	Number of Holdings	Area Owned
Upto 2.5	2 (2.9)	4.2	26 (37.7)	44.1	41 (+25) (59.4)	36.95	69 (+25) (100.0)	85.25
2.5-5.00	12 (40.0)	47.3	17 (56.7)	63.8	1 (3.3)	2.6	30 (100.0)	113.7
5.00-10.00	23 (76.7)	180.14	7 (23.3)	49.65	0 (0.0)	0	30 (100.0)	229.79
10.00-20.00	33 (100.0)	479.2	0 (0.0)	0	0 (0.0)	0	33 (100.0)	479.2
Above 20.00	9 (100.0)	429.3	0 (0.0)	0	0 (0.0)	0	9 (100.0)	429.3
All	79 (46.2)	1140.14	50 (29.2)	157.55	42 (+25) (24.6)	39.55	171 (100.0)	1337.24

Source: Fieldwork. Figures within brackets represent the percentage to total number of holdings (excluding the 25 landless households) in that acreage group.

Table 9.1b: Percentage Distribution of Sample Holdings and Area Owned by Economic Class

Economic Class	Percentage Distribution of Sample Holdings and Area Owned by Economic Class			Area Owned Per Household (acres)
	No. of Holdings		Area Owned	
	n=176 (i.e., total excludes landless households)	n=176+20=196 (i.e., total includes landless households)		
Landlord + Rich	46.2	40.3	85.3	14.43
Middle	29.2	25.5	11.8	3.15
Poor	24.6	34.2	3.0	0.94 (0.59)
(Middle+Poor)	53.8	59.7	14.7	2.14 (1.68)
All	100.0	100.0	100.0	7.82

Table 9.1a shows the distribution of sample holdings and area owned both by economic class and farm-size group. It shows that the percentage of rich holdings to the total number in each acreage group rises with an increase in the size of area owned, while that of households belonging to the middle and poor classes falls sharply. As expected, there is a positive relationship between the physical size of land owned and economic class. Indeed, the two methods of grouping data were found to be highly associated using the chi-square test of association, as we saw in Chapter 8. However, it is clear from Table 9.1a that the two methods of aggregating data, viz., farm size and economic class are not identical and that acreage grouping mixes up holdings of varying class status. This is because even the smallest farm-size group of upto 2.5 acres is a combination of 2 rich, 26 middle and 41 poor class households, as Table 9.1a shows.

Further, an examination of Table 9.1b reveals that two-fifths (40.3 percent) of the sample households constituting the landlords-turned capitalists and rich class own a disproportionately large area amounting to as much as 85.3 percent of the total while the middle and poor peasant classes together account for less than 15 percent of the total owned area despite accounting for three-fifths of the total sample size. In other words, such is the concentration of ownership of the most crucial asset, viz., land that those at the top of the rural class hierarchy own nearly six times as much land as held by the majority forming the middle and poor peasant classes. This is clearly reflected in the stark contrast in average area owned per household between the three classes, as is shown in Table 9.1b above.

This lopsidedness in the structure of land ownership is reflected in the percentage distribution of operated area as well. Table 9.2 makes this amply clear.

Table 9.2 shows that the degree of concentration of operated area is only marginally better than that exists for owned area. With as much as 82.5 percent of the total operated area being concentrated in the hands of the 45 percent of the rich cultivating households, even as more than half the sample holdings operate less than one-fifth of the total area, the operation of the most crucial resource in farming, viz., land, is clearly monopolized by the rich. That operated area is as heavily skewed in favour of the rich class as is the distribution of owned area, is attributed to the phenomenon of reverse tenancy that is a typical feature of an agriculturally advanced area like

Muzaffarnagar, which has been one of the leading areas of the green revolution in North-Western Indian countryside. The degree of concentration of operated area could have been less than what the statistics above suggest had the rich class of landlords-turning capitalist farmers and rich peasants leased-out their land to the middle and poor classes. However, if we look at the percentage of owned area leased-out by each of the three classes, we find that it is indeed the bottom rung of the peasantry who is leasing-out more than twice as much owned area as each of the rich and middle classes.

Table 9.2: Percentage Distribution of Sample Holdings and Area Operated by Economic Class³

Economic Class	Percentage Distribution of Sample Holdings and Area Operated by Economic Class			Area Operated Per Household (acres)
	n=176 (i.e., total no. excludes landless households)	n=196 (i.e., total no. includes 20 landless households)	Area Operated	
Landlord + Rich	44.9	40.3	82.5	14.94
Middle	29.0	26.0	13.6	3.81
Poor	26.1	33.7	3.9	1.21 (0.85)
(Middle+Poor)	55.1	59.7	17.5	2.58 (2.14)
All	100.0	100.0	100.0	8.13 (7.3)

Table 9.3 shows that even though leased-out area accounts for only a small percentage (3.95 percent) of the total area owned in our sample, it is the poor class of cultivators for whom leased-out area as percentage of the total area owned is maximum at 8.1 percent.

Further, an examination of our survey data on tenancy reveals that the pattern of leasing-in/out of land only serves to reinforce the existing inequality in land ownership and operation pattern.

B: Tenancy Pattern by Economic Classes:

An examination of the tenancy pattern across our sample holdings reveals that approximately 10 percent of the total operated area in our sample was leased-in, out of which a disproportionately large percentage (82 percent) was leased-in on fixed

³ The percentage distribution of sample holdings and area operated in Table 9.2 has been obtained from Table 8.1a (Chapter 8) which gives the cross classification of the sample holdings by both farm size groups, and by classes using the labour use index.

cash rent basis while leasing-in on sharecropping was confined to 18 percent of the total leased-in area (Table 9.4a). Furthermore, the entire area leased-in by the rich is on fixed cash rent basis. For the middle and poor classes, however, more than two-fifths of the total area leased-in by them is on crop-share basis. Tables 9.4a and 9.4b show the distribution of total leased-in area as well as its distribution by the type of lease (fixed cash rent or sharecropping) for each class.

Table 9.3: Area Leased-out as Percentage to Total Owned Area by Economic Class

Economic Class	Area Leased-out as Percentage of Total Owned Area
Landlord + Rich	3.9
Middle	3.4
Poor	8.1
All	3.95

Table 9.4a: Distribution of Total Leased-in Area and by type of lease for each Economic Class

Economic Class	Economic Class-wise Distribution of Total Leased-in Area and by Type of Lease (in Acres)			Percentage Distribution to Total of type of Lease by Economic Class				
	On Cash Basis	Fixed Rent	On Crop-share Basis	Total	On Cash Basis	Fixed Rent	On Crop-share Basis	Total
Landlord + Rich	82.01		0.0	82.01	100.0		0.0	100.0
Middle	21.8		16.2	38.0	57.4		42.6	100.0
Poor	11.1		9.2	20.3	54.7		45.3	100.0
All	114.91		25.4	140.31	81.9		18.1	100.0

Table 9.4b: Percentage Distribution of Total Leased-in Area and by Type of Lease by Economic Class

Economic Class	Percentage Distribution of Total Leased-in Area and Type of Lease by Economic Class		
	Total	On Fixed Cash Rent Basis	On Crop-share Basis
Landlord + Rich	58.4	71.4	0.0
Middle	27.1	19.0	63.8
Poor	14.5	9.7	36.2
All	100.0	100.0	100.0

Clearly, with the landlord-capitalists and rich peasant class leasing-in a little less than three-fifths of the total leased-in area (58.4 percent), the prevalence of the phenomenon of reverse tenancy is obvious from Tables 9.4a and 9.4b. Further, the rich class accounts for more than 70 percent of the area leased-in on fixed cash rent basis, which is undoubtedly the dominant form of tenancy in our sample villages. Given the high profitability of direct cultivation in *Muzaffarnagar* district, especially for those owning the means of production, this observed phenomenon of reverse tenancy is expected. On the other hand, the entire area leased-in on sharecropping basis in our sample has been leased-in by the middle and poor peasant classes. Even within the class of middle peasants, it is mainly the lower middle class of cultivators whose E-values lie between 0 and -1 who lease-in land on crop sharing basis. Alternatively, given the extremely exploitative nature of such tenancy contracts whereby even the choice of crops sown is the sole prerogative of the owner of the land, that leasing-in land on sharecropping basis is confined to the lower strata of the cultivating population is not surprising. What does the pattern of leasing-out of land suggest?

To begin with, out of a total of 1337.24 acres of owned area in our sample, a mere 52.8 acres or 3.95 percent is leased-out. Further, of the total area leased-out, less than two-fifths (38.6 percent) has been leased-out on fixed cash rent while bulk of it, viz., more than three-fifths (i.e., 61.4 percent) was leased-out on sharecropping basis. This is evident from Tables 9.5a and 9.5b. Moreover, it is important to point out that the 30 acres leased out by the rich class on sharecropping basis as shown in Table 9.5a were actually leased-out by a single household owning 30 acres that was compelled to lease-out its land owing to the lack of able bodied adult male working members in the family. Infact, if we were to exclude these 30 acres from the total area leased-out by our sample holdings, then, leased-out area as percentage of total owned area actually reduces to less than 2 percent.

Table 9.5a: Distribution of Total (Net) Area Leased-out and by type of lease for each Economic Class

Economic Class	Economic Class-wise Distribution of Total Leased-out Area and by Type of Lease (in Acres)		
	Total	On Fixed Cash Rent Basis	On Crop-share Basis
Landlord + Rich	44.2	14.2	30.0
Middle	5.4	3.0	2.4
Poor	3.2	3.2	0.0
All	52.8	20.4	32.4

Table 9.5b: Percentage Distribution of Total (Net) Area Leased-out and by Type of Lease for each Economic Class

Economic Class	Percentage Distribution of Total Leased-out Area and by Type of Lease by Class		
	Total	On Fixed Cash Rent Basis	On Crop-share Basis
Landlord + Rich	83.7	69.6	92.6
Middle	10.2	14.7	7.4
Poor	6.1	15.7	0.0
All	100.0	100.0	100.0

It is important to point out that the above result has been arrived at on the basis of area leased-out on long-term duration for an year or more only. Short-term leasing out of land for the cultivation of a specific crop, a widely prevalent practise across our sample holdings, is not reflected in Tables 9.5a and 9.5b. However, the true extent of tenancy is reflected in **gross** (as opposed to the above analysed **net**) area under tenancy. An examination of gross sown area leased-out reveals that tenancy is far more widespread in our sample villages than results based on net sown area under tenancy would have us believe. Infact, if we do take into account short-term leasing-out of land by cultivators for the cultivation of specific crops such as paddy, pulses or even vegetables sown extensively in *Kawal* village, we find that area leased-out as percentage of net sown area more than doubles from 3.7 percent to 8.6 percent. The distribution of gross area leased-out by economic class is given in Tables 9.6a and 9.6b.

Table 9.6a: Distribution of Total (Gross) Area Leased-out and by type of lease for each Economic Class

Economic Class	Economic Class-wise Distribution of Gross Area Leased-out and by Type of Lease (in Acres)		
	Total	On Fixed Cash Rent Basis	On Crop-share Basis
Landlord + Rich	113.2	14.2	99.0
Middle	7.1	3.0	4.1
Poor	3.2	3.2	0.0
All	123.5	20.4	103.1

Table 9.6b: Percentage Distribution of Total (Gross) Area Leased-out and by Type of Lease for each Economic Class

Economic Class	Percentage Distribution of Gross Area Leased-out and by Type of Lease for each Peasant Class		
	Total	On Fixed Cash Rent Basis	On Crop-share Basis
Landlord + Rich	91.66	69.6	96.0
Middle	5.75	14.7	4.0
Poor	2.59	15.7	0.0
All	100.0	100.0	100.0

A number of interesting observations are brought to light by the above Tables on the pattern of land leased-out. Firstly, short term leasing-out of land on sharecropping basis is evidently rampant across our sample holdings. This is reflected in the more than doubling of leased-out area from 3.7 percent to 8.6 percent as percentage of net sown area on account of the inclusion of such short-term leasing.

Secondly, getting cultivation done on sharecropping basis is clearly the dominant form of tenancy when it comes to leasing-out. As much as 84 percent of the (gross) area leased-out is on account of sharecropping. In other words, leasing-out of land on fixed cash rent basis is insignificant in our sample holdings. This is particularly true of the rich class of capitalist farmers for whom income earned by way of leasing-out their land on fixed cash rent is far less remunerative than income earned from direct cultivation. For the poor however, land is being leased-out primarily in exchange for fixed cash rent. This is evident from the fact that the entire area leased-out by them is on fixed cash rent basis.

Thirdly, it is interesting to note that contrary to our expectation, the distribution of leased-out area is heavily skewed **not** in favour of the poor and middle peasant classes as we would indeed have expected but rather, in favour of the rich class. For it is the rich class of cultivators who account for more than nine-tenths (91.7 percent) of the total leased-out area in our sample. In an agriculturally advanced area where reverse tenancy exists (as has been shown already), the above distribution of total area leased-out across the three classes seems somewhat surprising and hence, demands a brief explanation. Out of a total of 99 acres leased-out, 30 acres have been leased-out on long-term basis (i.e., for an year or more) by a typical landlord to five sharecroppers owing to the absence of able bodied adult male members in the family. The remaining 69 acres are primarily short-term leases for the cultivation of specific crops such as paddy, pulses like black gram, moong etc. as well as vegetables or even fruits like watermelon. In short, these are mostly crops which are labour intensive in nature and which are grown primarily for family consumption and not for the market. Faced with the difficulty in procuring cheap labour on daily wage rate basis, they prefer to lease out the cultivation of such crops on sharecropping basis. In this regard, it must be noted that this is a peculiar condition of production in which the “landlord” is at the same time also a cultivator himself. For instance, he is a typical landlord when it comes to the cultivation of crops like paddy and pulses etc., the cultivation of which he leases-out to petty tenants on sharecropping basis. However, when it comes to the growing of economically important crops such as sugarcane and wheat, he engages in direct cultivation of his holding and is thereby, a cultivating capitalist farmer himself. It is then no wonder that short-term leasing-out of land on sharecropping basis is concentrated in the hands of the well-to-do section of farmers.

In other words, the pattern of tenancy as noted above reflects socio-economic class differences within the farming households. Such differences as reflected in the land lease market are equally evident in the distribution of other farm assets across the economic classes. This can be readily seen from the analysis that follows.

C: Distribution of non-land farm assets by Class and Farm-size

If the bulk of the acreage is commanded by a few at the top of the rural class hierarchy, it is then no wonder that the capital intensive resources with which to till that land are also predominantly at the disposal of that very class. The majority of the

households belonging to the rich class are indeed well equipped to organize agricultural production along capitalist lines, thereby enabling them to extract surpluses. This is in sharp contrast to the scenario that prevails for those at the margins who lack easy and cheap access to basic input requirements for farming and are thus, forced to hire themselves out to make ends meet. This is precisely what Tables 9.7a and 9.7b indicate.

Clearly, more than four-fifths of the total number of rich households owns a tractor and atleast one draught animal while a sizeable majority (71 percent) have installed electric tubewells (mostly submersibles) which entail a high fixed cost. The percentage of the poor households owning either of these (with the exception of draught animals) is insignificant. However, understandably, the numbers of the rich when it comes to owning thresher and diesel tubewell falls drastically to less than 50 percent of the total. The advent of modern threshers (on hire) in *Muzaffarnagar* countryside on the one hand and the rapidly rising price of diesel on the other perhaps explains the phenomenon of large scale selling of the now obsolete threshers by the class of the well-to-do farmers.

Table 9.7a: Percentage of Households to Total Number of Households in Each Class Owning Means of Production

Economic Class	Percentage of households to total number of households in each Class, owning Means of Production such as				
	Tractor	Thresher	Atleast One Draught Animal	Electric Tubewell	Diesel Tubewell
Landlord + Rich	81.0	43.0	81.0	70.9	44.3
Middle	23.5	9.8	70.6	25.5	37.3
Poor	8.7	2.2	39.1	4.3	13.0
All	45.5	22.7	67.0	40.3	34.1

Sample size (n) = 176

Table 9.7b: Percentage of Households to Total Number of Households in Each Acreage Group Owning Means of Production

Farm-size group (in acres)	Percentage of households to total number of households in each acreage group, owning means of production such as				
	Tractor	Thresher	Atleast One Draught Animal	Electric Tubewell	Diesel Tubewell
0-2.5	11.1	4.8	39.7	7.9	22.2
2.51-5.0	32.3	9.7	77.4	45.2	25.8
5.01-10.0	64.7	32.4	79.4	52.9	41.2
10.01-20.0	84.2	44.7	86.8	73.7	47.4
Above 20.0	90.0	60.0	90.0	60.0	60.0
All Sizes	45.5	22.7	67.0	40.3	34.1

Sample size (n) = 176

An examination of the percentage of households owning the means of production by farm-size group reveals a trend similar to the one witnessed above in case of grouping of sample holdings by economic class (Table 9.7b). Given the relatively high association between our two indices, i.e., economic class and acreage (as shown in Chapter 8), we would expect to see a rise in the percentage of households owning means of production with an increase in farm-size. Table 9.7b shows precisely this. For instance, we find that the percentage of households owning tractor rises from 11 in the smallest farm-size group to as high as 90 in the largest acreage group. The difference in the percentage of households owning threshers by acreage is equally notable, varying between 4.8 percent in the 0 to 2.5 acres category to 60 percent in the above 20 acres group. This positive relation between the percentage of households owning crucial non-land farm assets and the physical size of a holding is true of all the means of production as shown in Table 9.7b.

Thus, with the percentage of rich holdings rising with an increase in farm-size, there is indeed a positive relation between a household's access to crucial resources in farming and area operated.

If we look at the distribution of asset ownership by economic class, we find that it is highly skewed in favour of the rich. With the rich class comprising of landlord-capitalists and rich peasants owning a disproportionately large percentage of each of these assets (Tables 9.8a and 9.9a), economic inequalities among the

cultivating classes are bound to persist so long as the prevalent structure of asset ownership continues. So lopsided is the relationship among the three classes with regard to the ownership of the means of production that we find a rich household owning ten times as many tractors, twenty three times as many threshers, three times as many draught animals, twenty two times as many electric tubewells and eight times as many diesel tubewells as the poor class tillers on an average (Table 9.8a)!⁴

The same distribution when looked at by acreage grouping shows a rising concentration of ownership of farm assets with increasing farm-size till the 10-20 acre group, and a sharp decline thereafter for holdings operating more than 20 acres (Table 9.8b). For instance, the percentage distribution of tractors owned rises steadily from 8 percent in the lowest farm-size category of 0-2.5 acres to 37.5 percent in the 10-20 acre group and then falls sharply to less than half at 17 percent for the largest size-group of above 20 acres. This is equally true of every single means of production considered. Not only does the farm-size grouping fail to show a clear positive relation of the means of production owned with the physical size of a landholding, even the extent of such class differences within the peasantry are clearly not as sharp as when economic class is used as an index to classify holdings into varying socio-economic status. This is as true of the absolute numbers of means of production owned as of the distribution of total value of farm assets (Table 9.9b).

Looking at the class-wise value per household of agricultural machinery and implements, livestock and farm buildings owned, the difference between rural classes, as expected, is yet again striking (Table 9.9a). This is once again apparent from the fact that a rich household on an average owns more than thirteen times the average value of agricultural machinery and implements taken together, nearly four times the average value of all livestock (draught and milch animals) and more than fifteen times the average value of farm buildings (including irrigation fixtures) compared to a typical poor class household. Table 9.9a shows that as much as 78 percent of the total value of agricultural machinery and implements is concentrated in the hands of the rich class compared to a miniscule 3.5 percent with the poor.

⁴ These estimates, though not shown in Table 9.8a, can nevertheless be arrived at simply by taking the ratio of number of such means of production owned per household between the rich and the poor classes respectively.

Table 9.8a: Concentration of Ownership of Means of Production by Economic Class

Economic Class	Absolute Number of Means of Production Owned					Percentage Distribution of the Absolute Number of Means of Production Owned				
	Tractor	Thresher	Draught Animals (Male, Cow + Buffalo)	Electric Tubewell	Diesel Tubewell	Tractor	Thresher	Draught Animals (Male, Cow + Buffalo)	Electric Tubewell	Diesel Tubewell
Landlord + Rich	71	37	111	72	85	80.7	86.0	64.5	83.3	71.4
Middle	13	5	41	13	28	14.8	11.6	23.8	14.3	23.5
Poor	4	1	20	2	6	4.5	2.3	11.6	2.3	5.0
All	88	43	172	87	119	100.0	100.0	100.0	100.0	100.0

Sample size (n) = 176

Table 9.8b: Concentration of Ownership of Means of Production by Farm-size Group

Farm-size Group	Absolute Number of Means of Production Owned					Percentage Distribution of the Absolute Number of Means of Production Owned				
	Tractor	Thresher	Draught Animals (Male, Cow + Buffalo)	Electric Tubewell	Diesel Tubewell	Tractor	Thresher	Draught Animals (Male, Cow + Buffalo)	Electric Tubewell	Diesel Tubewell
0-2.5	7	3	27	5	14	8.0	7.0	15.7	5.7	11.8
2.51-5.0	11	3	27	14	12	12.5	7.0	15.7	16.1	10.1
5.01-10.0	22	11	34	22	30	25.0	25.6	19.8	25.3	25.2
10.01-20.0	33	17	60	33	48	37.5	39.5	34.9	37.9	40.3
Above 20.0	15	9	24	13	15	17.0	20.9	14.0	14.9	12.6
All Sizes	88	43	172	87	119	100.0	100.0	100.0	100.0	100.0

Sample size (n) = 176

Table 9.9a: Percentage Distribution of Total Value of Farm Assets (Other than Land) Owned and their Value per Household by Economic Class

Economic Class	Value of Non-Land Farm Assets Owned Per Household by Class (Rs.)			Percentage Distribution of Value of Farm Assets (Other than Land) Owned by Class		
	Agricultural Machinery and Implements	Livestock	Farm Buildings	Agricultural Machinery and Implements	Livestock	Farm Buildings
Landlord + Rich	170502.99	39041.45	137985.49	78.04	68.73	85.4
Middle	62602.51	18252.16	28495.01	18.5	20.74	11.4
Poor	12996.2	10266.30	8910.98	3.46	10.52	3.2
All	98069.82	25496.5	72522.75	100.00	100.00	100.0

Sample size (n) = 176. Note: All values of farm assets (other than those of land) are *net* values, i.e., net of depreciation. 10 percent of the gross value of fixed capital has been deducted to allow for depreciation of agricultural machinery and farm buildings.

Table 9.9b: Percentage Distribution of Total Value of Farm Assets (Other than Land) Owned and their Value per Household by Farm-size Group

Farm-size group	Value of Non-Land Farm Assets Owned Per Household in each Farm-size group (Rs.)			Percentage Distribution of Value of Farm Assets (Other than Land) Owned by Farm-size group		
	Agricultural Machinery and Implements	Livestock	Farm Buildings	Agricultural Machinery and Implements	Livestock	Farm Buildings
0-2.5	16773.43	10453.2	12975.96	6.1	14.7	6.4
2.51-5.0	73527.23	19619.7	33852.10	13.2	13.6	8.2
5.01-10.0	109948.62	33727.6	76731.18	21.7	25.6	20.4
10.01-20.0	158568.39	42096.3	143524.18	34.9	35.6	42.7
Above 20.0	416036.70	47422.5	283432.50	24.1	10.6	22.2
All Sizes	98069.82	25496.5	72522.75	100.0	100.0	100.0

Sample size (n) = 176

If we look at the same distribution by farm-size group, a familiar picture emerges once again. Table 9.9b shows that the value of non-land farm assets per household rises with increasing farm-size. Nearly 60 percent of the total value of agricultural machinery and implements is concentrated in the hands of households operating more than 10 acres, with holdings in the smallest farm-size group having a mere 6 percent. Despite such differences, a comparison of Tables 9.9a and 9.9b shows that acreage grouping obscures the extent to which classes are separated from each other in reality.

In short, the disproportionately high share of the overall assets owned by the “haves” at the top, thereby precluding bulk of the middle and poor class households from exercising control over essential means of production has implications for labour use pattern across the rural classes. In other words, this lopsided structure of asset ownership results in an equally uneven form of labour use among the economic classes. The rationale for such class differences in both form and extent of labour use lies in the extremely inequitable distribution of landholding across the cultivating classes. For it is precisely this uneven spread of net sown area which brings out the necessity on the part of the rich class to hire-in labour to cultivate their much larger than average holdings on the one hand while an equally pressing need of the poor to hire themselves out in return for wages owing to their dwarf holdings. As a result, what we get is a minority of the rich at the top of the rural class hierarchy who appropriate surplus labour days via net hiring-in of labour in the process of agricultural production. At the same time, there is a huge mass of the lower middle and poor peasants at the bottom who are exploited in the process of earning wage income in both farm and non-farm work essentially by being net hirers-out of their labour. This imbalance in the use of hired-in labour is one of the many forms in which differences in the pattern of overall labour use manifests itself across the rural classes. This has been discussed in detail in the following section.

9.2. Differences in the Form and Extent of Labour Use by Class and Acreage

The pattern of labour use varies significantly by economic class and physical size of landholding. Such differences are reflected in marked variations in the dominant form of labour use in agricultural production as we go down the rural class

hierarchy. From production being carried out predominantly using hired-in labour (farm servant or casual daily or even sharecropped) by the rich to one being organized primarily on the basis of family labour by the middle and poor peasant classes, the composition of total labour days worked on the holdings of different strata undergoes distinct changes. We begin this section by highlighting the economic basis underlying such variations in the form and magnitude of labour use between the three classes. This will be followed by an examination of the pattern of labour use both by acreage and class. Our findings reveal that the rich class indeed derives bulk of its farm income from the exploitation of outside (i.e., outside of family) labour. On the contrary, the poor class of semi-landless tillers is the one that derives its income primarily by working on farms of the rich class of landlords- turning capitalist farmers and rich peasants and is therefore, the exploited class.

