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Living Conditions and Human Development in Uttar Pradesh: a Regional Perspective

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CURRENCY EQUIVALENTS

(Exchange Rate Effective June, 2008)

Currency Unit	=	Rupees (Rs.)
Rs. 1.00	=	US$ 0.022568
US$ 1.00	=	Rs. 42.86

FISCAL YEAR

April 1 – March 31

ABBREVIATIONS AND ACRONYMS

ANMs	Auxiliary Nurse Midwives
AP	Andhra Pradesh
ARI	Acute Respiratory Infections
ASER	Annual Status of Education Report
ASHA	Accredited Social Health Activists
BMI	Body Mass Index
BN	Bharat Nirman
BSP	Bahujan Samaj Party
CHC	Community Health Centers
CMIE	Centre for Monitoring Indian Economy
CPIAL	Consumer Price Index for Agricultural Labor Households
CPIIW	Consumer price index for industrial workers
CPL	Community Poverty Line
DES	Directorate of Economics and Statistics
DNDP	District Net Domestic Product
DPR	Development Policy Review
FCI	Food Corporation of India
FPS	Fair Price Shops
GDP	Gross Domestic Product
GIC	Growth Incidence Curves
GoUP	Government of Uttar Pradesh
GPs	Gram Panchayats
GSDP	Gross State Domestic Product
ICDS	Integrated Child Development Services
IMR	Infant Mortality Rate
ISM	Indian System of Medicine
JGSY	Jawahar Gram Samridhi Yojana
LFP	Labor Force Participation
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
MOP	Moving out of Poverty
MP	Madhya Pradesh
NCMH	National Commission on Macroeconomics and Health
NFHS	National Family Health Survey
NGOs	Non Government Organizations
NHA	National Health Accounts
NOAP	National Old Age Pension
NREGA	National Rural Employment Guarantee Act
NRHM	National Rural Health Mission
NSAS	National Social Assistance Scheme
NSS	National Sample Survey
OBC	Other Backward Castes
PCE	Per-capita Consumption Expenditures
PHC	Primary Health Centers
PMGSY	Pradhan Mantri Gram Sadak Yojana
PPS	Probability Proportional to Size
PROBE	Public Report on Basic Education
PSMS	Poverty and Social Monitoring
RCH	Reproductive and Child Health
SC/ST	Scheduled Castes and Tribes
SGRY	Sampoorna Grameen Rozgar Yojana
TPDS	Targeted Public Distribution System
VEC	Village Education Committee

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PREFACE AND ACKNOWLEDGMENTS

This report is a product of collaboration between Directorate of Economics and Statistics (DES) of the Planning Department, Government of Uttar Pradesh, and the World Bank. This work built up on the long-standing engagement between the World Bank and GoUP in the area of household survey data collection and analysis. In 1999, the Bank helped establish a Poverty and Social Monitoring System (PSMS) within the DES to enhance the latter's statistical capacity and poverty diagnostics. By March 2006, computerization of the DES's district offices was complete to help speed-up timely data processing, and much of the data entry work was devolved to the districts offices. The PSMS collected two additional poverty-focused multi-purpose surveys (called PSMS-I and II) and two statistical reports have resulted from an analyses of these data. A series of workshops took place in Lucknow to discuss the PSMS reports and the concept note for this report. In November 2007, the Giri Institute and the World Bank co-hosted a consultatitive workshop chaired by Mr. V. Venkatachalam, Principal Secretary, Planning Department, GoUP to receive feedback on the early findings that emerged from the analysis conducted in the course of work on this report. A number of government officials and academics also participated and valuable contributions were made, especially by Mr. T. N. Dhar, Dr. A. K. Singh (Director, Giri Institute), Mr. Anis Ansari (former Agriculture Production Commissioner, GoUP), Dr. Pradeep Bhargav (Pant Institute, Allahabad), Mrs. Saheba Hussain and Dr. B. M. Joshi (Secretary, Finance, GoUP). This version of the report incorporates their feedback.

This report has been written by Elena Glinskaya, Senior Economist with key contributions from V. J. Ravishankar, Lead Economist in the South Asia Poverty Reduction and Economic Management Unit (SASPF) of the World Bank. They worked under the guidance of Isabel Guerrero, India Country Director, Fayez Omar, India Senior Manager, and Ijaz Nabi, SASPF Sector Manager. Mikhail Bontch Osmolovski made major contributions to the data analysis presented herein. Tonina Dumic conducted various background research and prepared a literature review. The report draws upon the contributions of many people, including Rita Almeida (labor markets), Angus Deaton (alternative poverty estimates), Ashish Narayan (economic growth), Forhad Shilpi (agriculture and rural non-farm sector), Anna Heard, Emily Das and Birte Sorensen (health), Reema Nayar, Soumya Alva, Samuel Carlson, Priyanka Pandey and Karla Hoff (education), Ihsan Ajwad (social protection), Stuti Khemani (political economy of service delivery), Sergiy Radyakin (maps), R. K. Chauhan (non-income dimensions of poverty), N.K. Singh (urban analysis and district-level poverty analysis), and Richa Singh (poverty and labor market trends of SC/ST and a comparison of UP – all India poverty trends). The report draws on "Uttar Pradesh: Moving out of Poverty," study which was part of a multi-country project led by Deepa Narayan. Michael Lokshin, Zurab Sajaia and Sergiy Radyakin provided the team with access to the ADEPT (Automated DEC Poverty Tables) and most of the "poverty profile" tables were generated using this software. Peer reviewers of this report were Peter Lanjow and Mamta Murthi.