Rationale behind the existence of class differences in labour use:

Let us state at the outset that class differences in the form and extent of labour use stem from the highly skewed distribution of farm assets, particularly landholding. If the use of net hired-in labour days relative to family labour in agricultural production on directly cultivated holdings is an index of class status as is indeed the case here, then it would be interesting to examine whether this use of outside labour on an operational holding has any relation to the physical size of that holding. This relationship in turn could be established if maximum area that can be cultivated using family labour alone is worked out. Clearly, households operating an area more than this maximum will necessarily depend upon hired-in labour to carry out agricultural production while those operating less than this maximum will cultivate their holdings mainly with family labour. This maximum area that a household can cultivate based primarily on family labour can be estimated by dividing the potential maximum of family labour days that a household can provide (based on average number of able bodied adult male members working full time in agriculture) on self-operated holdings by the number of family-labour days required to till an acre of their holding. Table 9.10 below helps clarify this.

Table 9.10: Potential Maximum of Family Labour Days per Household as well as Average Area that can be Cultivated per Household Using Family Labour by Economic Class

Economic Class	Average No. of Able Bodied Adult Male Members Working Full Time in Agriculture	Total Labour Days actually Worked	Total Labour Days Actually Worked Per Holding per annum	Total Labour Days Actually Worked Per Acre per annum	Estimated Number of Maximum Family Labour Days per Household per annum	Maximum Area that can be cultivated per Household Using (Estimated) Family Labour Alone (acres)	No. of Households	Area Operated (acres)	Average Operated Area by Class (acres)
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)
Landlord + Rich	1.7	74952.6	948.8	63.5	411	6.5	79	1180.65	14.9
Middle	1.7	11600.4	227.5	59.6	411	6.9	51	194.55	3.8
Poor	1.9	3053.9	66.4	54.7	460	8.4	46 (66)	55.85	1.2
All	1.7	89596.8	509.1	62.6	411	6.6	176 (196)	1431.05	7.1

Note: (a.) Sample size (n) = 176 i.e., we exclude landless households from our estimation here. (b.) The figures on potential maximum of family labour days per household per annum in column (v) have been arrived at by assuming that each able bodied adult male member in the family works for atleast two-thirds of the year. This works out to approximately 242 days per annum per able bodied adult male member working full time in agriculture. (c.) Figures within brackets in column (vii) are the total number of households including the landless households.

A number of interesting observations can be made on the basis of Table 9.10. Firstly, it outlines the necessity on the part of the rich class of capitalist farmers to hire-in labour owing to a far higher operational area per household than can be cultivated using family labour alone. This is evident from the average area of 14.9 acres actually cultivated by the rich, a magnitude which is sufficiently more than double the acreage of 6.5 that can maximally be cultivated using family labour alone. A sharp contrast to the above scenario is that of the poor class which, in reality, is operating on an average a meagre 1.2 acres which is infact as much as seven times less than the 8.4 acres they can potentially cultivate merely on the basis of family labour, given that there are two adult able bodied male members working full time in agriculture per poor household. In between these two extremes, we have the case of the middle class which is tilling an area of only 3.8 acres per household which is 80 percent less than the potential maximum of 6.9 acres each middle class peasant family with 1.7 workers could have sown.

It must however be noted in this regard that the class-wise average numbers of family- workers working full time in farm work in column (i) of Table 9.10 have been arrived at by considering only able bodied adult male members of the household. To the extent that the participation rate of women and even children (above 10 years of age) in farm work, especially among the lower middle and poor classes is much more compared to their counterparts in the upper classes, the potential area as well as family-labour days worked out for the former are infact underestimates.

An equally interesting point closely related to the observation made above, to which Table 9.10 draws our attention is with regard to the class differences that exist in the extent of total labour days (family + hired-in) worked on an operational holding per household. We find that on an average, total labour days worked on the rich holdings is slightly more than fourteen times than on the poor holdings and four times when compared with the middle class holdings. Moreover, when we look at the divergence between the actual number of total labour days worked per household (column iii) and the maximum number of estimated family labour days that can be worked by a household (column v) across classes, the gap is as wide as in the case of acreage noted above. Clearly, the total number of labour days (family + outside labour) employed on an average rich class holding (948.8) is more than twice the

number possible had it been cultivated by family labour (411) alone. In the case of poor cultivators, their pressing need to hire themselves out in both farm and non-farm work in exchange for wages is brought to the fore by abysmally low total labour days (66.4) actually worked on their tiny holdings in relation to the potential 460 labour days that each poor household could voluntarily have provided given a sufficient operational area to till.

In other words, it is this imbalance, arising in turn from a lopsided structure of landholding, between the total number of labour days actually worked on a given operational holding and the maximum that a cultivating household could have provided using only family labour, which lies at the heart of extensive hiring-in/out of labour witnessed across the rural class hierarchy. Therefore, we have a class of rural bourgeoisie at the top which predominantly uses hired-in labour on their holdings. At the same time, we see a class of semi-landless marginalized peasantry at the bottom which, along with the landless constitutes the “reserve army” of labour on which the class of capitalist farmers must depend for sustained agricultural production.

Pattern of labour use by economic class and acreage:

Class differences exist not only in the magnitude of overall labour days employed on a given operational holding but are equally evident in the varying composition of total labour days worked on holdings across economic classes (Tables 9.11a and 9.12a).

Given that as much as 83.6 percent of the total labour days and 96.5 percent of all hired-in labour days in farm work are accounted for by the rich alone, the latter clearly controls labour in the process of agricultural production. If we look at the extent of use of outside labour in each of the three classes, we find that hired-in labour days as percentage of total labour days falls sharply as we move from rich to middle to poor class status. Specifically, we find that more than nine-tenths (91.3 percent) of the total labour days worked on landlord-capitalists and rich peasant holdings are indeed worked by hired-in labour. This falls drastically to nearly one-fifth of the total labour-days on middle class holdings while it is almost negligible at less than 3 percent for the poor class.

Such is the imbalance in the use of outside labour in agricultural production between the three classes that the rich hire-in thirty six times as many labour days per acre of operated area as the poor and nearly five times more than the middle class (Table 9.11a).

If we look at the pattern of labour use by acreage grouping, we find that nearly 70 percent of the total labour days and 80 percent of hired-in labour days are accounted for by holdings operating an area of 10 acres or more (Table 9.11b). Given the high positive association between economic class and farm-size, we would expect both hired-in labour days per holding and per acre to vary directly with farm-size. Indeed, Table 9.11b shows that hired-in labour days per holding increases from 6.5 in the 0 to 2.5 acres group to as high as 2670.8 in the 20 acres and above category. Further, hired-in labour days per acre of operated area vary between 5.4 on the smallest sized holdings to nearly 60 on the largest sized farms. The percentage of hired-in to total labour days worked on a holding also rise sharply from 10 percent in the 0 to 2.5 acres group to nearly 99 percent on the farms operating 20 acres or more.

Table 9.11a: Aggregate of Total and Hired-in Labour Days and Percentage of Hired-in Labour Days to Total Labour Days Worked on Operational Holdings by Economic Class

Economic Class	Total Labour Days	Aggregate of Hired-in Labour Days	By Economic Class, Percentage Distribution of,		Percentage of Hired-in to Total Labour Days (i.e., Hired-in + Family)	Hired-in Labour Days Per Acre of Operated Area	Hired-in Labour Days Per Holding
			Total Labour Days	Hired-in Labour Days			
Landlord + Rich	74952.6	68396.6	83.6	96.5	91.3	57.9	865.8
Middle	11600.4	2358.1	12.9	3.3	20.3	12.1	46.2
Poor	3053.9	87	3.4	0.1	2.8	1.6	1.9
All	89606.9	70841.7	100.0	100.0	79.1	49.5	402.5

Note: Sample size = 176.

Table 9.11b: Aggregate of Total and Hired-in Labour Days and Percentage of Hired-in Labour days to Total Labour Days Worked on Operational Holdings by Farm-size group

Area Operated (acres)	Total Labour Days (hired-in+family)	Aggregate of Hired-in Labour Days	By Acreage, Percentage Distribution of,		Percentage of Hired-in to Total Labour Days (i.e., hired-in+family)	Hired-in Labour Days per acre of operated area	Hired-in Labour Days per Holding
			Total Labour Days	Hired-in Labour Days			
0-2.5	4185.2	411.8	4.7	0.6	9.8	5.4	6.5
2.51-5.0	7273.6	2555.7	8.1	3.6	35.1	21.9	82.4
5.01-10.0	16268.8	10505	18.2	14.8	64.6	41.1	309.0
10.01-20.0	34811.6	30661.6	38.8	43.3	88.1	57.2	806.9
Above 20.0	27067.7	26707.6	30.2	37.7	98.7	59.9	2670.8
All Sizes	89606.9	70841.7	100.0	100.0	79.1	49.5	402.5

Sample size (n) = 176

It must however be noted that the above analysis based on hired-in labour days in agricultural production gives us only a partial view of such class differences within the peasantry. It is incomplete in that it does not take into account the extensive practise of hiring-out of labour, especially by those at the bottom of the rural class hierarchy. To that extent, it does not reveal the vulnerable position that bulk of the rural masses comprising the lower middle and poor cultivating classes find themselves in. Therefore, in order to understand which class exploits labour and which class is exploited in the process of expending labour in production, it is imperative that we look at **net** (i.e., net of hired-out labour days) hired-in labour days in agricultural production across the cultivating classes.

An examination of **net** (i.e., net of hired-out labour days) hired-in labour days in agricultural production across the cultivating classes reveals that the rich farmers are **net** hirers-in of labour and are therefore the exploiting class (Table 9.12a). On an average, they hire-in (net) 851 labour days (direct + indirect) per annum. Infact, bulk of the total manual labour days employed on their holdings is indeed performed by hired-in labour, with family labour clearly playing an insignificant role in agricultural production. Not surprisingly then, the average E-value or the labour exploitation ratio for this class is a high positive of 10.3. A contrasting position is that of semi-landless marginalized class of poor tillers who are exploited in the process of hiring

themselves out for wages in both farm and non-farm work. The meagre size of their landholding necessitating reliance on wage income is what results in relatively lower per holding family labour days for this class on the one hand and high net hired-out labour days in both farm and non-farm employment on the other. Net hired-out labour days per household in agriculture alone for this class are high at 198.3 and increase sharply to 307.6 when hired-out labour days in both farm and non-farm employment are taken into account. Hence, the average value of E-ratio for this class is -3.1 when it is based on net hired-in labour days in agricultural production only and falls even further to -4.8 when net hired-in labour days includes both farm and non-farm employment. Moreover, the average E-values for the rich and middle classes remain unaffected on account of inclusion of hired-out labour days in non-farm employment. Given the defining feature of the two classes as being primarily net hirers-in of labour and predominantly family-labour based holdings respectively, this is indeed expected.

Table 9.12a: Form of Labour Use per Holding and Average Value of E-ratios by Economic Class in Agricultural Production

Economic Class	Per Holding, Values of						
	Total Labour Days (hired + family)	Hired-in Labour Days	Family Labour Days	Net Hired-in Labour Days in farm production	Average Value of E-ratio based on (net) hired-in labour days in farm production only	Net Hired-in Labour Days in farm and non-farm production	Average Value of E-ratio based on (net) hired-in labour days in farm and non-farm employment
Landlord + Rich	948.8	865.8	82.9	850.9	10.3	850.9	10.3
Middle	227.5	46.2	181.2	26.6	0.1	25.02	0.1
Poor	66.4	1.9	64.5	-198.3	-3.1	-307.6	-4.8
All	509.1	402.5	106.6	337.8	3.2	308.8	2.9

Note: Sample size=176, i.e., landless have been excluded from our calculation here.

Table 9.12c: Form of Labour Use per Holding and Average Value of E-ratios by Farm-size Group

Area Operated (acres)	Per Holding, Values of						
	Total labour days (hired+ family)	Hired-in labour days	Family labour days	Net hired-in labour days in farm employment only	Average value of E-ratio based on (net) hired-in labour days in farm production only	Net hired-in labour days in farm and non-farm employment	Average value of E-ratio based on (net) hired-in labour days in farm and non-farm employment
0-2.5	66.4	6.5	59.9	-125.9	-2.1	-201.2	-3.4
2.51-5.0	234.6	82.4	152.2	41.3	0.3	41.1	0.3
5.01-10.0	478.5	309.0	169.2	288.4	1.7	277.8	1.6
10.01-20.0	916.1	806.9	109.2	793.1	7.3	793.1	7.3
Above 20.0	2706.8	2670.8	36.2	2616.1	72.2	2616.1	72.2
All Sizes	509.1	402.5	106.6	337.8	3.2	308.8	2.9

Sample size (n) =176

Table 9.12b: Direct and Indirect Components of (Net) Hired-in Labour Days per Holding in Agricultural Production by Economic Class

Economic Class	Per Holding, Directly Hired-in (Net) Labour Days of,		Per Holding, Indirectly Hired-in (Net) Labour Days via Rent Received on Land Leased-out	Total (Net) Hired-in Labour Days Per Holding
	Casual Daily Wage Labour	Farm Servant		
	'a' component of e-ratios		'b' component of e-ratios	x = 'a' + 'b'
Landlord + Rich	349.8	488.3	12.7	850.9
Middle	39.3	3.8	-16.5	26.6
Poor	-168.9	-15.2	-14.1	-198.3
All	124.3	216.3	-2.8	337.8

Note: Sample size=176, i.e., landless have been excluded from our calculations here.

Table 9.12d: Direct and Indirect Components of (Net) Hired-in Labour Days per Holding in Agricultural Production by Farm-size Group

Farm-size Group	Per Holding, Directly Hired-in (Net) Labour Days of,		Per Holding, Indirectly Hired-in (Net) Labour Days via Rent Received on Land Leased-out	Total (Net) Hired-in Labour Days Per Holding
	Casual Daily Wage Labour	Farm Servant		
	'a' component of e-ratios		'b' component of e-ratios	$x = 'a' + 'b'$
0-2.5	-112.4	-8.7	-4.9	-125.9
2.51-5.0	25.9	38.0	-22.6	41.3
5.01-10.0	118.7	179.2	-9.6	288.4
10.01-20.0	240.6	547.7	4.9	793.1
Above 20.0	1496.9	1053.5	65.7	2616.1
All Sizes	124.3	216.3	-2.8	337.8

Sample size=176

If we look at Table 9.12c which gives us the form of labour use per holding and average E-values by acreage group, we find that a positive relationship exists between net hired-in labour days per holding and farm-size. However, barring the largest size group of above 20 acres constituting all rich holdings for which there is a quantum jump in net hired-in labour days, the extent of variation in net hired-in labour days between farm-size groups is clearly understated. As an example, let us consider the (2.5-5.0) acre group, which infact is the only group with an E-value lying between 0 and 1, the range that corresponds to the middle class status. The net hired-in labour days for an average household in this group at 41 are clearly much higher than that for a middle class holding, which on average hires-in 25 to 26 (net) labour days only. Similarly, if we look at the third acreage group of (5-10) acres having an E-value of 1.6 or 1.7 corresponding to the rich class status, we find that the net hired-in labour days by an average household in this group varies between 288.4 to 277.8 as opposed to a much higher estimate of 850.9 for an average rich class household. The reason for this divergence in estimates of net hired-in labour days between the two indices, viz., economic class and farm-size, lies in the fact that acreage grouping mixes up holdings of varying socio-economic class status.⁵ For instance, the (5-10) acre group contains not only 21 rich holdings but also 12 middle class and even 1 poor class household (See Chapter 8, Table 8.1a). The average for the acreage-group is therefore bound to be lower than for the purely rich class holdings. Similarly, the

⁵ U. Patnaik. 1987. See ch. 4, viz., 'Extent of Disjunction between Economic Class and Acreage Group' in *Peasant Class Differentiation: A Study in Method with Reference to Haryana*.

fact that the (2.5-5.0) acre group is comprised of not only 18 middle class holdings but also 3 poor and as many as 10 rich class households explains why average net hired-in labour days for this farm-size group at 41 exceeds the average of approximately 25 net hired-in labour days for the purely middle class households.

In other words, though acreage grouping shows a positive relation between farm-size and net hired-in labour days per household, it does tend to conceal the true extent of variation that exists between economic classes in reality.

Furthermore, a closer examination of the components of net hired-in labour days by economic class reveals the predominantly high average of net hired-in labour days of farm servants (who are mostly migrant workers from Bengal and Bihar) at 488.3 labour days per holding per annum for the rich class (Table 9.12b). This has two implications. From the perspective of the rich class, the predominance of farm servant's labour in overall net hired-in labour days reflects their preference for an assured supply of labour on a regular monthly basis over casual daily wage labour which, besides being relatively more expensive, is in times of labour market tightness also difficult to procure. For the poor however, the increasing employment of migrant labour (in the form of regular salaried farm servants) on rich cultivators' holdings leaves them unemployed for major part of the year, thereby weakening their already weak bargaining position vis-a-vis their employers. The highly exploitative terms and conditions of such migrant labour contracts imply that the poor themselves prefer to work as casual daily wage labourers rather than as farm servants on the holdings of the rich. This is reflected in the overwhelming share of casual daily labour days (-168.9) over farm servants' labour (-15.2) in the total of directly hired-out (net) labour days by the poor.

Besides the dependence of the rich class on farm servants, an equally important component of net hired-in labour days is that of casual daily hired-in labour. With as much as 42 percent share in directly hired-in (net) labour days by the rich households, casual daily labour continues to play a crucial role in agricultural production on farms of the predominantly net hired-in labour based holdings. More importantly, the fact that **directly** hired-in (net) labour days (i.e., the 'a' component of E-ratio) constitutes as much as 98.5 percent of the **total** (net) hired-in labour days for the surplus appropriating class of rich cultivators implies that **indirect** hiring-in of

labour days via rent received on leased-out land is clearly insignificant for this class. Specifically, it reflects the fact that direct cultivation as a source of accumulating surplus continues to be the preferred option over rent received via leasing-out land for the dominant rural class in our study area. This is equally true of the classification of holdings by acreage groups as is evident from Table 9.12d.

It follows from the analysis above that the minority comprising the rich at the top of the rural class structure controls labour as much as it does a disproportionately large share in total farm assets in the process of agricultural production. At the same time, the large majority of “have-nots” constituting the lower middle and poor classes are not only deprived of cheap and easy access to the means of production but are increasingly being forced to resort to selling of their labour in exchange for wages for their continued survival. Under the circumstances, it is no wonder that the dominant class of rich cultivators would end up controlling bulk of the overall agricultural produce, thereby resulting in a high level of socio-economic inequality among the farming households. This has been taken up in detail in the next chapter.

Chapter 10

Inputs, Output and Productivity

Incomes of landlord-capitalists and peasants are as dependent on agricultural policy as on the institutional framework within which agricultural production is carried out. The former has a direct bearing (among others) on easy and cheap access to essential current inputs, and on public investment in irrigation and crop research. The control over land and other private non-land farm assets such as agricultural machinery, irrigation fixtures and so on fall largely within the framework of agrarian institutions.

So far we have followed basically a Marxist class-theoretic approach to analysing farm data, and we have also juxtaposed the standard or conventional methods of analysing the same data, in order to understand the real extent to which socio-economic inequality persists within the cultivating households. The present chapter based on our findings from fieldwork data, argues that the class which already owns most of the means of production, namely the minority of the rich farmers, is precisely the one which is in a good position to accumulate further wealth through its ability to generate most of the agricultural output and economic surplus. At the other pole, it is the semi-landless and landless class of the rural poor, divorced from any substantial ownership of the means of production, who suffer extreme poverty and deprivation.

The chapter is divided into three sections. The first section highlights the commercialized nature of farming in the areas surveyed and establishes a link between heavy emphasis on cash crop cultivation and its fallout in terms of a very uneven distribution of crop output across classes. The second section discusses the differential access to and application of essential farm inputs (such as seeds, fertilizers, pesticides, fuel etc.) depending upon a household's specific location in the rural class hierarchy. A gross mismatch between hired-in labour's contribution to total output produced on the rich holdings on the one hand and its share in that output on the other reveals massive exploitation of the bulk of the rural masses hiring-out their labour. Not only is the overall distribution of crop output heavily skewed in favour of the rich, they also enjoy higher land and labour productivity owing to better

application of farm inputs per unit area cultivated on their holdings. The resultant monopolization of agricultural production by the rich class of landlords-turning capitalist, and rich peasants, has been taken up in section three.

10.1. Commercialization of Agriculture and Variation over Classes

Given a high degree of concentration of capital, both constant (which includes expenses incurred on all material inputs covering circulating costs and wear and tear of fixed capital) and variable (the wage bill) in the hands of the rich class of landlords-turning capitalist and rich peasants, we would expect to see a highly commercialized agriculture involving high rates of extraction of surplus in production. This is reflected, among other things, in an enormous importance in the overall economy of farmers, of high valued cash crop such as sugarcane.

Whether agricultural crop production is carried out for subsistence or commercial purposes is first and foremost reflected in cropping pattern of the area under study, which we examine for our sample holdings drawn from six villages from *Muzaffarnagar* district.

Cropping Pattern:

Let us begin by looking at the distribution of gross and net sown area among the three classes. From Table 10.1, the inequality in distribution of sown area (gross and net) in favour of the rich class of landlords-turning capitalist and rich peasants is striking. The substantial difference between gross and net sown area per household reflects the prevalence of multiple cropping in the surveyed areas.

Table 10.1: Gross Sown and Net Sown Area per Household by Class

Class	By Class, Percentage Distribution of		GSA Per Household (in acres)	NSA Per Household (in acres)
	GSA	NSA		
Landlord + Rich	79.7	82.5	23.11	14.94
Middle	15.5	13.6	6.96	3.81
Poor	4.8	3.9	2.38	1.21
All	100.0	100.0	13.01	8.13

Sample Size (n) = 176

Table 10.2 shows that the average cropping intensity is high at 160. Multiple cropping is indeed widely prevalent among the classes. Cultivation practices involving mixed cropping and crop rotation are fairly common and vary as much across the villages as between classes. While mustard in wheat is extensively sown irrespective of the class status of farmers, mixing of pulses (like *urad*, *moong* etc.) or fodder crops (such as *berseem*, *lobhia*, maize etc.) in sugarcane is more widespread among the middle and poor farmers who lack access to sufficient land to till. Given the adverse effect of mixed cropping on the productivity of high yielding varieties of sugarcane which are gradually displacing traditional varieties, rich farmers prefer to adopt monocropping so as to maximise profit by maximizing yield of the single most important cash crop of the district. This is in contrast to the cropping system practised by the middle and poor farmers who, given insufficient cultivable land, prefer mixed cropping to improve upon their domestic food security requirements over maximisation of crop yield. Not surprisingly then, with more than half the gross sown area (GSA) under sugarcane on rich cultivators' holdings, such conflicting objectives stemming in turn from the objective socio-economic location of each household within the rural class hierarchy explain the inverse relation that exists between cropping intensity and class status in our sample holdings.

Table 10.2: Cropping Intensity by Class

Class	Cropping Intensity (=GSA/NSA x100)
Landlord + Rich	154.6
Middle	182.9
Poor	195.8
All	160.1

Sample Size (n) = 176

Table 10.2 shows that, cropping intensity is 155 on rich cultivators' holdings, rises substantially to 183 on the middle peasant farms and further increases to 196 on the farms of the marginalized class of poor tillers. For the last class, the entire area virtually is double cropped. That cropping intensity falls as we move up the rural class hierarchy in a way reflects on the importance of sugarcane, a long-duration crop, both in terms of acreage sown as well as its share in total value of agricultural production, especially on farms of landlords-turning capitalist and rich peasants. Sugarcane is a highly demanding crop not only in terms of labour and other material input

requirements such as water, fertilizers, pesticides etc. It is also demanding in that it occupies a given plot of land for a much longer duration than any other crop. Sugarcane together with wheat accounts for as much as 68.3 percent of the gross sown area on rich farms. There is a fall in acreage under sugarcane from 54.7 percent on the rich holdings to 31.9 percent on poor farms, but area under wheat and sugarcane taken together continues to be substantial at 54.5 percent on the latter. Table 10.3 gives the cropping pattern on our sample holdings in detail.

Table 10.3 shows that sugarcane and wheat are clearly the two most important crops sown. The Gross Sown Area (GSA) under these two crops steadily increases from 54.5 percent on poor peasants' holdings to an average of 65.2 percent on middle class farms to a further 68.3 percent on rich farms. As gross sown area under sugarcane increases as we go from poor to middle to rich class status, correspondingly the acreage under total food grains registers a sharp decline. This general emphasis on commercial farming as seen in a large share of area under sugarcane across all classes is particularly marked in the uppermost strata of the cultivators.

The area under foodgrains and fodder crops constitute a not very significant proportion of the total cultivated area compared to the state average. It is seen to vary between 10 percent on rich to 15 percent on poor holdings. Gross sown area under almost all other crops sown including vegetables, potato and 'others' on rich holdings are primarily sown for commercial purposes.

10.2. Differential Access to Essential Farm Inputs by Class and Farm Size

The higher per acre and per worker output levels on the rich farms which we discuss in the next section, are an inevitable fallout of timely and better application of material inputs such as fertilizers, pesticides and weedicides, fuel, irrigation etc. as also the use of sophisticated agricultural machinery like tractor, harrow, sugarcane razor, tiller, thresher etc. This is reflected in Tables 10.4a, to 10.4c.

Looking at the class-wise breakup of paid-out costs of cultivation (Table 10.4a), we see a large variation in the shares of various components of paid-out costs across classes, other than seeds, fertilizers and manures which vary little. The crucial role played by hired-in labour on the rich holdings is clear from its high share of 25.8 percent in total paid-out costs. This is in sharp contrast to the share of 5.4 percent on

middle peasant, and almost zero percent on poor peasant farms. An equally important component of total material and wage costs is the expenditure incurred on maintenance of livestock (which includes both draught and milch animals) across the classes. Mechanization has displaced the use of draught animals for tillage and traction to a greater extent on the richer class of farms so that their livestock maintenance costs is a little less than one-fourth of total cost compared to nearly 36 percent for the middle peasants and as high as nearly one-half for the poor peasant class. On the other hand, the fuels share plus pesticides and weedicides share is higher on the richest farms.

Further, a high percentage share of depreciation costs on fixed farm assets (averaging close to one-fifth), especially on the middle and poor holdings shows that whatever meagre resources they own (in the form of agricultural machinery and farm buildings) are also on the verge of becoming obsolete. This scenario is however completely different from the one that prevails on the rich holdings wherein an equally high figure of depreciation is on account of much higher possession and use of fixed capital such as agricultural machinery and other farm equipment. Conversely the expenses incurred on hiring in equipment and irrigation facilities, on the middle class and particularly on poor holdings form a relatively higher proportion of the total costs relative to that on rich holdings. This reflects their relative lack of irrigation and other equipment. Tables 10.4b and 10.4c below give us a clearer picture of how one class fares with respect to the other in terms of working capital outlays per holding and per acre.