The idea of a report focusing on regional differences in UP originally came from Mr. Sunil Kumar, Secretary, Planning Department, GoUP. He and Mr. V. Venkatachalam, Principal Secretary, Planning Department, GoUP were the principal counterparts at report's inception. During the preparation of this report Mr. V. Venkatachalam, provided routine advice, encouragement and direction to the team. Dr. R. Tiwari, Director, DES and Mr. A. K. Tiwari, Additional Director, DES monitored and supervised the PSMS data. Mr. S. D. Verma, Deputy Director, DES contributed to multiplier generation and the pooling of data sets. Dr. R. K. Chauhan Economics and Statistics officer, DES and Dr. N.K. Singh, implemented the pooling of PSMS and NSS data sets, generated multipliers for PSMS data, and worked with the World Bank team on a day-to-day basis.

At various stages of the preparation of the report, Ahmad Ahsan, A K Singh, Shanta Devarajan, Rinku Murgai, Ijaz Nabi, Giovanna Prennushi, Jishnu Das, Tara Vishwanath, Salman Zaidi, Arpita Chakraborty, Dipak Dasgupta, Karla Hoff, Deepa Narayan, Ashish Narayan, Marina Wes, Rajni Khana, Kapil Kapoor, Deepak Mishra, Pralhad Burli, and Sam Carlson provided invaluable comments. Susan Middaugh (Have Pen, Will Travel) edited the report and Shahnaz Sultana Ahmed did additional proofreading. Rita Soni processed the report and organized logistical and administrative support in Washington DC; Vinod Ghosh provided logistical support in New Delhi and Lucknow.

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EXECUTIVE SUMMARY

1. For the past few decades, Uttar Pradesh has been classified as India's lagging state because of its low growth, high concentration of the poor and low human development outcomes. There are valid reasons to take this view. India has been growing at six percent per annum over the last decade, in contrast, growth in Uttar Pradesh (UP) averaged four percent per annum, continuously slipping behind the rest of India. Yet, the release of the 61st rounds of NSS data showed that between 1994 and 2005, UP's decline in headcount poverty was approximately the same as in India overall; the proportion of people in poverty went down by about 0.8 percentage points a year. These patterns painted a more nuanced picture of development in UP and warranted a detailed investigation of patterns of growth, poverty reduction and changes in human development outcomes in UP, which became the subject of this report.

2. Although UP lagged in sectors that performed well in India – namely services and to some degree manufacturing – UP did better in agricultural growth than the country as a whole. Within UP, overall growth was higher in urban areas, but agricultural growth in rural areas brought about lower inequality and more pro-poor patterns. As a result, rural areas had a greater reduction in poverty. The urban and rural headcount poverty rates were much closer to one another in 2005 compared with earlier years.

Figure 1: Four regions of Uttar Pradesh

3. Poorer regions did relatively well in UP; poorer groups also did better than average. The most impoverished and remote Southern region of UP registered a District Net Domestic Product (DNDP) growth of six percent because of agriculture and services; the Central region was next with annual DNDP growth of 4.8 percent. Between 1994 and 2005, poverty declined in the Southern region by 29 percentage points (from 68.9 to 39.8) and in the Central region by 18 percentage points (from 46.7 to 28.8). Central region benefited from its urban dynamism absorbing labor freed from agriculture and allowing non-agricultural sector to expand; Southern region had an impetus from construction industry. Together these two regions represent only one-quarter of UP's population, but had they been states (with populations of 10 million and 31 million people, respectively) they would've been classified in India's top third for their efforts to reduce poverty.

4. UP's Scheduled Castes (SC) registered a greater decline in poverty than majority groups there (15 percentage points for the SC group and 9 percentage points for the population on average). Agricultural, female and rural wages grew faster than non-agricultural, male and urban wages, respectively. Gaps in school enrollment declined and some age groups achieved urban-rural and gender parity. SCs, who are overrepresented in agricultural occupations, benefited from increasing agricultural wages, while those who entered labor market came with a boost in their education levels enabling them to increasingly take up self-employment and non-agricultural jobs. Between the mid-1990s and the mid-2000s, traditionally slow-growing regions and poorer people saw faster improvements in Uttar Pradesh.

5. The good news is that the lagging regions in UP have improved their performance. The bad news is that the two regions, which contain the majority of UP's population -- the West with

38 percent and the East with 39 percent – have lagged in growth and poverty reduction. Economic forces that led to a pronounced trend of catch-up, convergence and a reduction in regional disparities in average incomes, poverty and wages have not made a dent in the most populous areas of UP.[1] The same is true of health indicators that continuously lag behind all-India outcomes and are very slow to change. Now the challenge is for a regionally-focused strategy to capitalize on the achievements of the faster-growing regions and to reverse the trends in the West and the East. Just as India cannot break out of poverty without lifting up millions of UP's poor, UP cannot expect to speed up growth and poverty reduction without jump-starting growth in the Western region and engaging the dormant potential of the Eastern region. This report presents the elements of a strategy to do so.

Faster poverty reduction in rural areas and in the Southern and Central regions

6. The poverty rate in UP declined from 41.7 percent of the population in 1993-94 to 32.7 percent in 2004-05. This nine percentage point change represents a decline of 22 percent (table 1). Poverty in rural areas declined faster (from 43 to 33 percent), but it remained higher than poverty in urban areas (which dropped from 36 to 30 percent).[2] Although poverty declined faster in rural areas, growth in real per-capita consumption expenditures (PCE) was faster in urban areas. These patterns emerged because PCE growth was skewed towards high-percentile households in urban areas. The opposite was true in rural areas. Growth Incidence Curves (GIC, figure 2) illustrate these patterns of growth which explain why growth has had a much stronger impact on poverty in rural as compared with urban areas. Similar to the patterns illustrated by the GICs, trends in Gini coefficients show that inequality in urban areas worsened (Gini coefficient increased from 32.9 in 1994 to 36.8 in 2005), while inequality in rural areas remained lower and practically unchanged (Gini coefficient changed from 28.6 in 1994 to 28.8 in 2005).

Table 1: Trends in headcount poverty in Uttar Pradesh and its regions. 1993-94 – 2004-05

	All				Rural				Urban			
			change				change				change	
	1994	2005	percentage points	percent	1994	2005	percentage points	percent	1994	2005	percentage points	percent
Western	29.8	25.1	-4.7	-16%	29.3	24.1	-5.3	-18%	31.1	28	-3.1	-10%
Central	46.7	28.8	-17.9	-38%	50.2	30.1	-20.1	-40%	33.9	24.6	-9.2	-27%
Eastern	47.5	41	-6.6	-14%	48.8	41.4	-7.4	-15%	38.6	37.5	-1.1	-3%
Southern	68.9	39.8	-29.1	-42%	67.4	38.9	-28.5	-42%	74.4	43	-31.4	-42%
Total	41.7	32.7	-9.1	-22%	43.1	33.3	-9.8	-23%	36	30.1	-5.9	-16%

Source: Staff calculations based on 50th and 61st Central NSS samples

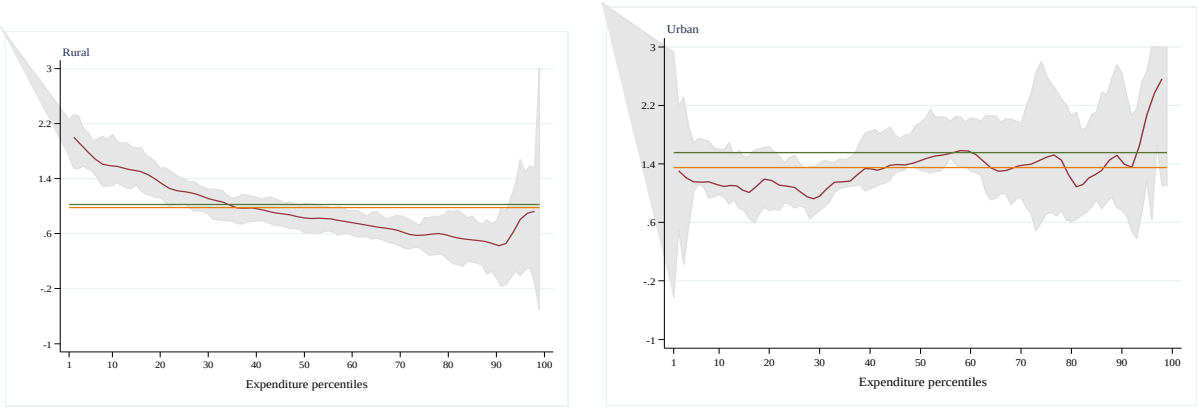
7. The steepest poverty decline took place in the Southern region, closely followed by the Central region (table 1). In terms of a regional contribution to a decline in poverty, the single largest contribution came from the Central region. Between 1994 and 2005, this region accounted for almost 40 percent (out of a hundred) of the decline in poverty. The most developed Western region and the most populous Eastern region experienced little progress in reduction in poverty. In 2005, nearly one-third (28.9 percent) of all poor lived in the Western region and nearly one-

[1]Two notable exceptions to the trend in convergence are the growing disparity between regular and casual wages and the increasing differentiation of the urban upper middle class based on income, school enrollment and housing preferences.

[2]Between 1993-94 and 2004-05, the headcount poverty rate in Uttar Pradesh declined approximately at the same rate as that in India overall. During the same period, poverty in all-India declined from 35.8 to 27.1 percent; that represents a decline of 8.7 percentage points or 24 percent. In rural areas, the decline in poverty in UP was faster than it was nationwide; in urban areas it was slower. In particular, the all-India headcount poverty in rural areas declined by 8.5 percentage points from 37.2 to 28.7 percent. In urban areas, the all-India headcount poverty declined by 6.7 percentage points from 32.6 to 25.9 percent.

half (48.6) percent lived in the Eastern region. These regional trends were present in both rural and urban areas. In urban areas of the Eastern region, poverty rates virtually stagnated during the decade (table 1).