We see from Table 10.4b that the per holding values of all items of cost rise with improving class status, with the sole exception of equipment hire charges. Further, the intensity of application of material inputs measured by the values per acre, is highest on the rich class of holdings and declines for the other two classes, as Table 10.4c shows. One exception is the expense per acre on hire charges of equipment which is lower for the rich and higher for the middle and poor class of farmers - a reflection of the former's superior asset holding position vis-a-vis those below them in the rural class hierarchy.

Table 10.3: Percentage Distribution of Gross Sown Area (in acres) under Different Crops Sown for each Class

Class	Percentage Distribution of Gross Sown Area (in acres) by Crops Sown												
	Sugarcane (P+R)	Wheat	Sugarcane + Wheat	Paddy	Total Cereals (2+4)	Total Pulses	Total Foodgrains (5+6)	Total Fodder	Mustard	Potato	Total Vegetables	Others	Total (1+7+8+9+ 10+11+12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Landlord + Rich	54.7	13.6	68.3	3.4	16.9	2.4	19.3	10.7	9.6	1.4	1.4	2.8	100.0
Middle	46.0	19.2	65.2	0.4	19.6	2.2	21.8	14.9	14.2	0.7	1.8	0.7	100.0
Poor	31.9	22.6	54.5	5.9	28.5	5.4	33.9	15.2	15.1	1.5	2.4	0.0	100.0
All	52.3	14.9	67.1	3.0	17.9	2.5	20.4	11.5	10.6	1.3	1.5	2.4	100.0

Note: (a.) 'Total Fodder' includes Jowar, Berseem, Jai, Jau, Meithi, Maize and Lobia. (b.) 'Total Vegetables' include Peas, Onion, Carrots, Turnip, Beans, Cauliflower, Ladysfinger, Arbi, Chilli and Gourd. (c.) 'Others' include Green Manure (such as Sanhemp, Dhaincha and Murela), Marigold, Watermelon and Soyabean.

Table 10.4a: Component-wise Percentage Distribution of Paid-out Costs of Cultivation for each Class

Class	Percentage Distribution of Paid-out Costs by Components for each Class (Rs.)									
	Seed	Fertilizers and Manure	Pesticides & Weedicides	Hired-in Equipment	Fuel	Irrigation	Gross Labour Outlay	Depreciation	Livestock Maintenance	Grand Total
Landlord + Rich	12.0	10.5	1.2	1.3	2.7	4.3	25.8	18.6	23.6	100.0
Middle	12.6	10.5	0.8	5.5	1.1	6.2	5.4	22.2	35.8	100.0
Poor	11.6	10.0	0.8	6.1	0.3	5.6	0.2	17.1	48.2	100.0
All	12.0	10.5	1.1	2.0	2.4	4.6	22.1	19.0	26.2	100.0

Table 10.4b: Material Costs of Cultivation Per Holding (in Rs.) by Class

Class	Per Holding, Paid-out Costs (in Rs.) of									Grand Total of Paid-out Costs
	Seed	Fertilizers and Manure	Pesticides and Weedicides	Hired-in Equipment	Fuel	Irrigation	Gross Labour Outlay	Depreciation	Livestock Maintenance	
Landlord + Rich	21983.97	19283.63	2242.25	2305.32	4959.43	7973.25	47506.70	34276.49	43423.43	183954.48
Middle	5762.81	4798.37	342.86	2519.25	499.43	2822.05	2450.09	10121.95	16368.64	45685.45
Poor	1659.82	1429.63	117.53	865.73	47.73	791.29	31.60	2434.13	6870.07	14247.53
All	11971.53	10419.81	1136.53	1991.06	2383.31	4603.47	22042.26	18954.73	26029.97	99532.66

Table 10.4c: Material Costs of Cultivation Per Acre (in Rs.) by Class

Class	Per Acre, Paid-out Costs (in Rs.) of									Grand Total of Paid-out Costs
	Seed	Fertilizers and Manure	Pesticides and Weedicides	Hired-in Equipment	Fuel	Irrigation	Gross Labour Outlay	Depreciation	Livestock Maintenance	
Landlord + Rich	1509.35	1323.95	153.95	158.28	340.50	547.42	3261.66	2353.32	2981.32	12308.82
Middle	1510.68	1257.86	89.88	660.41	130.92	739.78	642.28	2653.40	4290.93	11976.14
Poor	1367.09	1177.49	96.80	713.04	39.31	651.73	26.03	2004.83	5658.43	11734.76
All	1503.86	1281.50	142.77	250.12	299.39	578.29	2768.95	2381.09	3269.89	12241.19

Sample Size (n) = 176

Second, that the rich have the resources to invest in expensive but nevertheless indispensable farm assets such as electric submersible pumps is revealed in the lower per acre irrigation costs incurred by them compared to the middle and poor farmers. Third, an inverse relation is seen to exist between expenses incurred on livestock maintenance per acre and class status. This is not only expected but also inevitable. This is because the rich spend far more on modern technology involving improved machinery and other farm equipment (like tractor, seed drill, harrow, tiller, sugarcane razor, submersible pumps for irrigation etc.) than on livestock purchase and its maintenance.

Moreover, unlike in the middle and poor class homes where income generated from the sale of milk of milch animals (though a tiny proportion of the total) is viewed as an additional source of income, milk output of milch animals owned by the rich is basically used for domestic consumption purposes only. Finally, total outlay on labour per acre on the rich holdings is slightly more than five times than on middle class farms and as much as one hundred and twenty five times on the poor holdings. As much as this higher expenditure on hired-in labour is an outcome of the rich operating an area far in excess of potentially cultivable using family labour alone, it is an inevitable fallout of increasing commercialization of agriculture. With a number of intercultural operations such as hoeing, tying and mulching largely performed by manual labour even today, the expansion in acreage under a highly labour intensive crop like sugarcane led primarily by a virtual displacement of all other crops sown has meant that the crop alone accounts for nearly four-fifths of the total labour days worked on the rich holdings. Given that more than nine-tenths (91.3 percent) of the total labour days employed on the rich farms are those of hired-in labour, the above disparity in total expenses incurred on labour between the cultivating classes is bound to exist.

If we look at Table 10.4d which shows per acre variation in total paid-out costs and its components by farm-size groups, we find that neither aggregate paid-out costs nor most of its components show any definite positive or negative relationship with acreage. Barring expenditure on pesticides, fuel and especially labour which increases as farm size increases, no systematic relation can be seen in case of all other

Table 10.4d: Material Costs of Cultivation Per Acre (in Rs.) by Farm-size groups

Area Operated (acres)	Per Acre, Paid-out Costs (in Rs.) by farm-size grouping of									Grand Total of Paid-out Costs
	Seed	Fertilizers and Manure	Pesticides and Weedicides	Hired-in Equipment	Fuel	Irrigation	Gross Labour Outlay	Depreciation	Livestock Maintenance	
0-2.5	1347	1162	68	665	102	711	287	2710	5497	12550
2.51-5.00	1564	1295	78	692	127	775	1319	3168	4714	13732
5.01-10.00	1532	1376	129	358	290	615	2287	2759	4496	13841
10.01-20.00	1483	1267	135	156	328	553	2788	2381	3441	12532
Above 20.00	1423	1262	180	98	329	473	3643	1742	1381	10530
All Sizes	1472	1281	140	245	293	565	2711	2331	3201	12240

Table 10.5b: Total Labour Outlay Per Holding and Per Acre (in Rs.) and its break-up by Class

Class	Per Holding, Total Labour Outlay (in Rs.) on				Per Acre, Total Labour Outlay (in Rs.) on			
	TR & PR Contracts	Farm Servants	Share- cropped Labour	Total Expenditure on Labour Per Holding	TR & PR Contracts	Farm Servants	Share- cropped Labour	Total Expenditure on Labour Per Acre
Landlord + Rich	19884.14	23065.93	4557.70	47506.70	1365.18	1583.63	312.92	3261.66
Middle	2249.31	176.47	24.31	2450.09	589.64	46.26	6.37	642.28
Poor	31.60	0.00	0.00	31.60	26.03	0.00	0.00	26.03
All	9585.32	10404.60	2052.83	22042.26	1204.11	1307.03	257.88	2768.95

Note: Outlays on sharecropped labour refers to the expenditure on sharecropped labour incurred by the rich class of landlords-turning capitalist and rich peasant households (net of material expenses on seeds, fertilizers, pesticides, fuel etc. borne by the sharecropper) on that portion of their holding which they get cultivated on sharecropping basis.

elements of total paid-out costs. The disparity in labour cost on the smallest and largest sized holdings is particularly sharp. Table 10.4d shows that the average total expenditure on labour incurred by the largest sized holding is nearly thirteen times compared to the expense on the smallest sized farm. Though the variation in labour cost by acreage grouping is not as sharp as when holdings are aggregated by the class index, it is still substantial.

A steady supply of labour, so crucial for surplus creation and its appropriation by the well-to do class of capitalist farmers is ensured by hiring-in migrant labour mainly from Bihar and Bengal in the form of farm servants. By supplementing casual daily hired-in labour to the regular services of farm servants, the rich virtually control labour in the process of agricultural production.

If we look at the class-wise distribution of gross expenditure on total hired-in labour, we find the share of the rich to be an overwhelming 97 percent. The breakup of total expenditure on labour by the type of hired-in labour reveals the predominance of migrant labour, followed by casual daily wage labour on the rich holdings. This is shown in Tables 10.5a and 10.5b.

Table 10.5a: Percentage Distribution of Total Outlay on Hired-in Labour and its Breakup by Class

Class	Percentage Distribution of Total Outlay on Labour by Type of Hired-in Labour				Percentage Distribution of Gross Expenditure on all types of Hired-in Labour by Class
	TR & PR Contracts	Farm Servants	Sharecropped Labour	Gross Expenditure on Labour	
Landlord + Rich	41.8	48.6	9.6	100.0	96.7
Middle	91.8	7.2	1.0	100.0	3.2
Poor	100.0	0.0	0.0	100.0	0.04
All	43.5	47.2	9.3	100.0	100.0

An examination of Tables 10.5a and 10.5b reveals that the total expenditure on labour per holding and per acre increases as we go from poor to middle to finally the rich class status. Table 10.5b shows that the total outlay on labour per holding incurred by the rich in thousand rupees is 47, compared to 2 on the middle class farms and nearly zero on the poor. Further, the per acre expenditure on labour incurred by

the rich was five times the expense on the middle farm and one hundred and twenty five times of that on the poor.

Table 10.5a shows the diminishing use of hired-in labour of regular salaried farm servants with the decline in socio-economic status of farmers. This is evident from the fact that while slightly less than half (49 percent) of the gross expenditure on all types of hired-in labour on the rich farms is attributed to farm servants' labour, the same on middle class holdings substantially drops to a relatively insignificant 7.2 percent, way below one-tenth of the total. Even in absolute terms, expenditure on farm servants (be it per holding or per acre) incurred by the rich is incomparably higher than that by the middle class. The poor, given their meagre resources neither have a demand for nor can afford to keep farm servants or even hire casual daily wage labour to any meaningful extent.

Second, if the share of farm servants in gross expenditure on hired-in labour falls with the fall in economic class status, that of casual daily hired-in labour rises. With more than two-fifths (41.8 percent) of the total outlay on labour being spent on casual daily wages paid against time or piece rate basis, this form of directly hired-in labour plays an equally crucial role in overall production on the holdings of the well-to-do. Its economic importance in the overall expenditure on hired-in labour by the middle class, though limited, is evident in the more than nine-tenths share it constitutes in their total expense on labour. Finally, the significance of sharecropped labour, accounting for nearly 10 percent of the gross expenses incurred on hired-in labour on rich farms, can by no means be ignored. As has been pointed out earlier, this is the form of labour employed on that part of the rich cultivator's holding which is leased-out on short-term sharecropping basis for the cultivation of a specific crop such as paddy or pulses sown mainly for domestic consumption. The very fact that the rich class continues to engage in this type of hiring-in of labour even today is a reflection of the heavy demands that commercialized agriculture (led by sugarcane cultivation) places on labour in the overall process of agricultural production in *Muzaffarnagar* district of U.P.

Table 10.5c: Percentage Distribution of Total Outlay on Hired-in Labour and its Breakup by Farm-size groups

Area Operated (acres)	Percentage Distribution of Total Outlay on Labour by Types of Hired-in Labour				Percentage Distribution of Gross Expenditure on all types of Hired-in Labour by Acreage
	TR & PR Contracts	Farm Servants	Sharecropped Labour	Gross Expenditure on Labour	
0-2.5	54.7	45.3	0.0	100.0	0.6
2.51-5.0	48.7	51.3	0.0	100.0	4.0
5.01-10.0	39.7	51.1	9.3	100.0	15.1
10.01-20.0	34.5	60.6	5.0	100.0	38.5
Above 20.0	52.5	33.1	14.3	100.0	41.9
All Sizes	43.5	47.2	9.3	100.0	100.0

Table 10.5d: Total Labour Outlay Per Holding and Per Acre (in Rs.) as well as its break-up by Farm-size Groups

Area Operated (acres)	Per Holding, Total Labour Outlay (in Rs.) on				Per Acre, Total Labour Outlay (in Rs.) on			
	TR & PR Contracts	Farm Servants	Share-cropped Labour	Total Expenditure on Labour Per Holding	TR & PR Contracts	Farm Servants	Share-cropped Labour	Total Expenditure on Labour Per Acre
0-2.5	191.90	158.73	0.00	350.63	157.32	130.12	0.00	287.44
2.51-5.0	2419.06	2548.39	0.00	4967.44	642.32	676.66	0.00	1318.98
5.01-10.0	6817.23	8783.82	1592.34	17193.39	906.83	1168.43	211.81	2287.07
10.01-20.0	13542.39	23809.44	1945.09	39294.69	960.72	1689.09	137.99	2787.64
Above 20.0	85353.85	53880	23324.51	162558.36	1912.91	1207.53	522.74	3643.17
All Sizes	9585.32	10404.60	2052.83	22042.26	1178.87	1279.63	252.47	2710.90

Looking at the distribution of total expenditure on hired-in labour by farm-size, we find that it increases from less than 1 percent on the smallest sized farms to nearly 42 percent on the largest sized holdings (see Table 10.5c). Further, it can be seen from Table 10.5d that this positive relation between labour cost and farm-size holds whether we look at per holding or per acre expenses incurred on labour. The per holding labour cost rises from Rs. 350 in the 0 to 2.5 acre group to more than four hundred and fifty times at Rs. 1,62,558 in the largest farm-size group. Similarly, the per acre expenditure on labour increases with increasing farm-size. It varies between Rs. 287 on the smallest sized holding to nearly 13 times at Rs.3643 on holdings above 20 acres in size, as noted above.

If we look at the breakup of total labour cost by the type of labour hired-in across acreage groups, we find that the percentage share of farm servant rises from 45.3 in the 0 to 2.5 acre group to 60.6 in the 10 to 20 acre group, and falls thereafter to 33.1 percent on farms exceeding 20 acres in size. An exactly opposite trend prevails for casual daily labour, namely a decline in its percentage share in total expenditure on labour till the 10 to 20 acre group, and a rise thereafter for the largest sized holdings of above 20 acres. It is the relatively larger sized holdings of 5 acres and above who hire-in sharecropped labour. The percentage share of sharecropped labour in total labour cost shows no definite relation with varying farm-size and is the highest at 14 percent for holdings above 20 acres in size. The two smallest farm-size groups do not hire-in sharecropped labour. Once again, we note that though the variation in labour cost by acreage grouping is substantial, it is clearly not as sharp as when holdings are aggregated by the class index.

Thus, with the poor class of semi-landless tillers being net hirers-out of their labour and middle class farmers operating primarily with family labour, it is the rich who account for bulk of the total hired-in labour across all farms. This is evident from the 96.7 percent share of the rich in gross expenditure on all types of hired-in labour incurred by all classes taken together. Moreover, we have already seen that as much as 83.5 percent of the total labour days worked on the 176 sample holdings are worked on rich farms alone, an overwhelming 91.27 percent of which is hired-in. Given that it is in the process of hiring-in of labour (96.5 percent of the total of which is accounted for by the well-to-do) for agricultural production that exploitation of labour takes place, it hardly needs pointing out that it is mainly the rural rich who are the exploiting class while bulk of the rural masses comprising the semi-landless rural poor are clearly the exploited lot within the cultivating peasantry.

Despite hired-in labour accounting for more than nine-tenths of the overall labour days employed in agricultural production, its percentage share in total paid-out costs of cultivation in crop production alone of the rich class is just about one-third (see Table 10.6a). Moreover, if we look at labour's share in the landlord- turned capitalists and rich peasants' paid-out costs of cultivation of crop and livestock together, it gets reduced to a mere one-fourth. By hired-in labour, we mean labour days hired-in on time rate or piece rate basis, sharecropping basis (net of material

expenses borne by the sharecropper as part of the crop sharing arrangement) as well as hired-in services of farm servants on a regular basis. Such is the extent of exploitation of labour in the overall process of production that its percentage share is barely 10 percent in the gross value of output produced in crop cultivation on the rich farms.

Table 10.6a: Percentage Share of Hired-in Labour in Gross Value of Output and in Total Paid-out Costs by Class

Class	Total Outlay on Labour as Percentage of Total Paid-out Costs in Crop Cultivation only	Total Outlay on Labour as Percentage of Total Paid-out Costs in Crop Cultivation+ Livestock	Percentage Share of Labour in GVO of Crop Output only	Percentage Share of Labour in Combined GVO of (Crop + Livestock)
Landlord + Rich	34	25.8	10.0	8.6
Middle	8.4	5.4	2.3	1.8
Poor	0.4	0.2	0.11	0.1
All	30.2	22.1	8.75	7.4

Sample Size (n) = 176

Table 10.6b: Percentage Share of Hired-in Labour in Gross Value of Output and in Total Paid-out Costs by Farm-size groups

Area Operated (acres)	Total Outlay on Labour as percentage of total paid-out costs in crop cultivation only	Total Outlay on Labour as percentage of total paid-out costs in crop cultivation + livestock	Percentage share of labour in GVO of crop output only	Percentage share of labour in Combined GVO of (Crop + Livestock)
0-2.5	4.1	2.3	1.2	0.8
2.51-5.0	14.6	9.6	4.5	3.5
5.01-10.0	24.5	16.5	7.1	5.6
10.01-20.0	30.7	22.2	8.8	7.4
Above 20.0	39.8	34.6	11.7	11.0
All Sizes	30.0	22.1	8.7	7.4

Sample size (n) = 176

The variation in percentage share of hired-in labour in GVO and paid-out costs by acreage shows a similar trend. Table 10.6b shows that the labour's share in combined paid-out costs incurred in crop cultivation and livestock ranges between 2

to 10 percent on holdings of 0 to 5 acres, increases to 16 to 22 percent on farms of 5 to 20 acres and continues to be low at less than 35 percent on the largest sized holdings. If we look at the share of labour in combined GVO of crop and livestock of large sized holdings of 10 acres and above, it is abysmally low and varies between 7 and 11 percent.

The percentage share of hired-in labour in both GVO (whether of crop output only or of combined GVO of crop and livestock) as well as total paid-out costs of the middle and poor classes is negligible, as can be seen from Table 10.6a. This is because by definition, production on their holdings is largely carried out by family labour, the use of hired-in labour being nominal. Alternatively, given that imputed value of family labour has not been included in overall outlay on labour (which basically refers to the use of outside labour), the above result is indeed expected. Moreover, it must be pointed out that even the 8.4 percent share of labour in paid-out costs of crop cultivation on the middle class holdings is somewhat misleading. This is because hiring-out of labour by a section of the cultivators within the middle class, namely the lower middle class does not get reflected in the estimates presented in Table 10.6a.

However, even when we focus our attention on the rich holdings, we find that labour's share in paid-out costs as well as in GVO is minimal. This is more so keeping in mind the indispensable role played by hired-in labour in the process of production on their holdings. This asymmetry between hired-in labour's contribution to total output produced on the rich holdings on the one hand and its share in that output on the other reveals massive exploitation of the bulk of the rural masses hiring-out their labour. As a result, while the rich class continues to accumulate investible surpluses by monopolising agricultural output, the large majority of the toiling masses comprising the lower middle and poor classes struggle to make ends meet.

10.3. Agricultural Production Concentration

The concentration of agricultural production in the hands of the rural elite becomes even more pronounced in an area like *Muzaffarnagar* where commercial farming is predominant. The latter is reflected in the overwhelming importance of sugarcane in the economy of cultivators, as Table 10.7 shows. The percentage share

of a high valued cash crop like sugarcane in gross value of output (GVO) varies between 58.3 percent on poor to 78.3 percent on rich farms.

Regardless of the class status of our sample households, heavy reliance on cash crop cultivation is apparent from Table 10.7. With barely two crops, namely sugarcane and wheat accounting for as much as 80 to 90 percent of GVO on our sample farms, economic importance of all other crops pales into insignificance. Even among these two, sugarcane, being the high valued cash crop, is visibly the single most important crop in terms of its contribution to overall value of output produced, followed by wheat. Even on poor class farms, sugarcane alone constitutes nearly three-fifths of the gross value of output (58.3 percent). As expected, total foodgrains (cereals + pulses) as percentage of GVO on poor holdings at 28.2 percent is more than two and a half times of the 11.7 percent on the rich farms.

However, if we look at the distribution of agricultural output in real terms across the classes, we find that the percentage share of the poor class in total output of foodgrains produced is a mere 6.4 percent in sharp contrast to the 78.4 percent for the rich. This asymmetry in the production of foodgrains output is equally true of all other crops sown (Table 10.8).

The concentration of agricultural production in the hands of a few landed elite comprising the rich class of landlord-capitalists and rich peasants is indeed appalling. With as much as 86 percent of overall production of sugarcane and more than three-fourths (78.4 percent) of total foodgrains output controlled by the rural bourgeoisie, they undoubtedly dominate socio-economic and political life in *Muzaffarnagar* countryside (Table 10.8). Not surprisingly, whether we look at crop output per holding or per capita, noticeable class differences can be immediately seen.

Table 10.9a shows that the foodgrains output produced by an average rich household at 59 quintals is more than seven times compared to the 8.3 quintals produced on a poor holding and more than three times of that produced by a middle class family. The difference between classes in the production of sugarcane output per holding is even more stark, with the rich producing more than 23 times of the output of the poor and nearly five times of what is produced by a middle class household. A similar trend exists for the variation in crop output per capita between classes, as shown in Table 10.9b.

Against the backdrop of such acute class differences in output produced, the overall average for the three classes taken together (as shown in the last row of the Tables) clearly becomes meaningless.

Table 10.9a: Crop Output Per Holding by Economic Class (in quintal)

Class	By Economic Class, Per Holding Production (in quintal) of								
	Paddy	Wheat	Total Cereals	Total Pulses	Total Food-grains	Sugar cane (P+R)	Mustard	Potato	Total Vegetables
Landlord +Rich	10.9	46.3	57.2	1.7	58.9	2841.0	4.7	19.8	3.4
Middle	0.2	17.1	17.3	0.4	17.7	603.2	0.7	0.7	0.8
Poor	1.9	6.1	8.0	0.3	8.3	123.1	0.2	0.0	0.1
All	5.4	27.4	32.8	1.0	33.8	1482.2	2.4	9.1	1.8

Note: Sample Size (n) = 176. Owing to the lack of number of farmers sowing paddy in our sample, particularly by middle class farmers, we get such a low per holding average for paddy production in this class. Reason cited by all such farmers for not sowing paddy was lack of water. Specifically, there were only 6 out of a total of 51 middle class farmers in our sample who had sown paddy during the agricultural year, 2005-06, viz., the year for which this survey was carried out.

Table 10.9b: Crop Output Per Capita by Economic Class (in quintal)

Class	By Economic Class, Per Capita Production (in quintal) of								
	Paddy	Wheat	Total Cereals	Total Pulses	Total Food grains	Sugarcane (P+R)	Mustard	Potato	Total Vegetables
Landlord + Rich	1.4	6.0	7.4	0.2	7.7	369.0	0.6	2.6	0.4
Middle	0.0	2.6	2.7	0.1	2.7	92.8	0.1	0.1	0.1
Poor	0.3	0.9	1.2	0.0	1.2	18.1	0.0	0.0	0.0
All	0.8	3.9	4.6	0.1	4.8	208.8	0.3	1.3	0.3

Sample Size (n) = 176

The extremely skewed structure of asset holding in favour of the rich against the backdrop of a highly commercialized agriculture enables them to appropriate bulk of the agricultural production, thereby leading to a virtual monopolization of crop output in their hands. Not only do they control the bulk of overall agricultural output produced, the fact that this tiny minority can afford to meet the highly labour and capital intensive demands of a predominantly commercialized farming as prevalent in Muzaffarnagar district implies that they also enjoy relatively higher productivity of land and labour compared with their counterparts in the middle and poor classes. This is precisely what Tables 10.10a and 10.10b below highlight.

Table 10.10a: Output Per Acre of Crops Sown by Economic Class

Class	By Economic Class, Output Per Acre of Crops Sown (in quintals)								
	Paddy	Wheat	Total Cereals	Total Pulses	Total Food grains	Sugar-cane (P+R)	Mustard	Potato	Total Vegetables
Landlord +Rich	14.0	14.8	14.6	3.2	13.2	224.8	2.1	61.2	10.2
Middle	8.1	12.8	12.7	2.7	11.7	188.5	0.7	14.8	6.7
Poor	13.5	11.3	11.8	2.2	10.2	162.5	0.6	0.0	1.0
All	13.8	14.1	14.1	3.0	12.7	218.0	1.7	54.0	8.9

Sample Size (n) = 176

Table 10.10b: Labour Productivity, i.e., Output Per Labour Day (1 Labour Day=8 hours) of Crops Sown by Economic Class

Class	By Economic Class, Output Per Labour Day of Crops Sown (kg./labour day)						
	Paddy	Wheat	Total Pulses	Sugarcane	Mustard	Potato	Total Vegetables
Landlord+ Rich	29.7	71.0	16.5	376.8	27.8	192.8	54.0
Middle	18.8	61.3	13.5	357.9	11.3	39.7	26.7
Poor	29.7	58.6	10.6	326.8	9.9	0.0	2.7
All	29.5	68.2	15.4	373.2	23.6	170.7	41.9

Sample Size (n) = 176

Table 10.10a shows that the rich holdings have relatively higher per acre output levels of both wheat and sugarcane, the two most important crops of the district. It must be noted in this regard that the higher land productivity on the rich farms is not confined to these two crops alone but is equally true of every other crop sown, be it other market oriented cash crops such as potato, vegetables or even crops sown primarily for domestic consumption including pulses and mustard. Not only is output per acre higher on the holdings of the well-to-do, they also operate with relatively higher labour productivity when compared with the middle and poor farms. This is clearly brought out by Table 10.10b.