Figure 2: PCE growth incidence curves in Uttar Pradesh, rural and urban areas, 1994-2005



Faster progress among Scheduled Castes (SC)

8. Other sources report increasing political mobilization and empowerment by the SCs as a force to improve their social status. This report found that SC groups in UP advanced their relative economic position in the last decade. Although the prevalence of poverty is still highest among SCs, on average, it has declined faster among them than the state as a whole. These improvements have occurred across the board in absolute and relative terms. Urban areas in the Eastern region are a notable exception; a decline in the SC's casual wages there was accompanied by an increase in poverty among SCs. Overall, SCs are overrepresented among agricultural laborers; the growth in agricultural wages benefited this group. In addition, the wages of SC groups have risen faster than those of majority groups for men (but not for women). This change followed improvements in the education level of those entering the labor market which began a decade and a half ego. SC/ST groups also started to be self-employed; they have left casual agriculture faster than other groups and have taken advantage of increased demand in the construction industry. The percentage of SCs engaged in regular salaried work also increased.

Table 2: Headcount poverty rate in India and UP among SCs and the general population, 1994 – 2005

	UP SC/ST				all UP				SC in India overall*			
			change				change				change	
	1994	2005	percentage points	percent	1994	2005	percentage points	percent	1994	2005	percentage points	percent
Rural	59.9	44.5	-15.4	*-26%*	43.1	33.3	-9.8	*-23%*	48.2	37.1	-11.1	*-23%*
Urban	58.5	43.3	-15.2	*-26%*	36.0	30.1	-5.9	*-16%*	50.9	37.0	-13.9	*-27%*

Source: Staff calculations based on 50th and 61st Central NSS samples
Note: SC/ST group in UP overwhelmingly consists of Scheduled Castes. Overall, the proportion of SCs in the population of UP is 23.1 percent, and the proportion of STs is 0.4 (2000 Census).

9. SC groups continue to take steps to better their economic and social position. SCs were quicker to increase school enrollment than the general population. For some age-gender groups, educational outcomes are higher for SCs than for majority groups. SC groups aspire to better outcomes for their children, but the legacy of discrimination in many aspects of day-to-day living weigh on them (Hoff and Pandey 2006, Hoff and Pandey, 2007). It is a tall order to change their position for the better. As a group, they remain the poorest members of UP's population and in

general, their human development outcomes lag. Especially worrisome are an increase in poverty among SCs in the urban Eastern region and a lack of progress in female wages.

Poverty trends in rural areas reflect good agricultural performance and the expansion of the non-farm sector

10. During the last decade, improvements in agricultural performance raised farm incomes and led to a reduction in poverty among the self-employed in agriculture in all regions (table 3). This group, which comprises 50 percent of the rural population, saw the fastest decline in poverty among four occupational groups (table 3). Better irrigation and agricultural diversification, use of hybrid seeds, fertilizer, and other productivity-enhancing agricultural initiatives helped UP's agricultural growth. The spread of commercial farming (particularly sugarcane and peppermint) did too. Livestock production increased, especially among the poorer households and those with less land. An additional element to poverty reduction in the Southern region came from an increase in the relative prices of pulses, which is a major crop in the region.

Table 3: Trends in poverty across regions and employment groups in Uttar Pradesh, rural areas, 1994-2005

	1994	2005	change (percentage points)
Western Region			
Agricultural labor	45.3	46.3	1.0
Self-employed in agriculture	23.1	14.8	-8.3
Self-employed in non-ag.	36.2	26.4	-9.8
Non-ag. casual labor	39.1	39.2	0.1
Central Region			
Agricultural labor	70.2	46.4	-23.7
Self-employed in agriculture	45.4	24.1	-21.4
Self-employed in non-ag.	49.7	32.4	-17.2
Non-ag. casual labor	57.6	46.6	-11.0
Eastern Region			
Agricultural labor	71.7	69.8	-1.9
Self-employed in agriculture	42.3	34.2	-8.1
Self-employed in non-ag.	47.4	42.2	-5.2
Non-ag. casual labor	59.0	55.6	-3.4
Southern Region			
Casual labor	94.3	59.0	-35.4
Self-employed	57.6	34.7	-23.0

11. Male real agricultural wages went up by 2.3 percent per annum; in contrast, non-agricultural male wages nearly stagnated increasing by 0.8 percent annually. Good performance in agriculture and the expansion of non-farm employment gave stimuli to agricultural wages improving the productivity and tightening the agricultural labor market. Non-agricultural wages stagnated following a slowdown in manufacturing and to accommodate an inflow of workers from agriculture (table 4). These trends led to a faster decline in poverty among agricultural laborers, compared with those in non-agricultural casual work. The difference in poverty rates among casual laborers in non-agriculture and agriculture was 12.4 percentage points in 1994; non-agricultural laborers had the lower poverty rate at that time. By 2005 this disparity had dropped to 6.8 percentage points.

Table 4: Male real wages and distribution of the workforce, Uttar Pradesh, rural areas, 1994 - 2005

	1994	2005	change (percent)
Male casual wages			
Agricultural wages	21.8	27.9	*28%*
Non-agricultural wages	29.7	32.4	*9%*
Male share of workforce (rural areas)			
Agricultural Labor	20	13	*-34%*
Agricultural self-employment	54	49	*-10%*
Non-agr. self-employment	14	19	*31%*
Non-agr. casual	5	10	*84%*
Other	7	10	*45%*

12. The difference in poverty trends across all four regions hinges on an understanding of the trends in poverty among the self-employed in the non-agricultural sector and non-farm casual workers. Given the importance of urban rural linkages and the performance of the urban economy to develop the non-farm sector, it is not surprising that slower poverty reduction among self-employed in non-agriculture and sluggish growth in non-farm wages occurred in Eastern and

Western UP. The urban areas of these regions showed less dynamism (see below). Development in the non-farm sector played an important role in the reduction of poverty in UP's rural areas.