Thus the control over means of production (land and non-land farm assets) by those at the top of the rural class hierarchy implies that they not only monopolize the production of agricultural output but do so by organizing production along capitalist lines which inevitably results in higher land and labour productivities on their holdings.

Significantly, our findings above reveal the existence of a positive relationship between the economic class status of a household and output per unit area, with average operated area rising markedly as we move from households belonging to the poor to middle to finally the rich class status. This direct relationship between economic class and land productivity had already been established based on primary data collected from Haryana in 1972-73 and is well documented.¹ Evidently, it is in sharp contrast to the widely known results of the Farm Management Studies of the

¹ U. Patnaik. 1987. *Peasant Class Differentiation: A Study in Method With Reference to Haryana*.

Table 10.10c: Land Productivity, i.e., Output (in quintals) Per Acre of Crops Sown by Farm-Size Category

Area Operated (acres)	Land Productivity, i.e., Output (in quintals) per acre of crops sown by farm-size group									Gross value of output (i.e., GVO in Rs.) per cultivated acre
	Paddy	Wheat	Total Cereals	Total Pulses	Total Foodgrains	Sugarcane (P+R)	Mustard	Potato	Total Vegetables	
0-2.5	12.3	12.9	12.8	2.2	11.7	146.6	1.0	0.0	1.0	30412.8
2.51-5.00	9.9	13.6	13.5	1.6	12.3	197.4	0.7	21.3	13.2	29335.4
5.01-10.00	12.9	13.9	13.8	2.5	12.4	217.0	1.8	92.4	12.7	32153.8
10.01-20.00	14.8	14.9	14.8	2.5	13.4	224.8	1.3	78.1	10.5	31692.3
Above 20.00	13.9	14.1	14.0	4.3	12.7	232.4	3.2	24.3	2.5	31228.1
All Sizes	13.8	14.1	14.1	3.0	12.7	218.0	1.7	54.0	8.9	31369.0

Sample size (n)=176

Table 10.10d: Labour Productivity, i.e., Output Per Labour Day (1 Labour Day=8 Hours) of Crops Sown by Farm-Size Groups

Area Operated (acres)	By farm size group, labour productivity or output per labour day of crops sown (kg./labour day)								
	Paddy	Wheat	Total Cereals	Total Pulses	Total Food grains	Sugarcane	Mustard	Potato	Total Vegetables
0-2.5	23.9	68.6	57.4	9.7	52.1	379.9	13.4	0.0	2.7
2.51-5.00	40.4	66.6	65.3	12.9	62.1	353.9	11.5	47.8	48.5
5.01-10.00	30.1	65.1	60.7	13.0	55.5	372.2	22.4	396.3	57.5
10.01-20.00	33.9	70.9	64.6	15.2	60.4	366.1	19.9	203.5	46.8
Above 20.00	28.7	67.4	44.0	18.6	41.3	388.1	38.7	77.6	29.1
All Sizes	29.5	68.2	56.0	15.4	52.0	373.2	23.6	170.7	41.9

Sample size (n)=176

nineteen fifties and sixties in favour of the inverse relationship between farm size and land productivity.²

As is well known, the ‘inverse’ relation implying superior ‘efficiency’ (in terms of output per unit area) of small sized relative to large sized farms has been used by modern day proponents of agrarian populist and neo-populist theories to argue in favour of redistribution of land into smaller units, particularly in third world developing economies like India. At the same time, it has also been used as an argument against collectivisation of agricultural land along socialist lines. Given the socio-economic and political significance of the conclusions that have been drawn from the ‘inverse’ relation based on the Farm Management Studies data, it is hardly surprising that the ‘inverse’ relation has been the subject of a well-researched and sharply polarising debate in India.

If we examine the nature of this relationship between farm size and output per unit area in an agriculturally dynamic district like *Muzaffarnagar* in Western Uttar Pradesh, we find that over time, it has been far from static. The negative relationship of the nineteen fifties and sixties as reported by the Farm Management Studies in *Muzaffarnagar* district ceases to exist in modern day *Muzaffarnagar* countryside. Our sample holdings, when grouped by farm size, show that either a positive relationship or ‘no systematic pattern’ emerges between acreage and land productivity.³ (Table 10.10c) This is as true of individual crops as of combined gross value of all crops taken together even when productivity is measured per **net** cultivated acre rather than per **gross** cultivated acre as was pointed out by Krishna Bhardwaj in the early nineteen seventies.⁴

Furthermore, a similar pattern can be seen for labour productivity as well when data is aggregated by farm-size groupings. Table 10.10 (d) shows that no clear relationship, positive or negative, emerges between acreage and output per labour-day

² See, for instance, *Studies in the Economics of Farm Management in Muzaffarnagar District (U.P.). Combined Report for the years 1966-67 to 1968-69.* Directorate of Economics & Statistics, Ministry of Agriculture. 1975. Table 4.3 on p.56.

³ See K. Bharadwaj. 1974. *Production Conditions in Indian Agriculture: A Study Based On Farm Management Surveys.* Ch. 2, Land use and productivity pp.11-18.

⁴ *Ibid.* As was pointed out by Krishna Bhardwaj, we would expect the inverse relation to weaken even further if productivity is measured per gross cultivated acre as opposed to per net cultivated acre. This is owing to the mixed and double cropping practises resorted to by the small sized holdings which results in relatively higher cropping intensity on their farms compared to large sized holdings. This is supported by our sample holdings too as shown in Table 10.2 earlier in the chapter.

of individual crops sown. This is true not only of land and labour productivities but of expenses incurred on material and wage costs as well, as noted in section II above.

Clearly, this discrepancy arises owing to the fact that acreage grouping mixes up holdings employing different types of material input and labour use and is therefore, an inadequate method of aggregating data.⁵ It is here that the choice of a correct method of data aggregation becomes extremely important. For, as our findings reveal, when the same data is grouped not by acreage but by a household's economic class status based on the "labour exploitation" ratio, the earlier 'inverse' or 'no systematic relation' transforms into a clear and a strong positive one not only with regard to land and labour productivities but also in the case of input use as well as gross and net incomes (See Chapter 11 for incomes).

The economies of scale reaped by the rich owing to relatively higher capital and labour outlays per unit area employed on their holdings ensured a breakdown of the hitherto existing widely quoted inverse relationship between farm size and output per unit area. Far from the superior efficiency of small scale family farms relative to large scale capitalist farms as was indeed advocated by the agrarian populists and neo-populists, it is the large scale capitalist holdings employing higher capital and labour per unit area motivated by rising profitability, that produce a higher average and total output compared to small scale peasant holdings worked with family labour.

The existing wide disparity in incomes between the farming households is an inevitable consequence of the monopolization of farm output by the rich owing to their virtual control over the means of production. We examine the extent of income inequality that exists between our sample holdings in the next chapter.

⁵ U. Patnaik. Peasant Class Differentiation: A Study in Method With Reference to Haryana. 1987. OUP.

Chapter 11

Output and Incomes of Farming Households by Class and Farm Size

The present chapter, examining output and incomes of farming households by class and farm size, sheds light on the extreme income inequality that exists between the cultivating households. It shows that even as the rich class of landlords-turning capitalist, and rich peasants, continue to accumulate investible surpluses by monopolising agricultural output, the large majority of the toiling masses comprising the lower middle and poor classes struggle to make ends meet.

The chapter is divided into six sections. The first section examines gross output value from crop and livestock production by class and acreage. Farm incomes across classes and by farm-size groups have been analysed in section two. Three concepts of incomes- FLL , FDI_A and FDI_B have been discussed, depending on what items we define as cost. Given the extreme income inequality that exists within the cultivating households, we seek to determine whether incomes from crop and livestock production are enough to meet the subsistence requirements, especially of the poor and middle classes.

Section three therefore estimates the minimum consumption requirements of cultivators in two different ways, by using the imputed value of family labour days in production and also by calculating the required monthly official poverty level spending using the Tendulkar estimate. Actual farm disposable incomes have been compared with poverty level incomes by class and acreage, to know the extent of farm disposable surplus or deficit that exists on our sample holdings.

Against the background of increasing unviability of farm production for the vast majority of the poor and even lower middle classes and rising concentration of farm disposable surplus in the hands of the rich, section four examines incomes of the household from such additional sources as wages from farm and non-farm work, remittances, regular salaried employment and other non-farm activities.

In the fifth section, we examine whether such additional incomes, other than those earned in direct cultivation, have any meaningful impact on the economic well-being of the marginalized class of semi-landless and landless tillers. Specifically, we

compare the final total income position with poverty level income to determine whether the rural poor who are below the poverty level consumption when relying on farm production alone, are able to pull themselves out of 'poverty'.

The sixth and the final section analyses the worsening situation of agricultural households in U.P. and India between 2003 and 2013, using National Sample Survey's *Situation Assessment Survey of Farming Households*. It corroborates our findings from fieldwork and points towards an intensification of the crisis that pervades our agrarian sector in the ongoing period of economic reforms.

11.1. Gross Output Value from Crop and Livestock Production

The gross value of output includes (a) the volume of main crops produced, valued at post harvest prices, similarly the volume of by-products valued at current prevailing prices. It also includes (b) the gross value of livestock output. The latter includes milk, eggs and so on, and dung. For calculating income, we have to deduct the material costs of production, wage outlays on labour and depreciation of productive assets. This is the concept of Farm Labour Income (FLI) so termed because it includes the return to the family labour put in by the household on the operational holding. For those households which exclusively use outside labour and put in no family labour, the FLI will closely approximate the surplus produced. However this is not the income the household may actually receive if it has to pay rent on leased in land, interest on borrowed capital and commission to traders. The Farm Disposable Income is defined as the Farm Labour Income minus such payments, if any.¹

As regards income inequality among the cultivating peasantry, while differences in yield have been taken into account, we have assumed equal price at which output has been valued for different classes. However, in reality, landlord-capitalists and rich peasants sell their produce at a better price compared to middle and poor peasants who are often at a disadvantageous position in the market. This is as true of sugarcane and wheat as of any other crop such as paddy or even fodder crops. Our estimates of income inequality are, if anything, underestimates and the

¹ U. Patnaik. 1987. *Peasant Class Differentiation: A Study in Method With Reference to Haryana*. p.139.

disparity in income levels between different classes is even greater in reality than our results show.

Table 11.1 shows that crop cultivation provides the major share of output for all classes but declines from 86 percent for the landlords-turning capitalist and rich peasants, to 79 for the middle class and 65.3 percent for poor peasants. Livestock output for the poor households thus accounts for over one-third of combined gross output value. This is in line with earlier analyses which showed how important livestock products were in supplementing the low output from crops of the poorest class arising from its inadequate command over land to cultivate.

Even a cursory glance at Table 11.2a shows how far apart the three classes are from each other in terms of gross output per household, which is most unequal in crop cultivation. The average crop output of the rich household is more than seventeen times of that of the poor and is over four times of that of the middle class. The interesting finding is that output *per acre* from crops is also highest on the rich holdings and diminishes with worsening class position. Given the relatively higher intensity of input application per acre on the holdings of the rich compared to the middle and the poor as we have seen in the last chapter, this outcome of higher yield is expected. But our result clearly goes against the influential argument put forward by A.K.Sen² on the basis of the Indian Farm Management Studies data, that the famous “inverse relation between farm size and yield” is to be explained by the difference between capitalist and family labour based farms. The larger sized holdings which showed lower intensity of cultivation and lower yields, according to Sen belonged to the labour-hiring capitalist farms while the smaller sized farms showing the higher intensity and higher yield belonged to the ‘more efficient’ family-labour based farms.

As pointed out by U. Patnaik³, identifying large and small farm size with capitalist farm and family farms, can be very misleading since physical farm size is not a good proxy either for scale of production or of class position. That is the very

² (i) A. Sen. 1962. ‘An Aspect of Indian Agriculture’. *The Economic Weekly*. Annual Number. pp. 243 & 245-246. (ii) A.K. Sen. 1966. ‘Peasants and Dualism with or without Surplus Labour’. *The Journal of Political Economy*. Vol. 74, 5. pp. 425-450.

³ (i) U. Patnaik. 1972. ‘Economics of Farm Size and Scale- Some Assumptions Re-examined’. *EPW*. Vol.7, 31-33, Special No., Aug. (ii) U. Patnaik. 1987. *Peasant Class Differentiation: A Study in Method with Reference to Haryana*.

reason that a direct index like the labour use index had to be formulated to distinguish precisely the mainly labour-hiring farms from the mainly family labour based farms, rather than relying on the misleading proxy of farm size. Once the direct index of labour-use is applied, far from showing lower inputs per acre and lower yields, the mainly labour-hiring farms representing the capitalist tendency, show higher application of inputs per acre and higher yields compared to the mainly family labour based farms of the middle and poor class. Our result replicates the result in Patnaik (1972, 1987).⁴

Table 11.1: Share of Crop and Livestock Output in Combined Gross Output Value by Class

Class	Percentage Share in Gross Output Value of		
	Crop Cultivation	Livestock Output	All
Landlord + Rich	86.0	14.0	100.0
Middle	79.3	20.7	100.0
Poor	65.3	34.7	100.0
All	84.4	15.6	100.0

Even when we look at Table 11.2b which gives us output *per acre* from crops by farm-size, we find that our data do not show an inverse relation between farm size and yield as the Farm Management Studies data did. Table 11.2b shows that there is no systematic relation, either direct or inverse, between size of farm and crop output per acre. Farms between 5 and 20 acres in size show a slightly higher than the overall average yield, while farms below 5 acres and above 20 acres show a slightly lower than the overall average yield.

The value of livestock products per household in thousand rupees, varies from only 14.6 on poor peasant farms to 28 for middle peasants, to as high as 77.6 for the landlord-capitalists and rich peasants. The average household in the richest class thus produces over five times the livestock products as the poorest class and nearly 3 times as the middle class. But on a per acre basis there is an inverse relation with class status, the poor peasants with little land registering the highest livestock output per acre, 12.1 (in thousand rupees) declining to 7.3 and 5.2 for the middle and rich

⁴Ibid.

Table 11.2a: Gross Output Value per annum by Economic Class

Class	Gross Output Value of Crops			Gross Output Value of Livestock Products			Combined Gross Output Value (Crop+ Livestock)		
	Rs.	Rs.	Rs.000	Rs.	Rs.	Rs.000	Rs.	Rs.	Rs.000
	Per Household	Per Acre	TOTAL	Per Household	Per Acre	TOTAL	Per Household	Per Acre	TOTAL
Landlord+Rich	476,113	31,858	37612.9	77,550	5,189	6126.5	553,664	37,047	43739.4
Middle	107,381	28,149	5476.4	27,972	7,333	1426.6	135,352	35,482	6903
Poor	27,549	22,690	1267.2	14,636	12,055	673.3	42,186	34,746	1940.5
All	252,026	30,996	44356.6	46740	5748	8226.3	298,767	36,744	52582.9

Table 11.2b: Gross Output Value from Crop and Livestock per annum by Farm-size Grouping

Area Operated (acres)	Gross Output Value of Crops			Gross Output Value of Livestock Products			Combined Gross Output Value (Crop+ Livestock)		
	Rs.	Rs.	Rs.000	Rs.	Rs.	Rs.000	Rs.	Rs.	Rs.000
	Per Household	Per Acre	TOTAL	Per Household	Per Acre	TOTAL	Per Household	Per Acre	TOTAL
0-2.5	37,099	30,413	2337.2	14,687	12,040	925.3	51,786	42,453	3262.5
2.51-5.0	110,481	29,335	3424.9	31,008	8,233	961.2	141,489	37,569	4386.1
5.01-10.0	241,721	32,154	8218.5	66,579	8,856	2263.7	308,299	41,010	10482.2
10.01-20.0	446,736	31,692	16976	83,660	5,935	3179.	530,396	37627	20155.1
Above 20.0	1340,002	30,031	13400	89,700	2,010	897	1429,702	32,042	14297
All Sizes	252,026	30,996	44356.6	46,740	5,748	8226.3	298,767	36,744	52582.9

classes. Considering the combined output of crop and livestock products, the variation over classes is slightly reduced owing to the larger weight of livestock products in the poor peasants output, but inequality still remains very high.

11.2. Incomes by Class and by Farm Size

So far, we have considered the variation of output value of crops and livestock products over classes and by farm size groups. In order to arrive at incomes, the cost of production has to be deducted from output value. There can be different concepts of income, depending on what items we define as cost. It is desirable to distinguish clearly between those costs which must be incurred because they are physically necessary for producing output (such as material inputs and labour), and those items of deduction from output value which are costs from the viewpoint of the farmer but which are not physically necessary for output to be produced, such as rent of leased in land and interest on borrowed capital. In order to make this important distinction, we adopt concepts of cost which differ somewhat from those used in the Indian Farm Management Surveys which tend to mix up the two types of costs. We also avoid imputation of value to owned assets, own capital and so on as the economic meaning of such imputation is not clear.

The Farm Labour Income (FLI) is defined here as the excess of the Gross value of output on the operational holding (from all crops, by-products and livestock products) over and above the actual paid-out costs of cultivation, inclusive of the value of farm-produced inputs. These costs of cultivation include seed, fertilizers and manure, pesticides and weedicides, fuel and electricity, livestock feed and maintenance, charges for irrigation, hired-in equipment and livestock, wage outlay on hired labour and depreciation. The last is calculated for agricultural machinery, tools and implements as well as farm buildings.

The *annual* Farm Labour Income (FLI) from combined crop and livestock production, per capita for a poor peasant family is as low as Rs.4,170 compared to Rs.13,795 for the middle peasant and Rs.48,014 for the rich class (Table 11.3a). Table 11.4a shows that the monthly values of per capita FLI come to just below Rs.350, below Rs.1150 and about Rs.4,000 respectively. The abysmally low family labour income of poor peasants implies they would not be able to meet more than a fraction of their subsistence needs if they had to rely on their meagre income from production alone and it is clear why they are driven to seek wage-paid work. Their income from

production comes to only Rs.347.5 per capita per month or Rs.11.6 per capita per day (below even the understated official monthly poverty level expenditure of Rs.365.8 for Uttar Pradesh). The actual disposable income for the poor class is even lower than this (Rs.210 per capita per month, or Rs.7 per day) owing to the high burden of rent and interest payments on them, which we discuss a little later. At the other pole, the landlords- turning capitalists and rich peasants with Rs.4,000 per capita income per month are in a comfortable position, and their families are able to both enjoy higher consumption levels as well as retain substantial investible surplus. Precise comparison of actual income against poverty level expenditure for the classes will be undertaken towards the end of this chapter.

Table 11.3a: Farm Labour Income (FLI) Per Annum from Crop and Livestock Production by Economic Class

Class	FLI from Crop Cultivation				FLI from Combined Crops+ Livestock			
	TOTAL Rs. 000	Per Household Rs.	Per Acre Rs.	Per Capita Rs.	TOTAL Rs.000	Per Household Rs.	Per Acre Rs.	Per Capita Rs.
Landlord +Rich	26,511	335,582	22,455	43,582	29,207	369,709	24,738	48,014
Middle	3,981.3	78,064	20,464	12,010	4,573	89,667	23,506	13,795
Poor	9,27.9	20,172	16,614	3,011	1,285.2	27,938	23,011	4,170
All	31,420.2	178,524	21,956	25,144	3,5065.2	199,234	24,503	28,061

Sample Size (n) = 176

Table 11.3b: Farm Labour Income (FLI) per annum (in Rs.) from Crop and Livestock Production by Farm-size

Area Operated (acres)	FLI per annum from Crops				FLI per annum from combined Output of Crops and Livestock			
	TOTAL Rs.000	Per Household Rs.	Per Acre Rs.	Per Capita Rs.	TOTAL Rs.000	Per Household Rs.	Per Acre Rs.	Per Capita Rs.
0-2.5	1,261.230	20,020	16,412	3,130	1,764.077	28,001	22,955	4,377
2.51-5.0	2,372.105	76,520	20,318	12,822	2,782.969	89,773	23,837	15,043
5.01-10.0	5,829.913	171,468	22,809	23,135	6,944.430	204,248	27,169	27,557
10.01-20.0	12,106.419	318,590	22,601	37,136	13,442.354	353,746	25,095	41,234
Above 20.0	9,850.482	985,048	22,076	105,919	10,131.351	1013,135	22,706	108,939
All Sizes	31,420.149	178,524	21,956	24,956	35,065.181	199,234	24,503	27,852

Sample Size (n) = 176

The variation in Farm Labour Income (FLI) by farm-size groups, as can be seen from Table 11.3b, shows a similar trend. Annual combined income from crops and livestock *per household* in thousand rupees ranges from only 28 for the smallest farms to 1013, or more than 36 times higher for the largest farms which are almost exclusively landlord-capitalist holdings, hiring in nearly 99 percent of total labour days worked (See Chapter 9, Table 9.11b). The annual income per capita ranges from only Rs.4,377 for the smallest holdings to Rs.108,939 for the largest or is 25 times higher. The income over classes shown in Table 11.3a would have shown an even larger range than this range over farm size, if we had separated out the landlord holdings, but the range over classes is smaller only because we take a combined category of landlord and rich peasants together.

The income the farm family actually obtains will however be *less* than the Farm Labour Income if it has net leased-in land on which it has to pay rent, and if it has borrowed money on which at least the interest must be paid. The Farm Disposable Income (FDI) is defined on two bases, as the Farm Labour Income minus payment of rent alone (FDI_A), and minus payment of both rent and interest combined (FDI_B). We would expect the poorer farmers to be obliged to pay a relatively higher amount of their Farm Labour Income as rent and interest compared to the middle and rich classes and this is indeed what our data do show.

Table 11.4a shows that the absolute value of rent and interest payments is actually highest for the poor peasants at Rs. 918.6 per household per month compared to the better off middle peasants and the rich class who paid respectively, Rs.774.5 and Rs.780.6. As we have seen, the Farm Labour Income of the poor peasants household was already very low at Rs.2,328 per month (from combined crop and livestock production). The deduction on account of rent plus interest amounts to a phenomenal 39.5 percent of their already meagre Farm Labour Income for the poor peasants. This is shown in Table 11.5a. Thus, their actual per capita disposable income comes to only Rs.210.4 per month. By contrast, the middle peasants paid 10.4 percent of their FLI as rent plus interest while the landlord-capitalists and rich peasants combined paid only 2.6percent. The range of farm disposable income per household per month shown in Table 11.4a, is from Rs.1,410 for the poor to Rs.6,698 for the middle peasants and Rs.30,029 for the landlord-capitalists and rich peasants.

The corresponding values per capita per month are Rs.210 for the poor, Rs1,030 for the middle peasants and Rs.3,900 for the rich class.

Our method of classification using the labour exploitation index had already taken account of rent payment on net land leased in. Some holdings which would have been put in the middle peasant category on the basis of labour hiring alone, were thereby shifted to the poor peasant category. However our method of classification did not take account of interest payments on borrowed funds, and it is quite possible that had it been possible to do so at the outset, at the margin a few more middle peasant holdings might have got shifted to the poor peasant class. Interest turns out to be even larger in magnitude than rent payments. The interest rates on loans from informal sources such as local landed elite cum moneylenders range between 3 to 5 percent, to an insane 10 percent per month in some cases. Thus indebtedness imposes an enormous strain on the socio-economic well-being of the bulk of the toiling poor as is evident from the fact that it widens considerably, the gap in FDI_B compared to FLI between the three classes. Given the much higher burden of rent and interest payments for the poor, the inequality in farm disposable incomes across the classes is obviously even greater than the inequality in Farm Labour Income as Tables 11.4a, 11.4b and 11.5a show.

Table 11.4a: Rent and Interest Payments, Farm Labour Income, Farm Disposable Incomes from Combined Output of Crops and Livestock by Economic Class

Class	Per Household Per Month, Rs.					Per Capita Per Month, Rs.			Average Family Size
	FLI	Rent	Rent +Interest	FDI_A	FDI_B	FLI	FDI_A	FDI_B	
Landlord + Rich	30,809.1	632.2	780.6	30,176.9	30,028.5	4001.2	3919.1	3899.8	7.7
Middle	7,472.2	590.1	774.5	6,882.2	6,697.7	1149.6	1058.8	1030.4	6.5
Poor	2,328.2	330.1	918.6	1,998.1	1,409.6	347.5	298.25	210.4	6.7
All	16,602.8	541.0	814.9	16,061.8	15,787.9	2338.4	2262.25	2223.7	7.1

Sample Size (n) = 176.

Table 11.4b: Farm Disposable Incomes Per Annum from Crops and Livestock by Economic Class

Class	FDI _A from Crops + Livestock				FDI _B from Crops + Livestock			
	TOTAL Rs.000	Per Household Rs.	Per Acre Rs.	Per Capita Rs.	TOTAL Rs. 000	Per Household Rs.	Per Acre Rs.	Per Capita Rs.
Landlord +Rich	28,607.7	362,123	24,230	47,029	28467	360,342	24,111	46,798
Middle	4,211.9	82,586	21,649	12,706	4099	80,373	21,069	12,365
Poor	11,02.9	23,977	19,748	3,579	778.1	16,915	13,932	2,525
All	33,922.6	192,742	23,705	27,147	33344.1	189,455	23,300	26,684

Note: All payment made on account of leased-in land whether cash or kind is included in rent paid.

Table 11.5a: Annual Shares of Rent and Rent plus Loan Interest in Farm Labour Income by Economic Class (Percent)

Class	Share in FLI from Crop Cultivation, Percent		Share in FLI from Combined Crops + Livestock, Percent	
	Rent	Rent + Interest	Rent	Rent + Interest
Rich	2.3	2.8	2.1	2.6
Middle	9.1	11.9	7.9	10.4
Poor	19.6	54.6	14.2	39.5
All	3.6	5.4	3.3	4.9

The variation of farm disposable incomes across farm size shows a similar picture – the details are available in Tables 11.4c, 11.4d and 11.5b. Interest plus rent payments per household per month range from Rs.549 on the smallest farms to Rs.2,266.7 on the largest. The corresponding range of Farm Disposable Income after deducting both rent and interest payments from the Farm Labour Income, is from a very low Rs.1784 on the smallest farms rising steadily with farm size to as high as Rs.82,161 on the largest farms. The share of rent plus interest payments as a percentage of the FLI from combined output, is the highest for the smallest farms at 23.5 and declines to only 2.7 percent for the farms above 10 acres (Table 11.5b).

Table 11.4c: Rent and Interest Payments, Farm Labour Income, Farm Disposable Incomes from Combined Output of Crops and Livestock by Farm-size

Area Operated (acres)	Per Household Per Month, Rs.					Per Capita Per Month, Rs.			Average Family Size
	FLI	Rent	Rent + Interest	FDI _A	FDI _B	FLI	FDI _A	FDI _B	
0-2.5	2,333.4	101.5	549.4	2,232	1,784.1	364.8	348.9	278.9	6.4
2.51-5.0	7,481.1	588.1	792.5	6,893	6,688.6	1,253.6	1,155	1,120.8	6.0
5.01-10.0	17,020.7	714.4	923.3	16,306.3	16,097.4	2,296.4	2,200.1	2,171.8	7.4
10.01-20.0	29,478.9	622.1	794.4	28,856.8	28,684.5	3,436.2	3,363.7	3,343.6	8.6
Above 20.0	84,427.9	2,266.7	2,266.7	82,161.3	82,161.3	9,078.3	8,834.6	8,834.6	9.3
All Sizes	16,602.8	541.0	814.9	16,061.8	15,787.9	2,321	2,245.3	2,207.1	7.2

Sample size (n) =176

Table 11.4d: Farm Disposable Incomes from Combined Output of Crop and Livestock by Farm Size

Area Operated (acres)	FDI _A per annum from Combined Output Crops and Livestock				FDI _B per annum from Combined Output Crops and Livestock				Average Family Size
	TOTAL Rs.000	Per Household Rs.	Per Acre Rs.	Per Capita Rs	TOTAL Rs.000	Per Household	Per Acre	Per Capita	
0-2.5	1687.4	26,784	21,957	4187	1,348.7	21,409	17,551	3,347	6.4
2.51-5.0	2564.2	82,716	21,963	13860	2,488.2	80,263	21,312	13,449	6.0
5.01-10.0	6653	195,675	26,029	26401	6,567.7	193,169	25,695	26,062	7.4
10.01-20.0	13158.7	346,281	24,566	40364	13,080.1	344,214	24,419	40,123	8.6
Above 20.0	9859.4	985,935	22,096	106015	9,859.4	985,935	22,096	106,015	9.3
All Sizes	33922.6	192,742	23,705	26944	33,344.1	189,455	23,300	26,485	7.2

Sample size (n) =176

Table 11.5b: Annual Shares of Rent and Rent plus Loan Interest in Farm Labour Income by farm size-group (Percentage)

Area Operated (acres)	Share of Rent in FLI from crop cultivation	Share of Rent + Interest in FLI from crop cultivation	Share of Rent in FLI from crop plus livestock	Share of Rent + interest in FLI from crop+ livestock
0-2.5	6.1	32.9	4.3	23.5
2.51-5.0	9.2	12.4	7.9	10.6
5.01-10.0	5.0	6.5	4.2	5.4
10.01-20.0	2.3	2.9	2.1	2.7
Above 20.0	2.8	2.8	2.7	2.7
All	3.6	5.4	3.3	4.9

11.3. Actual Farm Disposable Income Levels Compared with Poverty Level Incomes

The concept of income we have discussed so far is not the same as the concept of ‘economic surplus’ generated on the farms. Surplus can be assumed to be available for investment or for raising consumption above minimum levels, or for a combination of the two. Only for the landlords- turning capitalist farms, where the family puts in no labour in production at all, is the surplus the same as the farm labour income. For all other farms where the family while hiring labour also itself puts in some working days in production, or where it depends almost entirely on the family members working on its farm, we need to deduct the subsistence requirement of the workers. The daily value of subsistence requirements for family workers, would satisfy the same function as the daily market wage rate does for hired labour, namely ensure the social reproduction of the family and hence of the workers’ capacity to work, without which no production can take place.

However these subsistence requirements of the family workers can be approximated in two different ways, which can give very different results. If we assume that the daily market wage rate for casual labour is a measure of the ‘necessary labour’ or daily subsistence requirement of the hired worker, then we can impute this market wage rate to the family labour days worked and compare with the actual income generated. Alternatively we can take the official poverty level spending, which is based on satisfying a minimum nutrition norm, and see whether the income actually generated in production, is enough to meet at least this poverty

level spending or is high enough to also provide a surplus which in principle could be used for investment.

Tables 11.6a and 11.6b show the results of the first exercise of valuing family labour at the then-prevalent market wage rate for casual labour of Rs.60 per day. The family labour days worked per month by the typical poor household is remarkably low at only 5.4 taking all working members in the family which has 6.7 members. This very low figure of days worked on –farm may be partly a result of our underestimating the work put in (especially in livestock production), while partly it reflects the inability to generate adequate self-employment on farm, given the very limited land and other resources with this class. The imputed value of family labour is a paltry Rs.322.5, and this class shows thereby a nominal ‘farm disposable surplus’ of Rs.1087, which clearly is not a true surplus since the imputed wages would not meet even a single person’s monthly subsistence requirement, leave alone that of the family.

Let us rather take the alternative concept of surplus, and compare the farm disposable income of this class with the official required poverty level spending. Since the reference year for our survey is the agricultural year 2005-06, we update the official poverty line of 2004-05 by the price rise for one year (using the consumer price index for rural labour) to bring it up to 2005-06. The *Economic Survey* shows that prices rose 5 percent between 2004-05 and 2005-06, so after updating we obtain the required official poverty level spending for 2005-06. The average family size for the poor class is 6.7. The Planning Commission’s revised rural monthly per capita poverty line based on Mixed Reference Period (MRP) distribution for Uttar Pradesh in 2004-05 was Rs.435 (Tendulkar estimate). However, we consider a lower revised official poverty line of Rs.426 estimated by U. Patnaik on the basis of Uniform Reference Period (URP) distribution of MPCE. The latter, when adjusted for inflation, becomes Rs.447.3 in 2005-6. This means that a 6.7 member family required a monthly farm disposable income of Rs.447.30 times 6.7 which works out to Rs.2,997, while the actual Farm Disposable Income for the poor class was Rs.1,410, leaving a large deficit of Rs.1,587. Further, as we will see later in Section V, the Planning Commission’s poverty line itself is an underestimate and the actual deficit is accordingly larger.

The on-farm employment we have recorded for the middle group of peasant households, which has better land resources, is somewhat higher at 15 days monthly. But its imputed value of family labour of Rs.906 per month certainly would not cover the monthly consumption needs of the family, which with an average size of 6.5 required Rs.2907.45 to meet even the official underestimated poverty level. Deducting this sum from the Farm Disposable Income, gives the alternative measure of Farm Disposable Surplus of Rs.3790.3. This class too relies on other income sources as we shall see.

Table 11.6a: Per Household Family Labour Days and Imputed value of family labour by Economic Class

Class	Annual family labour days per household	Imputed value of family labour at Rs.60/day		Required monthly poverty level spending (at 2005-06 official poverty line of Rs.447.30 for U.P.), Rs.	Average family size
		Annual Rs.	per Month Rs.		
Landlord + Rich	82.9	4,974	414.5	3,444.21	7.7
Middle	181.2	10,872	906	2,907.45	6.5
Poor	64.5	3,870	322.5	2,997	6.7
All	106.6	6,396	533	3,176	7.1

Table 11.6b: Monthly Farm Disposable Surplus per Household from Cultivation and Livestock by Economic Class

Class	Farm Disposable Income FDI_B Rs.	Imputed value of family labour per month Rs.	Required monthly poverty level spending (at 2005-06 official poverty line of Rs. 447.30 for U.P.) Rs.	Farm disposable surplus - A (FDI_B - Imputed value of family labour at Rs.60/day), Rs.	Farm disposable surplus - B (FDI_B - official poverty level income) Rs.
Landlord + Rich	30,028.5	414.5	3,444.21	29,614.04	+26,584.3
Middle	6,697.7	906	2,907.45	5,791.56	+3,790.25
Poor	1,409.6	322.5	2,997	1,087.13	-1,587.4
All	15,787.9	533	3176	15,255.01	+12,612

It is only the class of landlord-capitalists and rich peasants whose monthly farm disposable surplus per household at Rs.26,584 is large enough not only to meet their family consumption requirements at a much higher level than the required poverty level spending of Rs.3,444.2, but also leave a large margin for investment.

Very low family labour days are recorded for all farm sizes, being particularly low at 60 labour days worked annually by the smallest farms of up to 2.5 acres (Table 11.6c). A notional 'surplus' of Rs.1485 per month emerges on these farms for farm disposable surplus by deducting the imputed value of family labour, in this case is only Rs.300 per month, from the farm disposable income (FDI_B) of Rs.1784. Deducting the official poverty level spending, however, there is a deficit of Rs.1079. The imputed value of family labour for holdings in the 2.5 to 5 acres category is similarly low at Rs.761, way below the required monthly official poverty level income of Rs.2684. This group is left with a small monthly 'farm disposable surplus' of Rs.4,005 when the poverty level consumption is deducted from the Farm Disposable Income. The large sized holdings of 10 acres and above comprising mostly the landlord-capitalists and rich farmers, however register farm disposable surplus ranging, in thousand rupees, between 25 to 78, is clearly the privileged section within the cultivating population.

Table 11.6c: Per Household Family Labour Days and Imputed value of family labour by Farm-Size

Area Operated (acres)	Annual family labour days per household	Imputed value of family labour at Rs.60/day		Required monthly poverty level spending (at 2005-06 official poverty line of Rs. 447.30 for U.P.), Rs.	Average family size
		Annual Rs.	per Month Rs.		
0-2.5	59.9	3,594	299.5	2,862.7	6.4
2.51-5.0	152.2	9,132	761	2,683.8	6.0
5.01-10.0	169.2	10,152	846	3,310	7.4
10.01-20.0	109.2	6,552	546	3,846.8	8.6
Above 20.0	36.2	2,172	181	4,159.9	9.3
All Sizes	106.6	6,396	533	3,220.6	7.2

Table 11.6d: Monthly Farm Disposable Surplus per Household from Cultivation and Livestock by Farm-Size

Area Operated (acres)	Farm Disposable Income FDI _B Rs.	Imputed value of family labour per month at Rs.60/day Rs.	Required monthly poverty level spending (at 2005-06 official poverty line of Rs. 447.30 for U.P.) Rs.	Farm disposable surplus – A (FDI _B – Imputed value of family labour at Rs.60/day), Rs.	Farm disposable surplus – B (FDI _B – official poverty level income) Rs.
0-2.5	1,784.1	299.5	2,862.7	1484.6	-1,078.6
2.51-5.0	6,688.6	761	2,683.8	5927.6	+4,004.8
5.01-10.0	16,097.4	846	3,310	15251.4	+12,787.4
10.01-20.0	28,684.5	546	3,846.8	28138.5	+24,837.7
Above 20.0	82,161.3	181	4,159.9	81980.3	+78,001.4
All Sizes	15,787.9	533	3,220.6	15254.9	+12,567.3

In the next section, we examine incomes of the household from such sources as wages from farm and non-farm work, regular salaried employment, remittances and other non-farm activities. We will then compare the final total income position with poverty level income to determine whether the rural poor who are below the poverty level consumption when relying on farm production alone, are able to pull themselves out of poverty.

11.4. Income from Sources other than Crop and Livestock Farming

Additional sources of incomes (other than incomes earned in direct cultivation) accruing to the three classes and by farm size, are shown in Tables 11.7a and 11.7b. We find that the class of landlord-capitalists and rich peasants, with the highest farm income per household, also records the highest income from additional sources per household at Rs.73,215 annually compared to Rs.12,834 for the middle peasants and Rs.24,884 for the poor class. For the rich class, ‘remittances and non-farm activities’ constituted the most important source providing 77.6 percent of total additional incomes. At the other pole, as expected wages from casual labour days hired-out in all types of work, was the most significant income source for the poor peasant class, amounting to 73.6 percent of their total additional income while about 16 percent came from remittances. For the middle class, regular salaried employment

made up the bulk, 56.3 percent, while the category remittances and non-farm activities at 40.6 percent was next in importance.

The distribution of additional incomes by farm-size reveals a similar trend, as Table 11.7b shows. It is the largest sized holdings of 20 acres and above that register the highest average annual income (in thousand rupees) of Rs.233 from additional sources. At the other end, the smallest sized holdings in the 0 to 2.5 acres category earn Rs.20,744 outside of direct cultivation, an amount that is less than one-tenth of what accrues to the largest farm-size group. While remittances and non-farm activities provide between 72 and 82 percent of additional incomes for the larger sized holdings of 5 acres and above, income from casual daily wage employment is the most important source providing more than three-fourths of the total additional income to holdings in the smallest farm-size group. With most of the poor class households operating an area upto 2.5 acres (42 out of 46; see Chapter 8, Table 8.1a), it is the marginal farmers of the smallest acreage group for whom wage income from casual labour days hired-out in all types of employment, is the most important source of income. However, given that even the smallest farm-size group is a mix of rich, middle and poor households, the true extent to which an average poor class household depends on income drawn from hiring-out its labour is bound to be understated when holdings are classified solely on the basis of farm-size as opposed to the analytical concept of economic class. This is indeed what a comparison of Tables 11.7a and 11.7b shows. The significance of wage income in total additional income sources increases from three-fifths (60.8 percent) when holdings are grouped by acreage to nearly three-fourths (73.6 percent) when economic class is used as an index.

Table 11.7a: Incomes per household by Class from Sources other than direct cultivation and its percentage distribution

Class	Income Per annum per household, Rs					Percentage Shares				
	Casual Daily Wages in Farm Employment	Casual Daily Wages in Non-Farm Employment	Regular Salaried Non-Farm Employment	Remittances and non-farm activities	TOTAL	Casual Daily Wages in Farm Employment	Casual Daily Wages in Non-Farm Employment	Regular Salaried Non-Farm Employment	Remittances and non-farm activities	TOTAL
Landlord + Rich	0	0	16,405	56,810	73,215	0.0	0.0	22.4	77.6	100.0
Middle	322	75	7,231	5,206	12,834	2.5	0.6	56.3	40.6	100.0
Poor	11,208	7,110	2,615	3,950	24,884	45.0	28.6	10.5	15.9	100.0
All	3,023	1,880	10,143	28,041	43,086	7.0	4.4	23.5	65.1	100.0

Table 11.7b: Incomes per household by Farm Size from Sources other than direct cultivation and its percentage distribution

Operated Area, Acres	Income Per annum per household, Rs.					Percentage shares				
	Casual Daily Wages in Farm Employment	Casual Daily Wages in Non-Farm Employment	Regular Salaried Non-Farm Employment	Remittances and non-farm activities	TOTAL	Casual Daily Wages in Farm Employment	Casual Daily Wages in Non-Farm Employment	Regular Salaried Non-Farm Employment	Remittances and non-farm activities	TOTAL
0-2.5	7,713	4,893	4,656	3,483	20,744	37.2	23.6	22.4	16.8	100.0
2.51-5.0	1,361	21	12,639	4,703	18,723	7.3	0.1	67.5	25.1	100.0
5.01-10.0	114	647	3,059	9,941	13,761	0.8	4.7	22.2	72.2	100.0
10.01-20.0	0	0	13,579	62,526	76,105	0.0	0.0	17.8	82.2	100.0
Above 20.0	0	0	48,000	185,600	233,600	0.0	0.0	20.5	79.5	100.0
All Sizes	3,023	1,880	10,143	28,041	43,086	7.0	4.4	23.5	65.1	100.0

In the next two tables we look at the share of each income source in the total income from both cultivation and all other incomes. For the rich class and the middle peasants, the additional incomes make up secondary sources since more than four-fifths of their total income derives from direct cultivation (Table 11.7c). For the poor however, income from direct cultivation is the minor source being only two-fifths of their total income from all sources. This reflects their meagre income, already discussed, from inadequate land resources which forces them to hire-out their labour for wages. They rely heavily on casual daily wage employment in both agricultural and non-farm activities. As much as 44 percent of their income earned from all sources, is by thus hiring themselves out in all types of daily wage paid work. Table 11.7c gives the distribution of total income by source of income for the three cultivating classes.

Furthermore, the dependence on agriculture as the primary source of income for all acreage groups is evident from Table 11.7d. For every acreage group barring the smallest one of 0 to 2.5 acres, more than four-fifths of the total income is drawn from the agrarian sector. The dependence of marginal farmers operating an area of 2.5 acres or less on additional sources of incomes is much higher than for cultivators in the other size-groups as may be expected. Table 11.7d shows that nearly half of the total income of cultivators in the smallest sized group comes from sources other than direct cultivation.

We have already seen how sole reliance on income from farm production does not allow an average poor class household to meet even the underestimated official poverty level spending on minimum nutrition. In the next section, we examine whether such additional incomes, other than those earned in direct cultivation, have any meaningful impact on the economic well-being of the marginalized class of semi-landless and landless tillers. Specifically, we compare the final total income position with poverty level income to determine whether the rural poor who are below the poverty level consumption when relying on farm production alone, are able to pull themselves out of poverty.

Table 11.7c: Distribution of Total Income by Source for Class

Class	Percentage Share in Total Income by Source								Share of Wages in Total Income
	Agricultural			Non-Agricultural					
	Direct Cultivation	Casual Daily Wage	TOTAL AGRICULTURAL INCOME	Casual Daily Wage	Regular Salaried	Remittances and other self-employed activities	TOTAL NON-AGRICULTURAL INCOME	TOTAL INCOME	
Rich	83.1	0.0	83.1	0.0	3.8	13.1	16.9	100.0	0.0
Middle	86.2	0.3	86.6	0.1	7.8	5.6	13.4	100.0	0.4
Poor	40.5	26.8	67.3	17.0	6.3	9.5	32.7	100.0	43.8
All	81.5	1.3	82.8	0.8	4.4	12.1	17.2	100.0	2.1

Note: The concept of FDI_B is used

Table 11.7d: Distribution of Total Income by Source for each Farm-Size Group

Area Operated (acres)	Percentage Share in of Total Income (Farm+Non-Farm) by Source								Total Share of Wages in Aggregate (Average) Incomes Earned
	Agricultural			Non-Agricultural					
	Direct Cultivation	Casual Daily Wage Income	Total Agricultural Income	Casual Daily Wage Income	Regular Salaried	Remittances and other self-employed activities	Total Non-Agricultural Income	TOTAL INCOME (Farm+Non-Farm)	
0-2.5	50.8	18.3	69.1	11.6	11.0	8.3	30.9	100.0	29.9
2.51-5.0	81.1	1.4	82.5	0.0	12.8	4.8	17.5	100.0	1.4
5.01-10.0	93.3	0.1	93.4	0.3	1.5	4.8	6.6	100.0	0.4
10.01-20.0	81.9	0.0	81.9	0.0	3.2	14.9	18.1	100.0	0.0
Above 20.0	80.8	0.0	80.8	0.0	3.9	15.2	19.2	100.0	0.0
All Sizes	81.5	1.3	82.8	0.8	4.4	12.1	17.2	100.0	2.1

11.5. Actual Total Income Levels Compared with 'Poverty' Level Incomes

A comparison of actual income from direct cultivation and additional sources with poverty level incomes by economic class and farm-size can be seen from Tables 11.8a, 11.8b, 11.9a and 11.9b. Poverty level incomes or the minimum required monthly per capita consumption expenditure per household has been estimated at two different poverty lines. The first refers to the Planning Commission's estimate of the expert group set up under the chairmanship of Suresh D. Tendulkar in 2009 amidst growing concern regarding the grossly underestimated official rural poverty lines and estimates released by the planning commission thus far. As has already been noted, the Tendulkar Committee revised upwards the Planning Commission's estimate of minimum monthly per capita expenditure of Rs.366 for U.P. in 2004-05 to Rs.435.14.⁵ However, we consider a lower revised official poverty line of Rs.426 for U.P. estimated by U. Patnaik on the basis of Uniform Reference Period (URP) distribution of MPCE. After adjusting for price rise, this amounts to Rs.447.3 by 2005-06.

The second poverty line refers to Prof. U. Patnaik's estimate of Rs.586.5 in 2004-05 which amounts to Rs.615.825 by 2005-06 after adjusting for price rise. It refers to the monthly per capita expenditure on all goods and services, whose food spending part allowed the consumer to access the earlier official minimum nutrition norm of 2200 calories per capita per day in rural areas (the norm actually applied in the base year 1973-4 by the Planning Commission).

Table 11.8a shows that the monthly total income per household of the landlord-capitalists and rich peasants is more than ten times that of the poor class family, and is nearly five times that of an average middle class household. The inclusion of additional income in the earnings of the poor raises the latter nearly 2.5 times from Rs.1410 in farm production alone to Rs.3483 per month when all income sources are included. While the monthly disposable income was insufficient earlier leaving a large deficit of Rs.1,587 considering only direct cultivation (Table 11.8b), it rises above the official poverty level spending of Rs.2997 leaving this class with a small 'disposable surplus' of Rs.486 per month. The middle class households are left with a monthly disposable surplus of Rs.4860 after deducting the official poverty level

⁵ Press Note on Poverty Estimates. Government of India, Planning Commission. January 2011.

consumption spending of Rs.2907 from their total monthly income of Rs.7767. The class of landlord-capitalists and rich peasants is very comfortably placed with more than 67 times the total disposable surplus of the poor class and more than six times that of the middle class.

By farm size we see a similar trend (Tables 11.9a and 11.9b). The holdings in the 0 to 2.5 acres group whose income from direct cultivation alone was in deficit compared to the official expenditure required, with the inclusion of all other incomes, now records a monthly surplus of Rs.650. As expected, total disposable surplus rises steadily with increasing farm-size. The range varies from a meagre Rs.650 on the smallest sized holdings to as much as Rs.97,468 on the largest sized holdings comprising a mix of landlord-capitalists and rich peasants.

It is important to note that the even the nominal disposable 'surplus' that is left with the poor class households (majority of whom cultivate holdings of less than 2.5 acres) after deducting the official poverty level consumption spending from their total income, is actually not a 'surplus' at all. It has been widely noted that the official poverty line, defined as the monthly per capita expenditure required to access the nutrition norm of 2200 Kcal. per capita per day in rural areas (the norm actually applied in the base year 1973-4), has been underestimated over the years because the original 1973-4 poverty line was merely brought forward to subsequent years using a price index (which means that the base-year basket was fixed) and these official poverty lines now allowed access only to steadily *declining* calorie intake levels. For example by 2004-5 the official poverty line for All-India allowed only 1825 calories, while the official poverty line for U.P allowed 1965 calories. To maintain the same nutritional intake level of 2200 calories per day, the required monthly poverty line for Uttar Pradesh was higher at Rs.586.5 in 2004-05 which as noted, amounts to Rs.615.825 by 2005-06 after adjusting for price rise.⁶ It was argued that the poverty lines have to be nutrition-invariant over time - otherwise we cannot validly compare if the very standard against which poverty is being measured, is allowed to change (See Chapter 6, Section II(E)).

⁶ U. Patnaik. 2007. 'Neoliberalism and Rural Poverty in India'. *EPW*. July 28-Aug.3, pp.3132-3150. See also U. Patnaik. 2013. 'Poverty Trends in India 2004-05 to 2009-10 : Updating Rural and Urban Poverty Estimates and Comparing with Official Estimates'. *EPW*. Vol. XLVIII No.40 October 5.

Looking at the deviation of actual incomes from required consumption using the direct poverty line of Rs.615.83(based on the original official calorie norm), the deficit taking farm disposable income from cultivation as expected becomes larger, and even the inclusion of all additional sources of income to obtain the total disposable income, now leaves a deficit for the poorest class. Deducting the required spending of the family of Rs.4126(based on the nutrition-invariant or direct poverty line) from the disposable income from cultivation of a poor household, the deficit increases by more than 70 percent from the earlier recorded Rs.1,587 to Rs.2,716. The earlier surplus of Rs.486of the total monthly income from all sources, above the official poverty level spending, turns into a deficit of Rs.643 when the required nutrition-invariant poverty level expenditure is considered. The middle class family, when relying solely on income from direct cultivation, is left with a surplus of less than Rs.2,700 per month which increases to Rs.3,764, after their poverty level income of around Rs.4,000 is deducted from their farm disposable and total incomes respectively. The class of landlords- turningcapitalists and rich peasant households with monthly surpluses (in thousand rupees) of more than 25 and 31 respectively in farm disposable and total incomes, is evidently the only class having large enough investible surplus at its disposal after their minimum monthly consumption expenditure of Rs.4,742 is deducted from their monthly disposable incomes. Their actual consumption would of course be much higher – the consumption data we collected were not sufficiently reliable to be presented here.

An examination of the variation by farm size in the surplus/deficit of disposable incomes over required consumption per household as shown in Table 11.9b reveals a similar trend. For the smallest sized farms, the existing deficit of Rs.1,079 taking income from cultivation compared to the required official poverty level spending,doubles to a deficit of Rs.2,157 when the nutrition-invariant poverty line is applied. Adding all other income sources, a surplus of Rs.650emerges for this class taking the required official poverty level spending, but taking the higher spending required for maintaining the nutritional level constant, while the deficit is lowered it still remains a deficit of Rs.429 for this group. Though additional earnings outside of direct cultivation contribute significantly to the actual monthly income a typical smallest sized holding has at its disposal, in fact giving nearly as much as the income from cultivation, the total earnings are clearly still insufficient and do not

enable such holdings to access even the bare minimum required calorie norm of 2200 per capita per month.