Urban areas of the Western and Eastern region saw little growth and little reduction in poverty, which was due to poor performance in manufacturing in the Western region. The Central region generated high growth, but increases in inequality mitigated the decline in poverty there

13. Growth in urban manufacturing was disappointing in UP. The lack of growth led to stagnation and to a decrease in real casual and regular manufacturing wages in urban areas. These patterns translated into increase in poverty among manufacturing workers who were self-employed and those with salaried jobs. While casual workers in manufacturing did experience some reduction in poverty, it was considerably lower than casual workers in agriculture or services (table 5). Because employment in the manufacturing sector predominates in the Western region, it explains some of the low performance there.

Table 5: Headcount poverty rate based on employment sector of the head of household, Uttar Pradesh, urban areas, 1994-2005

	Headcount poverty rate		
	1994	2005	change (percentage points)
Agriculture			
Self Employed	58.8	31.0	-27.9
Casual Labor	80.2	66.6	-13.6
Other	27.6	22.6	-5.0
Manufacturing			
Self Employed	30.1	37.8	7.7
Salaried Labor	20.0	26.1	6.1
Casual Labor	39.6	30.5	-9.1
Trade			
Self Employed	36.2	28.8	-7.4
Salaried Labor	n/a	n/a	n/a
Casual Labor	77.9	35.9	-42.0
Services			
Self Employed	46.5	33.8	-12.7
Salaried Labor	14.3	16.6	2.3
Casual Labor	70.3	55.5	-14.8

14. Urban areas of the Central region of UP showed the most dynamism in terms of growth. Growth was also high in urban areas of the Southern region. In the Central region, growth was accompanied by a substantial increase in inequality, which mitigated its impact on poverty reduction in the region (table 5). The composition of the Central region in terms of the city size sheds some light on the patterns of growth and inequality. More than one-half of the urban population in the Central region lives in the metropolis of Lucknow and Kanpur, which also attract many instate migrants from rural areas. The other half of the urban population lives in the small towns. More work is needed to better understand patterns of growth across different city sizes, but it is plausible that inequality between large and small towns and within large towns contributed to this increase.

Table 6: Poverty rate, PCE growth and inequality in Uttar Pradesh and its regions, urban areas, 1994-2005 (change in percent)

	Headcount poverty rate			PCE growth			Gini		
	1994	2005	change	1994	2005	change	1994	2005	change
Western	31	28	-10%	436	456	5%	0.38	0.37	-1%
Central	34	25	-27%	356	557	56%	0.39	0.43	11%
Eastern	39	38	-3%	350	384	10%	0.37	0.40	7%
Southern	74	43	-42%	232	348	50%	0.39	0.37	-6%
All UP	36	30	-16%	387	457	18%	0.38	0.40	4%

Urban areas of UP have quite different structures across four regions and could capitalize on these differences

15. The Western region is characterized by a concentration of population in mid-size cities. These cities house almost one-quarter of its urban population. Sixty-five percent of the urban population in the Central region lives in "metropolitan cities" with a significant concentration in the Kanpur and Lucknow megapolises. The Eastern and Southern regions have a heavy concentration of their urban populations in small and medium-sized towns whose population is

less than 100,000 people. The size of the township has important implications for urban development strategies. In a state dependent on agriculture and with a high proportion of the population living in rural areas, small towns tend to serve as market towns; they offer an opportunity to bring buyers and sellers together. Marketing infrastructure and a conducive institutional framework are important for their development; urban strategists in Eastern and Southern regions capitalize on these factors.

16. The Eastern region has a heavy concentration of its urban population in small and medium-sized towns whose population is less than 100,000 people. Given the region's high dependence on agriculture and the high proportion of the population living in rural areas, small towns tend to serve as market towns. They offer an opportunity to bring buyers and sellers together. Marketing infrastructure and a conducive institutional framework are important for their development; the urban strategy in Eastern region needs to capitalize on these factors.

17. For the megapolises of the Central region, urban management will soon become an important issue as this area continues to grow and attract migrants from all over the state. An economic development strategy, which recognizes that investments will allow for a conglomeration of industries, is necessary to further increase productivity.

In rural areas as well, regional differences in the distribution and incidence of the poor, their potential for agricultural and non-agricultural growth call for a regionally differentiated strategy

18. The elements of such a strategy include the following.

- ***The Western region***, the economically most developed region of the state, has stagnated in recent times due to lack of industrial growth. The strategy for pro-poor rural growth in this region will have to focus on enhancing the capability of poorer households to participate in better-paid activities and on improving the investment climate for modern industry and services, and rural non-farm growth. With appropriate infrastructure investments, the benefits of proximity to the national capital region can be extended beyond Ghaziabad and NOIDA to other districts. In agriculture, the scarcity of land and water heightens the importance of diversification to higher-value products. Consumer demand, which is changing due to a rise in incomes, will provide huge opportunities for producers in Western Uttar Pradesh to diversify into higher-value products, including fruits, vegetables, livestock, aquaculture, and associated livestock feeds and forages. Increasingly liberal export markets will also be a boon to this diversification. As incomes go up, the demand for processed products will increase along with it. This situation presents new opportunities for agro-processing and related services.