Table 11.8a: Class-wise Monthly Per Household Actual Incomes and Minimum Required Consumption Expenditure based on Poverty Lines in U.P., 2005-06

Class	Income from Additional Sources (Y _A) Rs.	Farm Disposable Income (FDI _B) Rs.	ACTUAL TOTAL INCOME (Direct Cultivation + Additional sources) Rs.	Minimum Required monthly consumption expenditure per household in 2005-06 for U.P. based on		Average Family Size
				Official Poverty Line of Rs.447.30 (Tendulkar estimate) Rs.	Poverty line of Rs.615.825 giving 2200 Kcal. per capita per day (Patnaik estimate)Rs.	
Landlord + Rich	6101.25	30,028.5	36,129.75	3,444.21	4,741.85	7.7
Middle	1069.5	6,697.7	7,767.2	2,907.45	4,002.86	6.5
Poor	2073.67	1,409.6	3,483.27	2,997	4,126.03	6.7
All	3590.5	15,787.9	19,378.4	3,176	4,372.36	7.1

Note: Poverty lines for 2005-06 have been estimated by adjusting the given 2004-05 poverty lines for 5 percent price rise between 2004-05 and 2005-06.

Table 11.8b: Deviation of Monthly Per Household Actual Incomes from Poverty Level Incomes in U.P. by Class, 2005-06

Class	Deviation of Farm Disposable Income (FDI _B) from		Deviation of TOTAL INCOME (FDI _B + Additional) from	
	OPL of Rs.447.30 (Tendulkar estimate), Rs.	DPL of Rs.615.825 giving 2200 kcal. (U. Patnaik estimate), Rs.	OPL of Rs.447.30 (Tendulkar estimate), Rs.	DPL of Rs.615.825 giving 2200 kcal. (U. Patnaik estimate), Rs.
Landlord + Rich	26,584.3	25,286.65	32,685.5	31,387.9
Middle	3,790.25	2,694.84	4,859.75	3,764.3
Poor	- 1,587.4	-2,716.4	486.3	- 642.8
All	+12,612	11,415.5	16,202.4	15,006.04

Table 11.9a: Monthly Per Household Actual Incomes and Minimum Required Consumption Expenditure based on Poverty Lines in U.P. by Farm-Size, 2005-06

Area Operated (acres)	Income from Additional Sources (Y _A) Rs.	Farm Disposable Income (FDI _B) Rs.	ACTUAL TOTAL INCOME (Direct Cultivation + Additional sources) Rs.	Minimum Required monthly consumption expenditure per household in 2005-06 based on		Average Family Size
				Poverty Line of Rs.447.30 (Tendulkar estimate) Rs.	Poverty line of Rs.615.825giving 2200 kcal. per capita per day (Patnaik estimate), Rs.	
0-2.5	1,728.67	1,784.1	3,512.77	2,862.7	3,941.3	6.4
2.51-5.0	1,560.25	6,688.6	8,248.85	2,683.8	3,695	6.0
5.01-10.0	1,146.75	16,097.4	17,244.15	3,310	4,557.1	7.4
10.01-20.0	6,342.1	28,684.5	35,026.6	3,846.8	5,296.1	8.6
Above 20.0	19,466.67	82,161.3	101,627.97	4,159.9	5,727.2	9.3
All Sizes	3,590.5	15,787.9	19,378.4	3,220.6	4,433.9	7.2

Table 11.9b: Deviation of Monthly Per Household Actual Incomes from Poverty Level Incomes in U.P. by Farm-Size, 2005-06

Area Operated (acres)	Deviation of Farm Disposable Income (FDI _B) from		Deviation of TOTAL INCOME (FDI _B + Additional) from	
	OPL of Rs.447.30 (Tendulkar estimate), Rs.	DPL of Rs.615.825 giving 2200 kcal. (Patnaik estimate), Rs.	OPL of Rs.447.30 (Tendulkar estimate), Rs.	DPL of Rs.615.825 giving 2200 kcal. (Patnaik estimate), Rs.
0-2.5	-1,078.6	-2,157.2	650.1	-428.5
2.51-5.0	4,004.8	2,993.6	5,565.1	4,553.8
5.01-10.0	+12,787.4	11,540.3	13,934.2	12,687.1
10.01-20.0	+24,837.7	23,388.4	31,179.8	29,730.5
Above 20.0	+78,001.4	76,434.1	97,468.1	95,900.8
All Sizes	+12,567.3	11,354	16,157.8	14,944.5

Households operating an area between 2.5 and 5 acres are left with small monthly surpluses (in thousand rupees) of 3 and 4.5 after their minimum monthly consumption spending at nearly Rs.3700 required to access 2200kcal.per capita per month is deducted from their actual farm disposable and total incomes. Clearly, it is the large sized holdings operating an area above 10 acres that have huge investible

surpluses at their disposal ranging (in thousand rupees) from 29 on holdings in the 10-20 acres group to nearly 96 on farms above 20 acres in size.

The findings detailed above are presented graphically for the three classes in Figs. 1 to 3, to bring out the truly dominant position of the landlords and rich peasants. Our findings detailed so far have clearly shown that the rural poor and even the middle class of farmers are in no position to meet their minimum required consumption spending from farming alone. While the poor class registers very large deficits forcing them to labour for others, even the middle group of farmers generate hardly Rs.400 per capita surplus monthly over the bare-minimum consumption needs of the family. With income from all other sources taken into account the situation of the poor class does improve but it still continues to register a deficit of consumption while the surplus of the middle class improves very little to Rs.580 per capita per month.

This means that the social base for investment in rural areas still remains really narrow and possibly is getting narrower over time. It is only the class of rich peasants and landlord-capitalists taken together which registers sufficiently large surpluses to undertake investment.

Fig.11.1: Farm Disposable Income and Total Income from all Sources, by Class

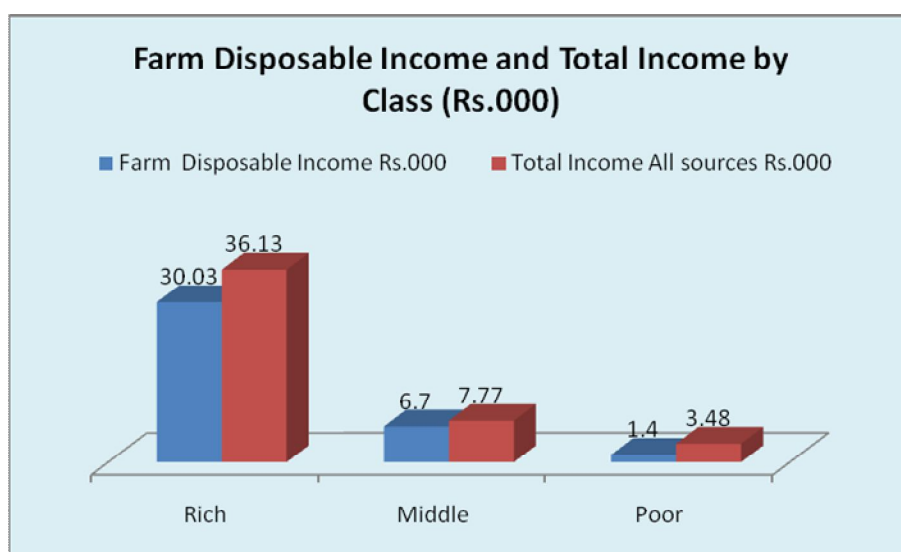


Fig.11.2: Farm Disposable Surplus over Official Poverty level Spending and (2200 calories) Direct Poverty level Spending, by Class

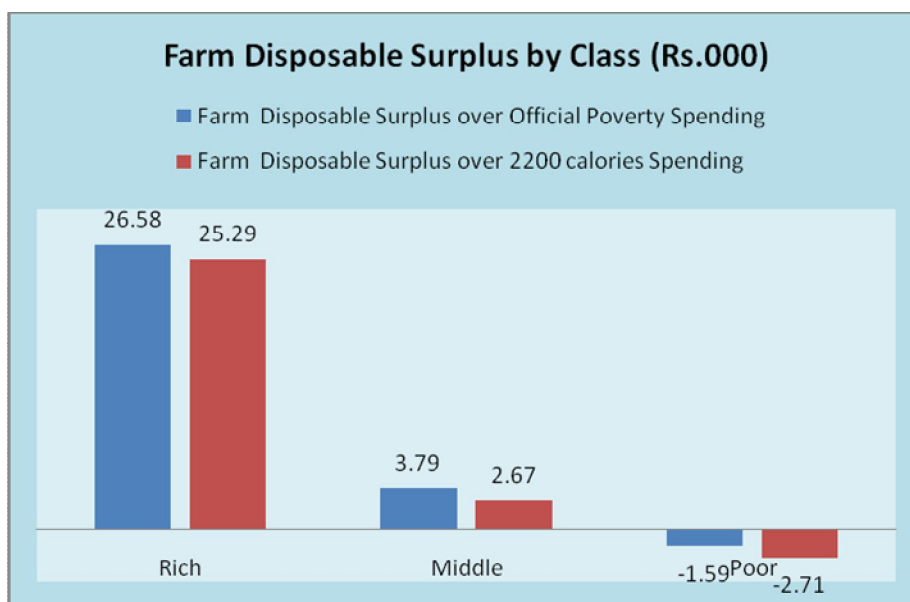
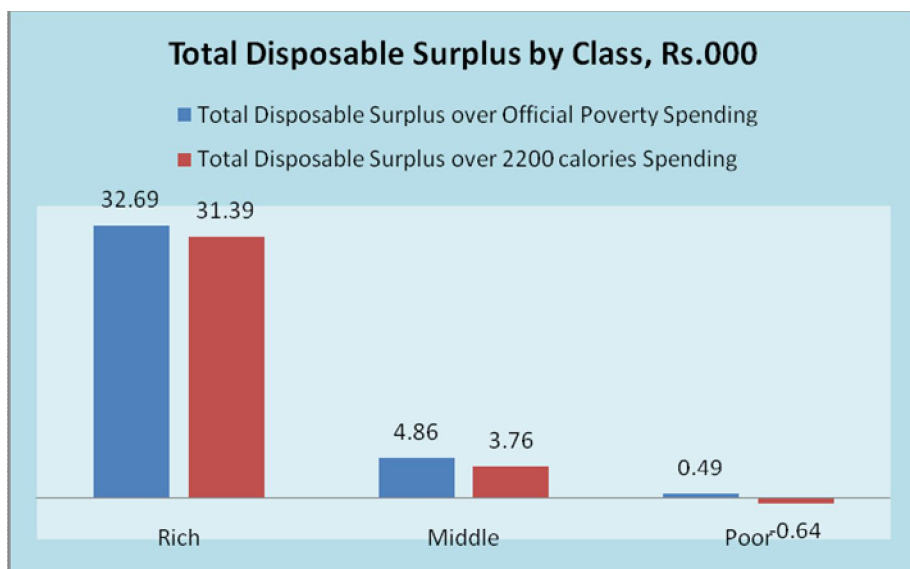


Fig.11.3: Total Disposable Surplus over Official Poverty level Spending and (2200 calories) Direct Poverty level Spending, by Class.



11.6. Situation Assessment Survey of Farming Households

The NSSO carries out a Situation Assessment Survey of farming households every decade or so, the latest being the 70th Round 2013. The earlier survey was in 2003, the data of which reflected the very bad drought year of 2002-3, the worst for more than 15 years. Typically in such drought years the dependence on wage-paid work goes up as more small cultivators, unable to make ends meet from farming, throw themselves on the labour market. 2013 however was a very good agricultural year. In spite of this, nearly 70 percent of all farms at the All-India level could not generate enough income to cover their consumption, as Table 11.10a shows. Positive investment in this situation had to come out of borrowed funds. Further, combined income from cultivation and farming of animals could not meet the monthly consumption expenditure of as many as 87 percent of the agricultural households.

Uttar Pradesh presents an even more dismal scenario than the one prevailing at the All-India level. Table 11.10b shows that more than 82 percent of the agricultural households in U.P. had an average monthly income from all sources which did not even cover their consumption expenses per month in 2013. If we consider the combined income from cultivation and farming of animals, we find that barring the top 5 to 6 percent of the agricultural households, cultivation for the vast majority is unviable as a source of income.

Despite the increasing unviability of agricultural production for the bulk of the cultivating masses both in U.P. and All-India, the NSS data on the structure of average incomes during 2003 and 2013 shows an increase in reliance on direct cultivation as a source of income and a corresponding decline in dependence on income from wage-based work in 2013 compared to 2003

Table 11.10a: Monthly Income from All Sources, Consumption and Investment, All-India 2013

Size Class of Land Possessed (ha)	Income from Wages/Salary (Rs.)	Net receipt from cultivation (Rs.)	Net receipt from farming of Animals (Rs.)	Net receipt from Nonfarm Business (Rs.)	TOTAL INCOME (Rs.)	Total Consumption expenditure (Rs.)	Total Income minus Consumption (Rs)	Net Investment in productive assets (Rs.)	Cummulative % of HH
<0.01	2902	30	1181	447	4561	5108	-547	55	2.64
0.01-0.4	2386	687	621	459	4152	5401	-1249	251	34.5
0.41-1.00	2011	2145	629	462	5247	6020	-773	540	69.42
1.01-2.00	1728	4209	818	593	7348	6457	891	422	86.59
2.01-4.00	1657	7359	1161	554	10730	7786	2944	746	95.89
4.01-10	2031	15243	1501	861	19637	10104	9533	1975	99.61
10.00+	1311	35685	2622	1770	41388	14447	26941	6987	100
ALL	2071	3081	763	512	6426	6223	203	513	

Source: NSS Report, 70th Round 2013: *Key Indicators of Situation of Agricultural Households in India.*

Table 11.10b: Average monthly income from all sources, Consumption and Investment, Uttar-Pradesh 2013

Size-class of Land Possessed (hectares)	Income from Wages (Rs.)	Net receipt from Cultivation (Rs.)	Net receipt from Farming of Animals (Rs.)	Net receipt from Non-Farm Business (Rs.)	TOTAL INCOME (Rs.)	Total Consumption Expenditure (Rs.)	Income minus Consumption (Rs.)	Net investment in Productive Assets (Rs.)	Cumulative % of Households
<0.01	2358	-7	513	819	3683	5137	-1454	93	3.89
0.01-0.40	1143	851	377	354	2724	4911	-2187	36	52.38
0.41-1.00	1067	2860	416	262	4605	6976	-2371	406	82.29
1.01-2.00	992	5892	976	542	8402	7684	718	140	93.93
2.01-4.00	1025	12591	1711	533	15861	10525	5336	-3141	98.61
4.01-10.00	1219	19564	1743	439	22964	12233	10731	2254	99.89
>10.00	5231	56014	19	341	61605	17417	44188	26315	100.00
All sizes	1150	2855	543	376	4923	6230	-1307	70	

Source: NSS Report No. 569, 70th Round, 2013, *Some Characteristics of Agricultural Households in India*.

Table 11.11: Distribution of Average Monthly Income of an Agricultural Household by Source of Income, 2003 and 2013

Year	Distribution of Average Monthly Income of Agricultural Households by Source of Income											
	Uttar-Pradesh						All-India					
	Income from wages	Net receipt from cultivation	Net receipt from farming of animals	Net receipt from non-farm business	TOTAL INCOME	TOTAL INCOME (Rs.)	Income from wages	Net receipt from cultivation	Net receipt from farming of animals	Net receipt from non-farm business	TOTAL INCOME	TOTAL INCOME (Rs.)
2003	34.2	51.2	3.2	11.3	100.0	1633	38.7	45.8	4.3	11.2	100.0	2115
2013	23.4	58.0	11.0	7.6	100.0	4923	32.2	47.9	11.9	8.0	100.0	6426

Source: For 2003, NSSO Report Number 497, Statement 5, p.14. For 2013, NSSO Report No. KI (70/33) 70th Round “Key Indicators of Situation of Agricultural Households in India”, p. A-11.

In Table 11.11, we compare the structure of average income during 2013 and 2003 for both All-India and Uttar Pradesh. The survey shows a decline in wage income in average income of the cultivating households in U.P. Given the importance of wage income from farm and non-farm employment in the overall economy of the vast masses of the poor peasantry, this decline in alternative income earning opportunities for the rural poor is significant. Comparability is affected however by the fact earlier mentioned that 2003 was a very severe drought year while 2013 was an above average year for production. The high share of wage income in total income in 2003 may well reflect the abnormal situation prevailing at that time as regards inability to generate enough incomes from cultivation even on farms which would be viable under normal conditions.

Another important factor to bear in mind is that while possession of land was a necessary condition for defining 'farmer' in the 2003 survey, in 2013 this criterion was given up and replaced by the concept of 'agricultural production unit.' So it is likely that while landless tenants were excluded earlier, their inclusion in 2013 could have swelled the contribution of cultivation to total income.

The changing structure of total income in rural Uttar-Pradesh is a reflection of broader trends at the All-India level. The decade 2003 to 2013 has seen a 32 percent decline in the share of wage income in total income of an average farm household in Uttar Pradesh. This fall is particularly sharp when compared with a 17 percent fall at the all-India level. Moreover, we also see a 33 percent fall in the percentage share of non-farm business in aggregate income of an average agricultural household in Uttar-Pradesh.

In addition to the factors mentioned above, there has been an overall decline in income earning opportunities outside of agriculture in the economy during the neoliberal era. The vast masses of the cultivating poor who are normally heavily reliant on wage incomes have been left with little option but to fall back upon cultivation for drawing their livelihoods, even though this does not cover their consumption. The percentage of net receipts from cultivation to total income rose from 51.2 to 58 during 2003 to 2013, while net receipt from farming of animals also rose from 3.2 percent to 11 percent. An exactly similar trend prevails at the All-India level, with the share of wage and non-farm business incomes falling while that of income from cultivation and farming of animals rose during 2003 and 2013.

In U.P. specifically, unlike at the All-India level, this increased reliance on cultivation as a source of income has taken place against the background of an increase in concentration of both owned and operated area in the hands of the top 15 percent of the holdings between 2003 and 2013.⁷ (See Chapter 5, Tables 5.1 and 5.4) Moreover, as per the latest survey of the NSSO on socio-economic conditions of farmers, U.P. accounts for the highest share in India's total value of crop production as also the highest percentage share of agricultural households reporting crop production.⁸

Given the crucial role played by the state not only in terms of its contribution to overall food security but also in terms of providing livelihood to an overwhelming majority of our population, the question of agricultural profitability becomes one of vital significance and hence, needs to be addressed. In many states it has been observed that small scale tenancy is on the rise as farmers unable to generate profits through direct cultivation with hired labour, prefer to lease out to the erstwhile wage-dependent household on crop share rent on onerous terms. This shifts much of the riskiness of farming on to the tenant. Whether there is an increase in small tenancy in U.P. too needs further investigation.

In our sample of 176 holdings drawn from the advanced district of Muzaffarnagar where the poor farmer's dependence on wage income is relatively higher at 44 percent of the total compared to an average cultivating household of the state (Table 11.7c), the adverse impact of neoliberal macroeconomic policies resulting in reduced employment opportunities in farm and non-farm sectors of the economy is bound to hit the small-scale petty producer even harder. Not only would the gap in incomes between the peasant classes widen as a result of such reforms, the overall profitability of agricultural sector vis-a-vis alternative avenues of investment would also require a careful examination.

⁷ NSSO Report No. 571. Household Ownership and Operational Holdings in India. NSS 70th Round. January-December, 2013. Results derived on the basis of data given in tables 4 and 13 in 'Detailed Tables' of Appendix A.

⁸ NSSO Report No. 573. Some Aspects of Farming in India. 70th Round. January-December, 2013. See Statement 3.4 on p.18. The percentage share of U.P. in India's total value of crop production during July-Dec., 2012 and Jan.-June, 2013 is reported to be 14.2 percent and 22.3 percent respectively. Its percentage share of cultivating agricultural households to total is also the highest at 19.3 percent and 25.2 percent during July-Dec., 2012 and Jan.-June, 2013 respectively.

Concluding Remarks

The purpose of this thesis was to analyze agricultural growth and cultivators' incomes in India with a focus on Uttar Pradesh. Our investigations have indicated that agricultural growth depends upon both the intervention of the State, and on the mode of extraction and utilization of economic surplus in agricultural production. It has sought to examine these issues looking at the secondary literature and evidence, and by carrying out a field study to collect primary data, which are analyzed from the perspective of a rural society divided into classes, following a broadly Marxist method. We see that for capital investments to flow into agricultural production, the state must play a significant role in raising the profitability of agricultural production and in encouraging the formation of a class of dynamic capitalist farmers who are both able and willing to invest in farm production. The extent to which such productivity-raising investments improve the overall incomes and living standards of the rural masses is however determined crucially by distribution, dependent on the social base for investment in rural areas.

Our study has shown that when capital investments have indeed flowed into agricultural production, as during the Nehruvian *dirigiste* regime during the four decades after independence, the sector saw relatively high growth rates of agricultural output and an improvement in per capita foodgrains output and availability, while poverty did not worsen. By contrast, the periods which have been marked by the lack of capital investment in agriculture, are precisely those when agricultural growth is observed to reduce, mass demand has often reduced even faster and the bulk of the population drawing its living from the soil have been afflicted with increased hunger and poverty while at the same time large grain exports take place.

This was certainly true throughout the colonial period when the mode of surplus extraction and utilization, although changing under the land settlements, became feudal rent extraction in temporarily settled zamindari areas like U.P., driven by the state's tax exactions from land. High rates of rent acted as a barrier to productivity raising investments in agricultural production. A long-term structural stagnation of the colonial Indian economy took place under the massive burden of unilateral transfers (the 'drain of wealth') to Britain for two long centuries, exceeding 33 percent of India's budgetary revenues, even when primary product prices were

falling and the world was reeling under the deflationary impact of the Great Depression. The income deflating and domestic demand depressing effect of politically imposed tribute led to a severe fall in the per capita absorption of food grains in the inter-War period. Additionally, the enormous cost of the Allies' war spending in South Asia was charged to India's revenues and was raised by reducing Indian mass consumption levels to extract forced savings through rapid 'profit inflation' - a process which was so severe in Bengal that 3 million people, pushed down into starvation, died.

India's history shows how disastrous was the impact on broad masses of cultivators and workers, of colonial policies of surplus extraction and transfer to the metropolis. The more recent period of neoliberal economic reforms since the early nineties with its emphasis on "fiscal contraction" and "free trade" is a grim reminder of our colonial past. There are some striking similarities between the overall macroeconomic environment sought to be created in Indian agriculture today, and that prevalent in the half century before decolonisation. Even though direct political control is absent and there is no 'drain' any more, by pressurizing all third world developing countries including India into pursuing macroeconomic deflationary policies, mass demand for basic food grains is curtailed to release land and resources for producing export crops. Thus a similar extension of politico-economic control over the lands of tropical countries is taking place today. The ongoing process of farm land grab by national and international corporates alike is a renewed attempt to alter the land use pattern of Indian agriculture for meeting the needs of metropolitan populations regardless of the impact on the food security of the local population.

We find that the quarter century of neoliberal economic reforms since 1991 has seen deepening, pervasive agrarian depression with a crisis situation in regions of export crops cultivation in particular. With sharp cutback in state development spending on agriculture, more trade-openness by removing protection and encouraging exports, we are once again faced with a situation where an increasing emphasis on primary crop production for export rather than for domestic consumption is taking place. Domestic food security has been once again undermined, as it had been in the half century before 1947. For the first time since 1950-51, the decade and a half following the mid-1990s has seen a consistent decline in both per capita food

grains output and in availability both in rural India as a whole and in Uttar Pradesh. The sharp deceleration in the rate of growth of food grains has brought it below the population growth rate even though the latter itself is falling slowly.

This very adverse macroeconomic scenario characterizing the modern neoliberal economy marked a definite break from the relatively favourable socio-economic environment of the Nehruvian *dirigiste* regime which prevailed during the four decades after independence. The generally expansionary fiscal policies pursued by the independent Indian state during the latter period were indeed qualitatively different from the income and demand deflating policies pursued either historically by the colonial regime or currently by the modern neoliberal Indian state. We saw that land reforms, although quite limited in terms of the extent of re-distribution of land, did impact the agrarian structure by giving a stimulus to direct capitalist production. This was reinforced by substantial state investment on irrigation and rural infrastructure which raised employment and helped the domestic market for food and necessities to grow fast. The profitability of producing for the domestic market rose after centuries of producing for the external market. The barrier of feudal rent to capitalist investments in agricultural production was finally overcome with the introduction of green revolution technology and landlord capitalism received a stimulus.

Foodgrains output rose over three and a half times between 1950-51 and 1990-91, at an annual growth rate of 3.2 percent, some thirty times higher than the 0.11 percent annual growth during the five decades before Independence. Demand management by the state in the form of large scale public investments in irrigation and other rural infrastructure, input and credit subsidies, and price support measures created a favourable macroeconomic climate for private investment in agricultural production. But it also resulted in the concentration of economic surplus in the hands of a minority of landlords-turned capitalist and rich farmers in agriculturally advanced areas.

Our analysis of secondary data shows that the peasantry, far from being an undifferentiated homogeneous mass producing mainly for subsistence, is in reality highly differentiated into distinct socio-economic groups. Land ownership and operation remains heavily concentrated in the hands of the top 15 percent of the

households both in India and Uttar Pradesh. Extreme inequality exists between the cultivators as a result of a highly skewed distribution of land and non-land farm assets. However, the nature of this inequality in the *dirigiste* regime was very different from that in the quarter century of neoliberal economic reforms since 1991. In the first period, as per head cereals output rose, inequalities increased even when *everyone* was consuming more, since the rise was greater for the already well-to-do, compared to the constancy or even rise for the poor. In short, absolute poverty in rural areas did not rise or even declined, even when inequality was growing. This was what was happening in the 1980s as green revolution fructified. But inequalities can also increase in a different and much worse way when the consumption of the poor actually declines while that of others rises. That has been happening since the mid-1990s. Since the average per capita food grains output itself has been falling, given unequal distribution such increase in absolute poverty is to be expected. The decade after 2003 has seen the share of the topmost 5 percent in land ownership rising at the expense of the 10 percent immediately below it as well as land transfers from poorer groups.

The decline in per capita nutritional intake and increase in absolute poverty in rural India during the economic reforms period has taken place against the background of an increasing lack of viability for the majority of cultivators on the one hand and declining income earning opportunities in both farm and non-farm employment on the other. The results from the primary data collected by us on the socio-economic conditions of farmers across six villages of Muzaffarnagar district for the year 2005-06 reinforce our earlier analysis pointing towards the dismal macroeconomic scenario outlined above. Using a Marxist class-theoretic approach to group farm data according to an index of economic class, we have also analysed the same data by the standard method of grouping by farm size. While the two methods were found to be highly associated applying the *chi-square* test of association, the results were not identical for the alternative methods of grouping data.