- In the ***Central region***, the rural labor market has shown signs of tightening as urban expansion siphoned off labor from the countryside. This region will have to ensure the sustainability of non-farm growth in urban areas while supporting the expansion of non-farm activities in rural areas. The increasing demands of urban metropolitan centers present huge opportunities for agricultural diversification.

- ***The Eastern region*** is less urban and has insufficient access to larger markets. Farming and non-farm development here require improvements in connectivity. Yields for major crops are lower than in the Western region. Land is tied to cereal production even though returns from other crops -- vegetables, sugarcane and fruits -- are much higher. Agricultural growth will depend on the ability to reduce the gap in yield for cereal crops (wheat and paddy) and to diversify into cash crops that command a higher return. Improving access to markets is especially

important here. The Eastern region lags behind the Western and Central regions in transport infrastructure and physical facilities in the market place.

- The ***Southern region*** remains one of UP's most sparsely populated. Improvements in farming income have led to a substantial decline in rural poverty. Given its limited agricultural potential, this region will have to focus on investing in human capital to improve the mobility of its people. In the short run, the region can also explore ways to develop agriculture (crops and livestock). The latter are more suitable to its agro-climatic conditions.

About two million men left UP in the last decade and 70 percent of them did so to look for employment

19. Urban areas of Maharashtra, Delhi and Gujarat are the top three destinations for those who migrate out of UP for economic reasons. The top three rural destinations are Haryana, Uttaranchal and Delhi. Although non-agricultural employment expanded in UP, slow growth in urban wages and a negligible increase in the number of regular salaried jobs compelled men, especially young men, to look for employment elsewhere. While there were no large-scale quantitative surveys to measure the extent and impact of migration and remittances on living conditions in UP, the Moving out of Poverty study has some evidence to suggest that Muslim households adopted migration as a widely-used strategy to escape poverty. They migrated to foreign shores, such as the Middle East, and that had a big impact on their living conditions. Ojha (2007) also reported an income-enhancing strategy among various UP households whereby men migrated in search of better paid non-agricultural employment over the short, medium or long term and women stayed behind to tend to the family plots. Evidence in neighboring Nepal also demonstrates the importance of migration and remittances.

20. Intra-state migration in UP occurs primarily among those who move from one regular job to another, but there are also those who move to set up a self-employment venture or take up non-farm casual work. In-state migrants tend to go to urban areas of the Central and Western regions. Out-of-state migrants come to UP to take up casual non-agricultural jobs, mostly in the Western region. Mobility is associated with upward occupational change and an increase in income. Rural to urban migration drives urbanization in India and other countries by moving people to higher-productivity jobs and reducing pressure on agriculture. It is therefore imperative for UP to revitalize urban growth. At the same time, urban management will soon become an important issue, especially for the megapolises of the Central region; this area continues to grow and attract migrants from all over the state.

Educational attainments have improved, but gaps remain

21. Educational outcomes improved in UP. This shift started decades ago due to increased demand for education from the population and the government's efforts to deliver better services. Between 1994 and 2005, the share of illiteracy among young adults (15-21 years old) declined from 40 to 25 percent. Improvements came in urban and rural areas and across income and social groups.

22. Current school enrollment also improved. Enrollment of young girls (6 to 10 years of age) increased by 70 percent, and boys' enrollment in the same age group increased by approximately 20 percent. Still, in rural areas, boys' enrollment was uniformly higher than girls' in the 6-10 and 11-13 age groups. Among 14-15 year olds in rural UP, about 70 percent of boys and about 60 percent of girls were in school in 2005. In urban UP, boys' enrollment stagnated at around 65 percent during the same period. Girls' enrollment increased, which brought about gender parity.

23. A notable exception to the positive story of improvement in educational outcomes is trends among 11-13 year old boys in urban areas. Their current enrollment declined, driven by trends in the two lowest quintiles and the Western region. The stagnation in enrollment among 14-15 year old boys in urban areas (accompanied by an increase in reports that these youth needed to supplement their family's household income) is also a reason for concern. Dropping out of school, which might be necessary in the short term, can have long-lasting and detrimental consequences on accumulation of human capital. Flexible schooling arrangements might bring these youth back to school.

Private schooling continued to expand in UP, and the urban middle class and upper-classes have effectively opted out of the public education system

24. Private schooling continued to expand in UP. It increased at the primary level and exploded at the secondary. Between 2000 and 2005, enrollment in private schools doubled for boys and girls age 6 to 10 and 11 to 13 and nearly tripled for 14-15 year olds. At the secondary level, private enrollment jumped from 14 percent to 60 percent of total enrollment in rural areas and from 28 percent to 62 percent in urban areas. Overall, private enrollment in the wealthiest Western region was above average. In the poorest Southern and Eastern regions, it was lower than average.

25. The urban middle class and upper classes have effectively opted out of the public education system. Among the wealthiest 40 percent of households, 90 percent of them have enrolled their 6-10 year old children in private schools. Evidence from diverse cultures shows that the middle class is more capable than the poor of exerting pressure on authorities to improve the delivery of educational services. Worldwide, the most successful interventions have integrated the poor and the middle class in the same facilities. Therefore, it is a worrisome development that UP's urban middle class has effectively opted out of the public education system and left the poor in "poor" facilities. Improving the quality of public schools is of prime importance. However, GoUP could also consider providing vouchers so that the poor can attend the same facilities as the middle class. When it comes to government regulation of private primary and secondary education, more work, including extensive data collection, needs to be done to determine the specific parameters and benefits of such regulation. Based on the experience of other South Asian countries, particularly in the early stages of the emergence of private schools, a parent's ability to choose has inherent safeguards against market imperfections. Any regulation of this sector by the State should be accompanied by government's willingness to review and revise its regulations as the need arises.

A number of surveys show that the quality of education in UP is low, but it does show some signs of improvement. All learning outcomes in private schools are higher than those in public school

26. According to the Annual Status of Education Report (ASER) results, slightly more than 65 percent of children in grades 1-2 in UP recognized numbers or could read a word or a letter in their language. A smaller survey (Teacher Accountability and School Outcomes collected by PRATHAM and World Bank teams) shows results that are even more stark. On average, only 20 percent of pupils in grade 2 can read a word; that percentage increased to 27 percent by grade 4. In math, children in grade 2 scored 13 percent and in grade 4, 23 percent had correct answers. This means that nearly 67-78 percent of children in grade 4 cannot read a simple sentence or perform simple arithmetic. These results are low in absolute levels and they are worse compared to some other states. In addition, these results show that from one grade to the next, gains in learning have been small.

27. School instruction is important in determining these outcomes. School and teacher characteristics correlate with test scores. The teacher-pupil ratio, an extra teacher, the teacher activity variable (i.e., the fraction of teachers engaged in a school activity based on an average of more than four visits) is positively and significantly correlated to test scores in all grades. Contract teachers (*shiksha mitra*) have a significantly higher attendance rate and activity level compared to regular teachers. Children also learn from their families. Children from wealthier families and those with literate mothers are more likely to have higher scores. The effect of family characteristics is stronger in UP than other states. That means the UP school system is less likely to mitigate the disadvantages of students from less wealthy backgrounds than other states in India.

Health outcomes in UP improved in the last decade, but, in general, they remain below the national average

28. Similar to trends in economic indicators, greater strides occurred in rural areas, but the outcomes there were below those in urban areas. Variations in health outcomes exist across regions and socio-economic groups. Being poor, rural, and illiterate are all associated with poorer health outcomes and less use of appropriate health services. Although members of low socio-economic groups are consistently worse off, there is not a consistent regional pattern for major health care indicators. The highest rates of childhood malnutrition are in the Central region, but the severest cases are in the Western region. In general, the Southern region has better indicators for nutrition; however, anaemia there is relatively high. Immunization rates vary by vaccine, although full vaccination is worst in the Southern region. Broadly aggregated, poor-performing districts are clustered in the north-central area of the state; these figures are consistent with low rates of literacy and female education.

Table 7: Selected health indicators, Uttar Pradesh and India, 1992-93 and 2005-06 (in percent)

	UP		India	
	NFHS-2 1998-99	NFHS-3 2005-06	NFHS-2 1998-99	NFHS-3 2005-06
Children 12-23 months who received all recommended vaccines:				
Urban	31	33	61	58
Rural	18	21	37	39
Total	20	23	42	44
Children under age 3 who are:				
Stunted (too short for age)	56	46	38	46
Wasted (too thin for height)	11	14	19	16
Underweight (too thin for age)	52	47	47	46
Number of infant death per 1,000 live birth in the last 5 years:				
Urban	63	64	47	42
Rural	94	75	73	62
Total	89	73	68	57
Trends in contraceptive use , currently married women 15-49 years old:				
Urban	44	56	58	64
Rural	23	40	45	53
Total	27	44	48	56
Trends in institutional deliveries , birth in the last 3 years:				
Urban	37	40	65	69
Rural	11	18	25	31
Total	15	22	34	41

29. The majority of health care in Uttar Pradesh comes from the private sector. Nearly 90 percent of rural and urban residents use the private sector for outpatient care compared to 78 percent in rural and 81 percent in urban areas in India overall. Likewise, 74 percent of rural and 68 percent of urban residents frequent private hospitals compared to 59 percent of rural residents and 63 percent of urban residents nationally. There are new and important initiatives in UP to capitalize on the strength of the private sector. UP's Health Department started contracting out some health service delivery (ANM centers as well as PHCs and CHCs), and contracting in some ancillary services in the health system. The experience of Madhya Pradesh with Rogi Kalyan Samiti (hospital management societies) that now exist in government hospitals and are allowed to retain money that comes directly to them as well as to decide how to use these funds, might be

beneficial for UP. There are also plans in UP for piloting health insurance initiatives in the near future and the early experience of GoI's RSBY (Health Insurance for Below Poverty Level Households), may be worth studying.

30. While health outcomes and provision of health care are interrelated, problems outside of the health sector affect population health outcomes as well. The state of sanitation in UP is very low. In rural areas, two out of every six households are not connected to a drain. These numbers have changed very little since the year 2000. Less than 10 percent of rural households have access to a private latrine. In urban UP, 65 percent of households have access to a private latrine; the remainder of those without it poses a public health hazard. Changes in sanitation practices, availability of safe water and increasing access to roads as well as improved regulation of the iodine content in salt are necessary to improve health outcomes.