Our sample households show extreme inequality in the distribution of assets and income. A strong positive relation is found between the economic class of a cultivating household and its access to both owned and operated area. The pattern of leasing-in/out of land serves to reinforce the existing inequality since the bulk of area

leased in is on account of the relatively large owners. The distribution of farm assets, such as livestock, tractor, thresher, tube wells, and so on was heavily concentrated in the hands of the class of landlord-capitalists and rich peasants.

The concentration of landed property in the hands of a rich minority and the consequent shortage of land relative to consumption needs with the vast majority of the rural poor compels the latter to hire out labour on wages to meet their subsistence requirements, thereby giving rise to exploitative relationships within the cultivating classes. The minority of landlord- turning capitalists and rich peasants at the top of the rural class hierarchy appropriate surplus labour days via net hiring-in of labour and as rent. The mass of the lower middle and poor peasants are exploited in the process of earning wage income in both farm and non-farm work mainly by being net hirers-out of their labour to a high extent and partly, through their higher burden of rent and interest payments.

The landlord-capitalists and rich farmers account for bulk of both total and hired-in labour used in production. The net hired-in labour days increase with both economic class and farm-size. The structure of labour use by the dominant economic class of landlord-capitalists and rich peasants reflects the fact that direct cultivation as a source of accumulating surplus was the preferred option over rent received via leasing-out land.

Interestingly, output *per acre* from crops is found to be highest on the rich holdings and diminishes with worsening class position. Given the relatively higher intensity of input application per acre on the holdings of the rich compared to the middle and the poor, this outcome of higher yield is expected. But our result clearly goes against the influential argument put forward by A.K.Sen (1966) on the basis of the Indian Farm Management Studies data that the large farms being the labour-hiring ones are less efficient than small family labour based farms. Directly separating out the labour-hiring farms as we do shows that this proposition does not hold. However, our data do not show an inverse relation between farm size and yield as the Farm Management Studies data did. We find that there is no systematic relation, either direct or inverse, between size of farm and crop output per acre.

Since it is the rich class that owns most of the means of production and also enjoys higher land and labour productivity compared to the middle and poor classes, it

is precisely the class which is in a good position to accumulate further wealth through its ability to generate most of the agricultural output and economic surplus. At the other pole, it is the semi-landless and landless class of the rural poor, divorced from any substantial ownership of the means of production, which suffers extreme poverty and deprivation.

Our estimates of incomes show that acute income inequality exists between the three classes. We find that Farm Disposable Surplus per month for landlord-turning capitalists and rich peasants, most of whom also have the largest sized holdings, is very high leaving them in a comfortable position, and their families are able to both enjoy higher consumption levels as well as retain substantial investible surplus. At the other pole, there is negative farm disposable surplus of poor peasants implying they would not be able to meet even a fraction of their subsistence needs if they had to rely on their meagre income from production alone, and it is clear why they are driven to seek additional wage-paid work. The disposable income for the poor class is very low owing to the high burden of rent and interest payments on them. Interest on loans turns out to be even larger in magnitude than rent payments and imposes an enormous strain on the socio-economic well-being of the bulk of the toiling poor. The income from production per month per capita for them is below even the understated official monthly poverty level of Rs.356.8 for Uttar Pradesh.

While the poor class registers very large deficits forcing them to labour for others, even the middle group of farmers generate hardly enough monthly per capita surplus over the bare-minimum consumption needs of the family. With income from all other sources taken into account, the situation of the poor class does improve but it still continues to register a deficit of consumption while the surplus of the middle class improves only marginally.

This means that the social base for investment in rural areas still remains really narrow and possibly is getting narrower over time. It is only the class of landlords- turning capitalists and rich peasants taken together which registers sufficiently large surpluses to undertake investment. The vast majority of the rural poor and even the lower middle classes are forced to resort to borrowing to meet their poverty level consumption spending. While we did collect some data directly on

consumption, this was not reliable enough to be used; another lacuna is information on the health and educational status of the family members in our sample.

The adverse impact of neoliberal macroeconomic policies resulting in reduced employment opportunities in farm and non-farm sectors of the economy is bound to hit the small-scale petty producer even harder. Not only would the gap in incomes between the peasant classes widen as a result of such reforms, the trends in the overall profitability of agricultural sector vis-a-vis alternative avenues of investment would also require a careful examination.

Throughout the thesis, we have seen how the existence of a class of deprived and poor people is necessary for the increase of productivity and creation of wealth in a capitalist mode of production. This throws up many questions not only with regard to the living standards of the vast majority of the rural poor but compels us to look beyond the set of crisis-inducing income and demand deflationary macroeconomic policies currently being pursued by the Indian state.

Bibliography

- Akram-Lodhi, Haroon, 1993. 'Agrarian Classes in Pakistan: An Empirical Test of Patnaik's Labour-Exploitation Criterion', *The Journal of Peasant Studies*, Vol. 20, No. 4, pp. 557-589.
- Allen, G.C, 1946. *A Short Economic History of Modern Japan: 1867-1937*, London: The Macmillan Press Ltd.
- Ambekar, Vasant W. and R.K. Singh, 2014. 'Land Use Scenario in Uttar Pradesh' in Singh, Ajit Kumar and Santosh Mehrotra, (ed.), *Land Policies for Equity and Growth: Transforming The Agrarian Structure In Uttar Pradesh*, New Delhi: Sage Publications, pp. 257-278.
- Amin, Shahid, 1984. *Sugarcane and Sugar in Gorakhpur: An Enquiry into Peasant Production for Capitalist Enterprise in Colonial India*, Oxford University Press, India.
- Appu, P.S, 1996. *Land Reforms in India. A Survey of Policy, Legislation and Implementation*, Vikas Publishing House.
- Araquem da Silva, Ednaldo, 1984. 'Measuring the Incidence of Rural Capitalism: An Analysis of Survey Data from North-East Brazil', *The Journal of Peasant Studies*, Vol. 12, No. 1, October, pp. 65-75.
- Assadi, Muzaffar, 1998. 'Karnataka- Farmers' Suicides: Signs of Distress in Rural Economy', *Economic and Political Weekly*, Vol. 33, No.14, April 4, pp. 747-748.
- Athreya, V., G. Boklin, G. Djurfeldt and S. Lindberg, 1987. 'Identification of Agrarian Classes: A Methodological Essay with Empirical Material from South India', *The Journal of Peasant Studies*, Vol. 14, No.2, January, pp. 147-190.
- Bagchi, A.K., 1972. *Private Investment in India: 1900-1939*, Cambridge: Cambridge University Press.
- _____, 1976a. 'De-industrialization in Gangetic Bihar: 1809-1901' in B. De (ed.), *Essays in Honour of Professor S.C. Sarkar*. Delhi: People's Publishing House, pp. 499-522.
- _____, 1976b. 'De-industrialization in India in the Nineteenth Century: Some Theoretical Implications', *The Journal of Development Studies*, Volume 12, Issue 2, pp. 135- 164.
- Banerji, A.K., 1982. *Aspects of Indo-British Economic Relations*, Bombay: Oxford University Press.
- Baran, Paul A., 1957. *The Political Economy Of Growth*, New York: Monthly Review Press.

- Bernstein, Henry, 2009. 'V.I. Lenin and A.V. Chayanov: looking back, looking forward', *The Journal of Peasant Studies*. Vol. 36, No. 1, pp. 55-81.
- Bhaduri, Amit, 1973. 'A Study in Agricultural Backwardness under Semi-Feudalism', *The Economic Journal*, Vol.83. No. 329, March, pp. 120-137.
- _____, 1983. *The Economic Structure of Backward Agriculture*, Macmillan India Limited.
- _____, 1990. *Macroeconomics: The Dynamics of Commodity Production*, U.K.: Palgrave Macmillan.
- Bhaduri, Amit, and D. Nayyar, 1996. *The Intelligent Person's Guide To Liberalization*, India: Penguin Books.
- Bhalla, G.S. and G. Singh, 2009. 'Economic Liberalisation and Indian Agriculture: A Statewise Analysis', *Economic and Political Weekly*, Vol. 44, No. 52, December 26, 2009 – January 1, 2010, pp. 34-44.
- _____, 2012. *Economic Liberalisation and Indian Agriculture: A District-level Study*, Sage India.
- Bhardwaj, K, 1974. *Production Conditions in Indian Agriculture: A Study Based On Farm Management Surveys*, London: Cambridge University Press.
- _____, 1982. 'Regional Differentiation in India: A Note', *Economic and Political Weekly*, Vol.17, No. 14/16, Annual Number, April.
- Blyn, George, 1966. *Agricultural Trends in India: 1891-1947. Output, Availability and Productivity*, University of Pennsylvania Press.
- Boserup, Ester, 1965. *The Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure*, New York: Aldine Publishing Company.
- Brenner, Robert, 1976. 'Agrarian Class Structure and Economic Development, Pre-Industrial Europe', *Past and Present*, Vol. 70, No. 1, February, pp. 30-75.
- Byres, T.J., 1974. 'Land Reform, Industrialization and the Marketed Surplus in India: An Essay on the Power of Rural Bias', in Lehmann, David (ed.), *Agrarian Reform and Agrarian Reformism*, London: Faber & Faber.
- _____, 1979. 'Of Neo-Populist Pipe-Dreams: Daedalus in the Third World and the Myth of Urban Bias', *The Journal of Peasant Studies*, Vol. 6, No. 2, pp.210-244.
- _____, 1981. 'The New Technology, Class Formation and Class Action in the Indian Countryside', *The Journal of Peasant Studies*, Vol. 8, No. 4, pp. 407-484.

- _____, 1985. 'India: Capitalist Industrialization or Structural Stasis?' in Bienfeld, Manfred and Martin Godfrey (ed.), *The Struggle for development: National Strategies in an International Context*, John Wiley & Sons Ltd, pp. 135-164.
- _____, 1988. 'Charan Singh, 1902-87: An Assessment', *The Journal of Peasant Studies*, Volume 15, No. 2, pp. 139- 189.
- _____, 1991. 'The Agrarian Question and Differing Forms of Capitalist Agrarian Transition: An Essay with Reference to Asia' in Breman, Jan and Sudipto Mundle (ed.) *Rural Transformation in Asia*, Delhi: Oxford University Press, pp. 3-76.
- _____, 1996. *Capitalism from Above and Capitalism from Below: An Essay in Comparative Political Economy*. Palgrave Macmillan.
- _____, 2003. 'Structural Change, the Agrarian Question and the possible Impact of Globalization' in Chandrasekhar, C.P. and J. Ghosh (ed.), *Work and Well-being in the Age of Finance*, Delhi: Tulika, pp.171-211.
- _____, 2004a. 'Introduction: Contextualizing and Interrogating the GKI Case for Redistributive Land Reform', *Journal of Agrarian Change*, Vol. 4, Nos. 1 and 2, January and April, pp. 1-16.
- _____, 2004b. 'Neo-Classical Neo-Populism 25 Years On: Déjà vu and Deja Passe. Towards a Critique', *Journal of Agrarian Change*, Vol. 4, Nos. 1 and 2, January and April, pp. 17-44.
- _____, 2006. 'Differentiation of the Peasantry Under Feudalism and the Transition to Capitalism: In Defence of Rodney Hilton', *Journal of Agrarian Change*, Vol. 6, No. 1, pp. 17-68.
- Byres, T.J., (ed.), 1983. *Sharecropping and Sharecroppers*, London: Frank Cass.
- Census of India, 2001. Primary Census Abstract, Uttar-Pradesh.
- _____, 2001. Area Profile, Primary Census Abstract, Uttar Pradesh.
- _____, 2011. Primary Census Abstract, Data Highlights, Uttar Pradesh.
- _____, 2011. Primary Census Abstract, Data Highlights, All-India.
- Chakravarty, Sukhamoy, 1993. *Development Planning: The Indian Experience*, Delhi: Oxford University Press.
- Chandrasekhar, C.P. and P. Patnaik, 1995. 'Indian Economy Under Structural Adjustment', *Economic and Political Weekly*, Vol. 30, No.47, November 25, pp. 3001-3013.
- Chandrasekhar, C.P. and J. Ghosh, 2007. 'Recent employment trends in India and China: An unfortunate convergence?', April 5th, www.macrosan.net/pdfs/india_china.pdf.

- Chang, Ha-Joon, 2002. *Kicking Away the Ladder: Development Strategy in Historical Perspective*, London: Anthem Press.
- Chattopadhyay, M. and A. Sengupta, 1997. 'Farm Size and Productivity- A New Look at the Old Debate', *Economic and Political Weekly*, Review of Agriculture, Vol. 32, No. 52, Dec. 27 – Jan.2, pp. A-172 – A-175.
- Chaudhuri, K.N., 1983. 'Foreign Trade and Balance of Payments', in Dharma Kumar and Meghnad Desai (ed.), *Cambridge Economic History of India (CEHI), Volume II*, Cambridge University Press.
- Chayanov, A.V., 1966. *The Theory of Peasant Economy*, edited by D. Thorner, B. Kerblay, R.E.F. Smith with a Foreword by Teodor Shanin, (First Indian edition, 1987) Delhi; Oxford University Press.
- Chowdhury, B.B., 1964. *Growth of Commercial Agriculture in Bengal: 1757-1900*, Columbia University Press.
- _____, 1973. 'Peasant Movements in Bengal: 1850-1900', *Nineteenth Century Studies*, Vol. 3, July, pp. 341-397.
- Clift, Charles, 1977. 'Progress of Irrigation in Uttar Pradesh: East-West Differences', *Economic and Political Weekly*, Vol. 12, No. 39, Sep.24, pp. A83 - A-90.
- Cornia, Giovanni Andrea, *et al.*, (ed.), 1987. *Adjustment with a Human Face*. Vol.1, U.K.: Oxford University Press.
- Cox, Terry, 1979. 'Awkward Class or Awkward Classes? Class Relations in the Russian Peasantry before Collectivization', *The Journal of Peasant Studies*. Vol. 7, No. 1, pp. 70-85.
- _____, 1984. 'Class Analysis of the Russian Peasantry: The Research of Kritsman and his School', *The Journal of Peasant Studies*, Vol. 11, No. 2, Jan., Special Issue: 'Kritsman and the Agrarian Marxists' edited by Terry Cox and Gary Littlejohn., pp. 11-60.
- Deaton, A and J. Dreze, 2009. 'Food and Nutrition in India: Facts and Interpretations', *Economic and Political Weekly*, Vol. 44, No.7, Feb., 14-20, pp. 42-65.
- DeGregori, Thomas R., 2004. 'Green Revolution Myth and Agricultural Reality?', *Journal of Economic Issues*, Vol. 38, 2, June, pp. 503-508.
- District Gazeteer of Muzaffarnagar, NIC, Muzaffarnagar, Government of Uttar Pradesh.
- Dobb, Maurice, 1938. *Wages*, London: Nisbet and Company Ltd.
- _____, 1946. *Studies in the Development of Capitalism*, Routledge & Kegan Paul. Revised Edition, 1963 (Paperback).

- _____, 1948. *Soviet Economic Development Since 1917*, Routledge & Kegan Paul.
- _____, 1951. *Some Aspects of Economic Development: Three Lectures*, Delhi School of Economics, Occasional Papers, Delhi: Ranjit Printers.
- Dutt, R.C., 1906. *The Economic History of India. Vol.1*, London: Kegan Paul, Trench, Triibner.
- Dyer, Graham, 1997. *Class, State And Agricultural Productivity In Egypt. Study of the Inverse Relationship between Farm Size and Land Productivity*. London: Frank Cass.
- _____, 1998. 'Farm Size and Productivity- A New Look at the Old Debate Revisited', *Economic and Political Weekly*, Vol. 33, No. 26, June 27–July 3, pp. A-113 to A-116.
- _____, 2004. 'Redistributive Land Reform: No April Rose. The Poverty of Berry and Cline and GKI on the Inverse Relationship', *Journal of Agrarian Change*, Vol. 4, Nos. 1 and 2, January and April, pp. 45-72.
- Economic Survey, Ministry of Finance, Government of India, Various Issues.
- Edelman, Marc, 2005. 'Bringing the Moral Economy Back in... to the Study of 21st Century Transnational Movements', *American Anthropologist*, Vol. 107, No. 3, Sep., pp. 331-345.
- Feder, Ernest, 1976. 'McNamara's Little Green Revolution: World Bank Scheme for Self-Liquidation of Third World Peasantry', *Economic and Political Weekly*, Vol. 11, No. 14, April 3, pp. 532-541.
- Frank, A. G., 1973. 'Reflections on Green, Red and White Revolutions in India', *Economic and Political Weekly*, Vol. 8, No. 3, Jan. 20, pp. 119+121+123-124.
- Frankel, Francine R., 1969. 'India's New Strategy of Agricultural Development: Political Costs of Agrarian Modernization', *The Journal of Asian Studies*, Vol. 28, No. 4, pp. 693-710.
- Friedmann, Harriet, 1990. 'The Origins of Third World Food Dependence' in Bernstein, Henry et al. (ed.), *The Food Question: Profits Versus People?* London: Earthscan Publications Ltd.
- Ganguli, B.N., 1965. *Dadabhai Naoroji and the Drain Theory*, Delhi: Asia Publishing House.
- Ghosh, Jayati, 1988. 'Intersectoral Terms of Trade, Agricultural Growth and the Pattern of Demand', *Social Scientist*, Vol.16, No.4. April, pp. 9-27.
- Gill, Sucha Singh and Ranjit Singh Ghuman, 2001. 'Changing Agrarian Relations In India: Some Reflections From Recent Data', *The Indian Journal of Labour Economics*, Vol. 44, No. 4, pp. 809-826.

- Griffin, Keith, 1974. *The Political Economy Of Agrarian Change. An Essay On The Green Revolution*, The Macmillan Press Ltd.
- Griffin, Keith, A.R. Khan and A. Ickowitz, 2002. 'Poverty and Distribution of Land', *Journal of Agrarian Change*, Vol. 2, No. 3. pp. 279-330.
- Guha, Ranajit, 1963. *A Rule of Property for Bengal: An Essay on the Idea of Permanent Settlement*, Duke University Press.
- Gulati, Ashok and Anil Sharma, 1995. 'Subsidy Syndrome in Indian Agriculture', *Economic and Political Weekly*, Vol.30, No. 39, Sep. 30, pp. A93-A102.
- Gulati, Ashok and Seema Bathla, 2001. 'Capital formation in Indian Agriculture: Revisiting the Debate', *Economic and Political Weekly*, Vol.36, No.20, Special Article, May 19-25, pp. 1697-1708.
- Government of Uttar Pradesh. *Budget Papers*, Various Years.
- Habib, I. 1995. 'Colonialization of the Indian Economy: 1757-1900' in Habib, I. *Essays in Indian History. Towards a Marxist Perception*, Delhi: Tulika. pp. 296-335.
- _____, 2006. *Indian Economy: A People's History of India; 1858-1914*. Delhi: Tulika.
- Harrison, Mark, 1975. 'Chayanov and the Economics of the Russian Peasantry', *The Journal of Peasant Studies*, Vol. 2, No. 4, pp. 389-417.
- _____, 1977a. 'Resource Allocation and Agrarian Class Formation: The Problem of Social Mobility among Russian Peasant Households, 1880- 1930', *The Journal of Peasant Studies*, Vol. 4, No. 2, pp. 127-161.
- _____, 1977b. 'The Peasant Mode of Production in the Work of A.V. Chayanov', *The Journal of Peasant Studies*, Vol. 4, No. 4, pp. 323-336.
- Harry M. Cleaver, Jr., 1972. 'The Contradictions of the Green Revolution' *The American Economic Review*, Volume 62, No. 1 / 2, March 1, pp. 177-186.
- Harvey, David, 2003. *The New Imperialism*, Oxford University Press.
- _____, 2005. *A Brief History of Neoliberalism*, Oxford University Press.
- Hilton, Rodney (ed.), 1976. *The Transition from Feudalism to Capitalism*, Verso.
- Hinton, William, 1966. *Fanshen: A Documentary of Revolution in a Chinese Village*, Monthly Review Press, 2008 (Paperback).
- Hobsbawm, E.J., 1999. *Industry and Empire*, London: Penguin Books, Revised edition.

- Jha, Praveen and Nilachala Acharya, 2011. 'Expenditure on the Rural Economy in India's Budgets since the 1950s: An Assessment', *Review of Agrarian Studies*, Vol.1, No. 2, July-December, pp. 134-156.
- Joshi, P.C., 1974. 'Land Reform and Agrarian Change in India and Pakistan since 1947: I & II', *The Journal of Peasant Studies*, Vol. 1, Nos. 2 and 3, pp. 164-185 and 326-362.
- Joseph, M, 2004. 'Performance of the Northern States: A Comparative Analysis', *Economic and Political Weekly*, Vol. 39, No. 6, Feb. 7-13, pp. 564-579.
- Kahlon, A.S. and D.S. Tyagi, 1983. *Agricultural Price Policy in India*, Allied Publishers.
- Kalecki, M, 1972. 'Problems of Financing Economic Development in a Mixed Economy' in Kalecki, M., *Selected Essays on the Economic Growth of the Socialist and the Mixed Economy*, Great Britain: Cambridge University Press.
- Kerblay, Basile, 1966. 'A.V. Chayanov: Life, Career, Works' in Thorner, Daniel, Kerblay, Basile and Smith, R.E.F. (ed.), *A.V. Chayanov on The Theory of Peasant Economy*, Delhi: Oxford University Press, pp. xxv-lxxv. (First Indian Edition, 1987).
- Khusro, A.M., 1958. *Economic and Social Effects of Jagirdari Abolition and Land Reforms in Hyderabad*, Department of Publication & University Press, Osmania University Printers.
- _____, 1964. 'Returns to Scale in Indian Agriculture', *The Indian Journal of Agricultural Economics*, Vol. XIX, Nos. 3 and 4, July-Dec., pp. 51-80.
- Kritsman, L.N., 1984. 'Class Stratification of the Soviet Countryside (edited and translated by Gary Littlejohn)', *The Journal of Peasant Studies*, Vol. 11, No. 2, Jan., Special Issue: 'Kritsman and the Agrarian Marxists' edited by Terry Cox and Gary Littlejohn, pp. 85-143.
- Krugman, Paul R. and Maurice Obstfeld, 2003. *International Economics: Theory and Policy*. 6th edition. Pearson.
- Kumar, Dharma, 1965. *Land and Caste in South India*, Cambridge University Press.
- Kumar, Ravindra, 1968. *Western India in the Nineteenth Century: A Study in the Social History of Maharashtra*, Toronto: University of Toronto Press.
- Kuznets, Simon, 1967. 'Quantitative Aspects of the Economic Growth of Nations: Level and Structure of Foreign Trade: Long-Term Trends', *Economic Development and Cultural Change*, Vol. 15, No. 2, Part 2, January, pp.1-140.
- Ladejinsky, Wolf, 1973. 'How Green is the Indian Green Revolution?', *Economic and Political Weekly*, Vol. 8, No. 52, Dec. 29.

- Land Reforms in India: An Empirical Study, 1989. Ministry of Rural Development, GOI, Report of the First Year. Vol. 1. Land Reforms Unit, Mussoorie.
- Lange, Oscar, 1963. *Political Economy. Volume I. General Problems*, Translated from Polish by A.H. Walker, New York: The Macmillan Company.
- Lenin, V.I., 1920. 'Preliminary Draft Thesis On The Agrarian Question', *Selected Works*, Moscow: Progress Publishers, pp. 586-595.
- _____, 1899. *The Development of Capitalism in Russia*, Vol. 3, *Collected Works* (Fourth Printing, 1977), Moscow: Progress Publishers.
- Lipton, Michael, 1977. *Why Poor People Stay Poor. A Study of urban bias in world development*, New-Delhi: Heritage Publishers. (First published in India, 1980)
- Mao Tse-Tung, 1933. 'How to Differentiate Classes in Rural Areas', *Selected Works*. Vol. 3, Part 4, Accessed at <https://www.marxists.org>.
- Marx, Karl, 1954. *Capital: A Critique of Political Economy*, Vol. 1, Moscow: Progress Publishers.
- Marx, Karl and Frederick Engels, 1977. 'Preface to A Contribution To The Critique Of Political Economy', *Selected Works*, Vol. 1, Moscow: Progress Publishers.
- Mathew, Joseph, 2004. 'Performance of the Northern States: A Comparative Analysis', *Economic and Political Weekly*, Vol. 39, No. 6, Feb.7-13, pp. 564-579.
- Mehta, Jaya and Shanta Venkatraman, 2000. 'Poverty Statistics: Bermicide's Feast', *Economic and Political Weekly*, Vol. 35, No. 27, July (1-7), pp. 2377-2379 + 2381-2382.
- Mehta, Jaya, 2004. Changing Agrarian Structure in the Indian Economy, *Revolutionary Democracy*, Vol. X, No. 1, April.
- Misra, Sangita and Anoop K. Suresh, 2014. 'Estimating Employment Elasticity of Growth for the Indian Economy', *RBI Working Paper Series (DEPR)*: 06/2014.
- Mishra, Satish Chandra, 1982. 'Commercialisation, Peasant Differentiation and Merchant Capital in Late Nineteenth-Century Bombay and Punjab', *The Journal of Peasant Studies*, Vol. 10, No. 1, pp. 3-51.
- Mishra, Srijit, 2009. 'Agrarian Distress and Farmers' Suicides in Maharashtra' in Reddy, D. Narasimha and Mishra, Srijit (ed.), *Agrarian Crisis in India*, Delhi: Oxford University Press. pp. 126-163.
- Mitra, Ashok, 1977. *Terms of Trade and Class Relations*, London: Frank Cass.

- Mukherjee, N., 1962. *The Raiyatwari System in Madras, 1792-1827*, Calcutta: Firma K.L. Mukhopadhyay.
- Nadkarni, M.V., 1988. 'Crisis of Increasing Costs in Agriculture: Is There a Way Out?', *Economic and Political Weekly*, Vol. 23, No. 39, Sep. 24, pp. A-114-A119.
- Nanda, Meera, 1995. 'Transnationalisation of the Third World State and Undoing of Green Revolution', *Economic and Political Weekly*, Vol. 30, No. 4, pp. PE20-PE30.
- National Commission on Agriculture, 1975. Report of the National Commission on Agriculture. Section XV on Agrarian Reforms.
- NSSO, Report No. 66, *Report on Landholdings*, 8th Round, 1953-54.
- _____, Report No. 215, *Some Aspects of Landholdings*; 26th Round, 1971-72.
- _____, Report No. 330, *Some Aspects of Households Ownership Holdings*, 37th Round, 1982.
- _____, Report No. 331, *Some Aspects of Operational Holdings*, 37th Round, 1982.
- _____, Report No. 399, *Some Aspects of Household Ownership Holdings*, 48th Round, 1992.
- _____, Report No. 407, *Operational Land Holdings in India: Salient Features*, 48th Round, 1991-92.
- _____, Report No. 491, 2003, *Household Ownership Holdings in India*, 59th Round.
- _____, Report No. 492, *Some Aspects of Operational Landholdings in India, 2002-03*, 59th Round.
- _____, Report No. 493, *Livestock Ownership Across Operational Land Holding Classes in India, 2002-03*, 59th Round.
- _____, Report No. 497, *Situation Assessment Survey of Farmers: Income, Expenditure and Productive Assets of Farmer Households*, 59th Round, (January-December) 2003.
- _____, Report No. 569, *Some Characteristics of Agricultural Households in India*, 70th Round, 2013.
- _____, Report No. 571, *Household Ownership and Operational Holdings in India*, 70th Round, (January-December) 2013.
- _____, Report No. 573, *Some Aspects of Farming in India*, 70th Round, (January-December) 2013.

- _____, Report No. KI (70/33), *Key Indicators of Situation of Agricultural Households in India*, 70th Round, (January-December) 2013.
- _____, Special Report No.1, *Key Results of Employment and Unemployment Survey: All-India (Part-I)*, 43rd Round, 1987-88.
- _____, Report No. 406, *Key Results on Employment and Unemployment*, 50th Round, July 1993-June 1994.
- _____, Report No. 455, *Employment and Unemployment in India*, 55th Round, July 1999- June 2000.
- _____, Report No. 515, *Employment and Unemployment Situation in India (Part-I), 2004-05*, 61st Round, July 2004-June 2005.
- _____, Report No. KI (66/10), *Key Indicators of Employment and Unemployment in India (Part-I), 2009-10*, 66st Round, July 2009-June 2010.
- _____, Report No. 269, *Tables With Notes On Consumer Expenditure*, 25th Round, July 1970-June 1971.
- _____, Report No. 297, *Per Capita Per Diem Intake Of Nutrients*, 27th Round, October 1972-September 1973.
- _____, Report No. 329, *Per Capita Per Diem Intake Of Nutrients*, 32nd Round, July 1977-June 1978.
- _____, Report No. 353, *Level of Nutritional Intake of Population Distributed Over Different Expenditure Classes*, 38th Round, January-December, 1983.
- _____, Report No. 402, *Level and Pattern of Consumer Expenditure*, 50th Round, July 1993-June 1994.
- _____, Report No. 454, *Household Consumer Expenditure in India*, 55th Round, July 1999-June 2000: Key Results.
- _____, Report No. 471, *Nutritional Intake in India*, 55th Round, July 1999-June 2000.
- _____, Report No. 508, *Level and Pattern of Consumer Expenditure*, 61th Round, July 2004-June 2005.
- _____, Report No. 513, *Nutritional Intake in India 2004-05*, 61st Round, July 2004-June 2005.
- _____, Report No. 538, *Level and Pattern of Consumer Expenditure*, 66th Round, July 2009-June 2010.
- _____, Report No. 540, *Nutritional Intake in India*, 66th Round, July 2009 -June 2010.

- Nayyar, Rohini, 1991. *Rural Poverty in India: An Analysis of Inter-State Differences*, Oxford University Press.
- Nayyar, Deepak and Abhijit Sen, 1994. 'International Trade and the Agricultural Sector in India', *Economic and Political Weekly*, Vol. 29, No. 20, May 14, pp. 1187-1203, Reprinted in Bhalla, G.S. (ed.), 1994, *Economic Liberalization and Indian Agriculture*, ISID, New-Delhi, April.
- NCAER, 1977. *Resource Use, Productivity and Land Reforms in Uttar-Pradesh*, New Delhi: National Council of Applied Economic Research, February.
- Padhi, Ranjana, 2012. *Those Who Did Not Die: Impact of The Agrarian Crisis on Women In Punjab*, New Delhi: Sage.
- Pandit, Y.S., 1937. *India's Balance of Indebtedness 1898-1913*, London: Allen and Unwin.
- Papola, T.S. 'Employment Trends in India', Institute for Studies in Industrial Development (ISID), New-Delhi.
- Papola, T.S. and P.P. Sahu, 2012. 'Growth and Structure of Employment in India. Long-Term and Post-Reform Performance and the Emerging Challenge', ICSSR, March.
- Patel, S.J., 1952. *Agricultural Labourers in Modern India and Pakistan*, Bombay: Current Book House.
- Pathy, Jagannath, 1986. 'The United States Intervention in Third World Rural Policies', *Social Scientist*, Vol. 14, No. 4, April, pp. 33-49.
- Pathy, Suguna, 2003. 'Destitution, Deprivation and Tribal Development', *Economic and Political Weekly*, Vol. 38, No. 27, July 5-11, pp. 2832-2836.
- Patnaik, Prabhat, 1998. 'Some Indian Debates on Planning' in Byres, T.J. (ed.), *The Indian Economy: Major Debates Since Independence*, Delhi: Oxford University Press, pp. 159-191.
- _____, 1999. 'The Performance of the Indian Economy in the 1990s', *Social Scientist*, Vol. 27, Nos. 5-6, May- June, pp. 3-16.
- Patnaik, Utsa, 1972a. 'Economics of Farm Size and Farm Scale – Some Assumptions Re-examined', *Economic and Political Weekly*, Vol.7, No. 31-33, Special Number, Aug.
- _____, 1972b. 'Development of Capitalism in Agriculture- I & II', *Social Scientist*, Vol. 1, Nos. 2 & 3, Sep. & Oct., pp. 15-31 & 3-19.
- _____, 1976. 'Class Differentiation within the Peasantry: An Approach of Indian Agriculture', *Economic and Political Weekly*, Vol. 11, No. 39, Sep. 25. pp. A-82 – A-85+A-87 – A-101.

- _____, 1979. 'Neo-Populism and Marxsim: The Chayanovian View of the Agrarian Question and its Fundamental Fallacy', *The Journal of Peasant Studies*, Vol. 6, No. 4, July, Reprinted in U. Patnaik, 1999, *The Long Transition: Essays on Political Economy, Economy*, Delhi: Tulika, pp. 1-62.
- _____, 1983. 'Classical Theory of Rent and its Application to India: Some Preliminary Propositions, with Some Thoughts on Sharecropping', *The Journal of Peasant Studies*, Vol. 10, Nos. 2-3, Jan.-April, Reprinted in U. Patnaik, 1999, *The Long Transition: Essays on Political Economy, Economy*, Delhi: Tulika, pp. 109-130.
- _____, 1984. 'Tribute Transfer and the Balance of Payments in The Cambridge Economic History of India, Volume II', *Social Scientist*, Vol. 12, No.12, Reprinted in U. Patnaik, 1999, *The Long Transition: Essays on Political Economy*, Delhi: Tulika, pp.305-322.
- _____, 1985. 'On the Evolution of the Class of Agricultural Labourers in India' in U. Patnaik and M. Dingwaney (ed.), *Chains of Servitude: Bondage and Slavery in India*, Reprinted in U. Patnaik, 1999, *The Long Transition: Essays on Political Economy*, Delhi: Tulika, pp. 181-207.
- _____, 1986. *The Agrarian Question and the Development of Capitalism in India*, Delhi: Oxford University Press.
- _____, 1987. *Peasant Class Differentiation: A Study in Method with Reference to Haryana*, Delhi: Oxford University Press.
- _____, 1988a. 'Some Aspects of Development in the Agrarian Sector in Independent India', *Social Scientist*, Vol. 16, No. 2, pp.17-40.
- _____, 1988b. 'Ascertaining the Economic Characteristics of Peasant Classes-in-Themselves in Rural India: A Methodological and Empirical Exercise', *The Journal of Peasant Studies*, Vol. 15, No.3, April, Reprinted in U. Patnaik, 1999, *The Long Transition: Essays on Political Economy*, Delhi: Tulika, pp.208-251.
- _____, 1990. 'Some Economic and Political Consequences of the Green Revolution in India' in Henry Bernstein, *et al.*, (ed.), *The Food Question: Profits Versus People?*, London: Earthscan Publications Ltd, pp. 80-90.
- _____, 1991a. 'Food Availability and Famine: A Longer View', *The Journal of Peasant Studies*, Vol. 19, No. 1, Oct., Reprinted in U. Patnaik, 1999, *The Long Transition: Essays on Political Economy*, Delhi: Tulika Press, pp. 323-350.
- _____, 1991b. 'Capitalist Development in Agriculture: Note' in U. Patnaik (ed.) *'Agrarian Relations and Accumulation – The 'Mode of Production' Debate in India'*. September 25, 1971.

- _____, 1994. 'Tenancy and Accumulation', Kaushik Basu (ed.) *Agrarian Questions*, Delhi: Oxford University Press, pp. 155-201.
- _____, 1996. 'Export oriented Agriculture and Food Security in Developing Countries and in India', *Economic and Political Weekly*, Vol. 31, Nos. 35-37, Special Number, Reprinted in U. Patnaik, 1999, *The Long Transition – Essays on Political Economy*, Delhi: Tulika, pp.351-416.
- _____, 1997a. 'India's Agricultural Development in the Light of Historical Experience' in T.J. Byres (ed.) *The State, Development Planning and Liberalisation in India*, Delhi: Oxford University Press, pp.172-197.
- _____, 1997b. 'Political Economy of State Intervention in Food Economy', *Economic and Political Weekly*, Vol. 32, No. 20/21, May 17-30, pp. 1105-1112.
- _____, 1998. 'Alternative Strategies of Agrarian Change in Relation to Resources for Development in India and China' in Deepak Nayyar (ed.), *Economics as Ideology and Experience: Essays in Honour of Ashok Mitra*, Frank Cass. pp. 223-259.
- _____, 1999. 'The Process of Commercialization Under Colonial Conditions' in *The Long Transition: Essays on Political Economy*, Delhi: Tulika, pp. 252-304.
- _____, 2002a. 'Deflation and Déjà Vu: Indian Agriculture in the World Economy' in V.K. Ramachandran and M. Swaminathan (eds.), *Agrarian Studies: Essays On Agrarian Relations In Less-Developed Countries*, New Delhi: Tulika, pp. 111-143.
- _____, 2002b. 'Agrarian Crisis and Global Deflationism', *Social Scientist*, Vol.30, Nos. 1-2, Jan.-Feb, pp. 3-30.
- _____, 2003a. 'Global Capitalism, Deflation and Agrarian Crisis in Developing Countries', *Journal of Agrarian Change*, Vol. 3, Nos. 1 and 2, January and April 2003, pp. 33-66. Included also in S. Razavi (ed.), 2003, *Agrarian Change, Gender and Land Rights*, UNRISD and Blackwell, Oxford.
- _____, 2003b. 'Food Stocks and Hunger: The Causes of Agrarian Distress', *Social Scientist*, Vol. 31, Nos.7-8, July-Aug., pp. 15-41.
- _____, 2003c. 'On the Inverse Relation between Primary Exports and Food Absorption in Developing Countries under Liberalized Trade Regimes' in J. Ghosh and C.P. Chandrasekhar (ed.), 2003, *Work and Well-being in the Age of Finance*, Delhi: Tulika, pp. 256-286.
- _____, 2005. 'Liberalized Trade and Food Insecurity: The Indian Experience', Keynote Presentation at Conference on *How to ensure food security – a major challenge for policy coherence*, Luxembourg, March 21-23.
- _____, 2006. 'The Free Lunch: Transfers from the Tropical Colonies and Their Role in Capital Formation in Britain during the Industrial Revolution' in K.S. Jomo

- (ed.), *'Globalization Under Hegemony: The Changing World Economy'*, Delhi: Oxford University Press, pp. 30-70.
- _____, 2007a. 'The Republic of Hunger' in U. Patnaik, *The Republic of Hunger and Other Essays*, First Edition, New Delhi, pp. 115-150.
- _____, 2007b. 'Neoliberalism and Rural Poverty in India', *Economic and Political Weekly*, Vol. 42, No. 30, July 28 – Aug. 3, pp. 3132-3150.
- _____, 2010a. 'On Some Fatal Fallacies', *Economic and Political Weekly*, Vol. 45, No. 47, Nov. 20-26, pp. 81-87.
- _____, 2010b. 'A Critical Look at Some Propositions on Consumption and Poverty'. *Economic and Political Weekly*, Vol. 45, No. 6, Feb. 6-12, pp. 74-80.
- _____, 2012. 'Some Aspects of the Contemporary Agrarian Question', *Agrarian South: Journal of Political Economy*, Vol. 1, No. 3, pp. 233-254.
- _____, 2013. 'Poverty Trends in India 2004-05 to 2009-10: Updating Poverty Estimates and Comparing Official Figures', *Economic and Political Weekly*, Vol. 48, No. 40, Oct. 5, pp. 43-58.
- _____, 2014. 'India in the World Economy 1900 to 1935: The Inter-War Depression and Britain's Demise as World Capitalist Leader', *Social Scientist*, Vol. 42, Nos.1-2, January-February, pp. 13-35.
- _____, 2015. 'The Origins and Continuation of First World Import Dependence on Developing Countries for Agricultural Products', *Agrarian South: Journal of Political Economy*, Vol. 4, No. 1, April, pp. 1-21.
- Patnaik, Utsa (ed.), 1990a. *Agrarian Relations and Accumulation: The 'Mode of Production' Debate in India*, Oxford University Press.
- Patnaik, U., and Z. Hasan, 1995. 'Aspects of Farmers' Movement in Uttar Pradesh in the context of Uneven Capitalist Development in Agriculture' in T.V. Satyamurthy (ed.), *Industry and Agriculture in India since Independence: Social Change and Political Discourse in India, Structure of Power, Movements and Resistance*, Vol. II, Delhi: Oxford University Press.
- Planning Commission, 1993. *Report of the Expert Group on Estimation of Proportion and Number of Poor*, Government of India, July, 1993.
- _____, 2007. *Report of the Steering Committee on Agriculture and Allied Sectors for Formulation of the Eleventh Five Year Plan (2007-2012)*, Government of India, April 15.
- _____, 2009. *Report of the Expert Group to Review the Methodology for Estimation of Poverty*, Government of India, November.
- _____, 2012. *Press Note on Poverty Estimates, 2009-10*, Government of India, March 2012.

- _____, Mid-term Appraisal of the Tenth Five Year Plan (2002-07), Government of India.
- _____, Uttar Pradesh Development Report, Vol. 2, State Plan Division, Government of India.
- Prasad, Pradhan H, 1973. 'Production Relations: Achilles' Heel of Indian Planning', *Economic and Political Weekly*, Vol. 8, No. 19. May 12, pp. 869-872.
- _____, 1974. 'Reactionary Role of Usurer's Capital in Rural India', *Economic and Political Weekly*, Vol. 9, No. 32/34, Special Number.
- _____, 1986. 'Institutional Reforms and Agricultural Growth', *Social Scientist*, Vol. 14. No. 6, June, pp. 3-19.
- Raj, K.N., 1970. 'Some Questions Concerning Growth, Transformation and Planning of Agriculture in the Developing Countries' in Robinson, E.A.G. and Kidron, Michael (ed.), *Economic Development in South Asia*, Proceedings of a Conference held by the International Economic Association at Kandy, Ceylon. London: Macmillan Press Ltd., pp. 102-126.
- Rao, C.H. Hanumantha, 1975. *Technological Change and Distribution of Gains in Indian Agriculture*, Macmillan Company of India.
- _____, 2000. 'Declining Demand for Foodgrains in Rural India: Causes and Implications', *Economic and Political Weekly*, Vol. 35, No. 4, Jan.22-28, pp. 201-206.
- Rao, J. Mohan and Servaas Storm, 2003. 'Agricultural Globalization in Developing Countries: Rules, Rationales and Results' in J. Ghosh, and C.P. Chandrasekhar, (ed.), *Work and Well-Being in the Age of Finance*, Delhi: Tulika, pp. 212-255.
- Rao, V.M., 1970. 'Adjustment of Measure of Inequality in Rural Land Ownership for Landless Categories', *Indian Journal of Agricultural Economics*, Vol. 25, No. 2, April-June, pp.59-64.
- Ravallion, Martin and Gaurav Datt, 1995. 'Growth and Poverty in Rural India', *World Bank Policy Research*, Working Paper No. 1405, January.
- Reddy, D. Narasimha and Srijit Mishra (ed.), 2009. *Agrarian Crisis in India*, Delhi: Oxford University Press.
- Report of the National Commission on Agriculture, 1975. Section XV on Agrarian Reforms.
- Reserve Bank of India, *Handbook of Statistics on Indian Economy*, Various Issues.
- _____, *Reserve Bank of India Bulletin*, Bombay, Various Issues.

- Sankhyakiya Patrika, Muzaffarnagar District, Economics & Statistics Division (ESD) of Planning Department, Government of Uttar Pradesh, Various Issues.
- Sanyal, Amal. The Bombay Plan: A Forgotten Document, Accessed at <http://nzsac.files.wordpress.com/2012/05/bombayplanfornewsac.pdf>
- Sarvekshana, 1986. *Key Results on the last three quinquennial NSS enquiries on employment and unemployment: NSS 38th Round*, Vol. 9, No. 4, Issue No. 27, April.
- _____, 1988. *Report on the Third Quinquennial Survey on Employment and Unemployment: National Sample Survey: 38th Round (January-December 1983)*, Vol. 11, No. 4, Issue No. 35, April.
- _____, 1985-86. *Some Results on the Second Quinquennial Survey on Consumer Expenditure*, Vol.9, No.3, NSS 32nd round.
- _____, 1989. *A note and Survey results on monthly per capita consumption of cereals for various sections of the population*, Vol. 13, No.2, Oct.-Dec.1989, NSS 38th round.
- _____, (July-September) 2000. 84th Issue, Vol. XXIV, No.1, NSS 54th Round (Jan. 1998- June 1998).
- Sau, Ranjit, 1971. 'Resource Allocation in Indian Agriculture', *Economic and Political Weekly*, Vol. 6, No. 39, Sep. 25.
- _____, 1976. 'Can Capitalism Develop in Indian Agriculture?', *Economic and Political Weekly*, Vol. 11, No. 52, December 25.
- Saul, S.B., 1960. *Studies in British Overseas Trade: 1870-1914*, Liverpool: Liverpool University Press.
- Scott, James C., 1976. *The Moral Economy of the Peasant. Rebellion And Subsistence In Southeast Asia*, Yale University Press.
- Scott, C. D., 1977. 'Review of Griffin 1974', *The Journal of Peasant Studies*, Vol. 4, No. 2, pp. 244-8.
- Sen, Abhijit, 1996. 'Agriculture and Economic Liberalization: The Indian Outlook' in Peter Robb (ed.), *Meanings of Agriculture: Essays in South Asian History and Economics*, Oxford University Press, pp. 313-331.
- _____, 2002. 'Agriculture, Employment and Poverty: Recent Trends in Rural India' in V.K. Ramachandran and M. Swaminathan (ed.), *Agrarian Studies: Essays On Agrarian Relations In Less-Developed Countries*, New Delhi: Tulika, pp. 392-444.
- Sen, Abhijit and M.S. Bhatia, 2004. 'Cost of Cultivation and Farm Income: A Study on the Comprehensive Scheme for Studying the Cost of Cultivation of

- Principal Crops in India and of Results from it', as part of State of Indian Farmers: A Millennium Study, Ministry of Agriculture.
- Sen, A.K, 1962. 'An Aspect of Indian Agriculture', *The Economic Weekly*, Annual Number, February. pp. 243+245-246.
- _____, 1964. 'Size of Holdings and Productivity', *The Economic Weekly*, Annual Number, February. pp. 323+325-326.
- _____, 1966. 'Peasants and Dualism with or without Surplus Labour', *The Journal of Political Economy*, Vol. 74, No. 5. Oct., pp. 425-450.
- Sengupta, K.K., 1974. *Pabna Disturbances and the Politics of Rent, 1973-1985*, Delhi: People's Publishing House.
- Shanin, Teodor, 1972. *The Awkward Class. Political Sociology Of Peasantry In A Developing Society: Russia 1910-1925*, Oxford University Press.
- _____, 1980. 'Measuring Peasant Capitalism. The Operationalization of Concepts of Political Economy: Russia's 1920s- India's 1970s', in E J Hobsbawm *et al.*, (ed.), *Peasants in History –Essays in Honour of Daniel Thorner*, Oxford University Press, pp. 83-104.
- Shankar, Kripa, 1990. *Land Transfers: A Case Study*, Gian Publishing House.
- Sharma, Rita, and T. Poleman, 1993. *The New Economics of India's Green Revolution: Income and Employment Diffusion in Uttar-Pradesh*, Cornell University Press.
- Shukla, Tara, 1968. 'Investment in Agriculture', *Economic and Political Weekly*, Vol. 3, No. 45, 09 Nov., pp. 1729+1731-1732.
- Singh, Ajay Kumar, 2014. "Land Management: Land Acquisition and Rehabilitation and Resettlement" in A.K. Singh and S. Mehrotra (ed.), *Land Policies For Equity and Growth: Transforming The Agrarian Structure In Uttar Pradesh*, New Delhi: Sage Publications, pp.341-366.
- Singh, Baljit and Sridhar Misra, 1964. *A Study of Land Reforms in Uttar Pradesh*, Calcutta: Oxford Book Company.
- Singh, Charan, 1959. *India's Poverty and Its Solution*, Asia Publishing House.
- Statistical Diary of Uttar Pradesh. Economics and Statistics Division, State Planning Institute, Uttar Pradesh, Various Issues.
- Stokes, Eric, 1975. 'The Structure of Landholding in Uttar Pradesh, 1860-1948', *Indian Economic and Social Historical Review*, Vol. 12, No. 2, pp. 113-132. Reprinted in E. Stokes, 1978, *The Peasant And The Raj: Studies in Agrarian Society and Peasant Rebellion in Colonial India*, Cambridge: Cambridge University Press. (First paperback edition, 1980). pp. 205-227.

- _____, 1978. *The Peasant And The Raj: Studies in Agrarian Society and Peasant Rebellion in Colonial India*, Cambridge; Cambridge University Press. (First paperback edition, 1980).
- _____, 1989. *The English Utilitarians and India*, Delhi: Oxford University Press.
- Studies in the Economics of Farm Management in Muzaffarnagar District (U.P.), 1975. *Combined Report for the years 1966-67 to 1968-69*, Directorate of Economics & Statistics, Ministry of Agriculture, Government of India.
- Swaminathan, Madhura and V.K. Ramachandran, 2002. 'Rural Banking and Landless Labour Households: Institutional Reform and Rural Credit Markets in India', *Journal of Agrarian Change*, Vol. 2, No. 4, pp. 502-544.
- Swaminathan, Madhura, 2000. *Weakening Welfare: The Public Distribution of Food in India*, Left Word Books.
- Swamy, Dilip S., 1980. 'Land and Credit Reforms in India: Part One', *Social Scientist* Vol. 8, No. 11, June, pp. 3-13.
- Swamy, D. S., and A. Gulati, 1986. 'From Prosperity to Retrogression: Indian Cultivators during the 1970s', *Economic and Political Weekly*, Vol. 21, No. 25/26, June 21-28. pp. A-57 to A-59+A-61 to A-64.
- Thamarajakshi, R., 1977. 'Role of Price Incentives in Stimulating Agricultural Production in a Developing Economy' in Douglas Ensminger (ed.), *Food Enough or Starvation for Millions*, 20th July, New Delhi: Tata McGraw- Hill, pp.376-390.
- _____, 1990. 'Intersectoral Terms of Trade Revisited', *Economic and Political Weekly*, Vol. 25, No. 13, March 31, pp. A48-A52.
- Thorner, Alice, 1982. 'Semi-Feudalism or Capitalism? Contemporary Debate on Classes and Modes of Production in India', *Economic and Political Weekly*, Vol. 17, Nos. 49, 50 and 51, Dec. 4, 11 and 18, pp. 1961-1968, 1993-1999 and 2061-2066.
- Thorner, Daniel, 1956. *The Agrarian Prospect in India (Five Lectures on Land Reform delivered in 1955 at the Delhi School of Economics)*, Allied Publishers Ltd. Second Edition, 1976.
- _____, 1962. 'De-Industrialization' in India, 1881-1931' in Daniel and Alice Thorner, *Land and Labour in India*, Asia Publishing House, pp.70-81.
- _____, 1966. 'Chayanov's Concept of Peasant Economy' in Daniel Thorner, Basile Kerblay and R.E.F. Smith (ed.), *A.V. Chayanov on The Theory of Peasant Economy*. Delhi: Oxford University Press, pp. xi-xxiii. (First Indian edition, 1987). Reprinted as 'A Post-Marxian Theory of Peasant Economy: The School of A.V. Chayanov' in *Economic and Political Weekly*, Annual No., February 1965.

- Tyagi, D.S, 1987. 'Domestic Terms of Trade and their Effect on Supply and Demand of Agricultural Sector', *Economic and Political Weekly, Review of Agriculture*. Vol. 22, No. 13, March 28, pp. A30-A36.
- Whitcombe, Elizabeth, 1971. *Agrarian Conditions in Northern India, Volume I, The United Provinces Under British Rule, 1860-1900*, New Delhi: Thompson Press (India) Ltd.
- Woodhouse, Philip, 2010. 'Beyond Industrial Agriculture? Some Questions about Farm Size, Productivity and Sustainability', *Journal of Agrarian Change*, Vol. 10, No. 3, July, pp. 437-453.
- World Development Report, 1986. 'Agricultural Policies in developing countries: exchange rates, prices and taxation' and 'Agricultural Policies in developing countries: marketing and stabilization, subsidies and, policy reform' in Part II: Trade and Pricing Policies in World Agriculture, Oxford University Press.