Improvements in service delivery hinge on overcoming institutional and political economy constraints

31. Constraints on service delivery could be of a fiscal, institutional and politically economic nature. UP has emerged from its fiscal problems. It now has more fiscal space for development spending than it did five or six years ago, thanks to the success of fiscal reforms implemented since 2000. These reforms include enacting and complying with a fiscal responsibility law. As a share of total expenditures and net lending, capital spending has risen from 7.7 percent in 1998-00 to 19.7 percent in 2006-07. The combined share of salaries, pension and interest payments have significantly declined. Meanwhile, the percentage of non-salary recurring expenditures for goods and services has gone up. The aggregate fiscal improvement makes it possible to embark on an ambitious development effort in 2007-12. The timing coincides with the Eleventh Five-Year Plan.

32. The challenge of translating outlays to outcomes is now essentially a question of *institutions* and *incentives*, not only economic but also political incentives. The 2004 World Development Report, "Making services work for poor people," puts forth a conceptual framework that analyzes service delivery relations within an "accountability triangle." This triangle has three sets of inter-relationships among three sets of actors: (i) elected political representatives or "the state", (ii) service providers and (iii) beneficiaries or citizen clients.

33. The link between the political executive and the service providers (link 1) belongs in the realm of public sector management. Political developments in the past decade and a half, when regional parties championed the cause of empowering the lower and intermediate sections of society, led to a weakening of trust between political representatives and the civil service. This situation needs to be repaired. Attempts by the new government to rationalize and to increase the transparency of and regulate the process of recruitment, transfers and posting in the civil service, are first steps to fix the problem. There is still a long way to go, based on the distance between senior bureaucrats in the state secretariat and the front-line service providers in the varied and far-flung regions and districts of this massive state.

34. The link between service providers and the intended beneficiaries of public spending programs (link 2) suffers from an entrenched culture that information is power. This is also beginning to change, but slowly. One major sign of change is the enhanced degree and quality of financial information displayed on the official government website. More such measures to provide relevant information to the public are reportedly under consideration. These include the public display of fund allocations and actual expenditures outside schools and health centers as well as lists of beneficiaries of anti-poverty programs, etc.

35. Other institutional changes to strengthen these two links were identified in India DPR[3] and are applicable to UP. These include the following.

- Clearer delegation of responsibility of providers for outputs and outcomes—expanding from responsibility to compliance.
- An unbundling of the roles of government between the general responsibility for a sector and the production of the outputs—moving away from situations in which line agencies are both umpire (responsible for setting standards, creating and disseminating information, monitoring compliance, evaluation) and player (responsible for day-to-day management of providers).
- Greater autonomy of providers (both organizational and frontline) in how they achieve their goals and insulation from top down or narrowly political micro-management.
- Increased external accountability, which requires greater transparency and better flow of information and social mobilization/empowerment to make that information effective.
- Greater enforceability so that citizens and communities become the direct "clients" of service providers (both public and private) and they have a greater voice (over the responsible level of government) and choice across providers (as an effective mechanism to exercise power).

The weakest link

36. The link between elected political representatives and citizens/clients (link 3) is the weakest in UP (as in many other places). Political scientists who work in India and specifically in UP believe that the main currency of political competition is the provision of direct transfers and benefits to individual households, often at the expense of broad public services that benefit many (Keefer and Khemani (2004, 2005)[4]). Citizens or voters have little faith in the credibility of political promises about broad public services. This lead to what one analyst has called a ***governance trap,*** a kind of vicious cycle of low performance, low expectations and limited influence of the public on service providers. Getting out of this trap poses a special challenge.

37. What a political party or coalition wants to deliver depends on what its voting constituency considers most important. Whether teachers teach, doctors attend to patients and public food distribution reaches its intended beneficiaries depends on whether beneficiaries have a 'voice' and can directly influence the behavior of service providers. Information failures contribute to a vicious cycle of low performance and low expectations of broad development outcomes. Government efforts to enact policies that would promote broad development outcomes are difficult for citizens to recognize. Actual improvements, when they occur, are difficult for people to credit government performance. People are more actively engaged in scrambling for private benefits from public resources. This drives them to vote on the basis of caste so "one of their own" occupies decision-making positions.

38. Evidence from other countries (notably Brazil and Uganda) as well as a few initiatives in India (Tamil Nadu) suggests that the way to overcome this "governance trap" is to increase awareness and to stimulate citizen demands and expectations of government. That means collecting and publishing data on development outcomes at the lowest level of elected government—*gram panchayats*. This information would be accompanied by information about government policies and resource allocations. Fiscal grants to *gram panchayats* could be made

[3] See World Bank 2006a, "India Inclusive Growth and Service Delivery: Building on India's Success", Development Policy Review.

[4] Keefer, P. and S. Khemani, 2005. "Democracy, Public Expenditures, and the Poor", World Bank Research Observer, Spring 2005, 20:1-27. Keefer, P. and S. Khemani, 2004. "Why do the Poor Receive Poor Services?" Economic and Political Weekly, February 2004, 39(9): 935-43.

conditional upon the systematic *monitoring* of improvements and detailed scrutiny of why, if and when improvements fail to materialize. If information on development outcomes and state-driven public policies to address these outcomes are made available in a credible manner to citizens on a regular basis, then citizens can compare performance in one political jurisdiction with another and monitor improvements (or lack thereof) over time within a jurisdiction. They are more likely to discern the role of government in promoting development and more willing to participate in and contribute to public resources for development. Such information campaigns might truly effect decentralization of day-to-day monitoring of service providers. They might also encourage citizens to change their behavior on behalf of public interest goals such as public health and be willing to pay for public services.

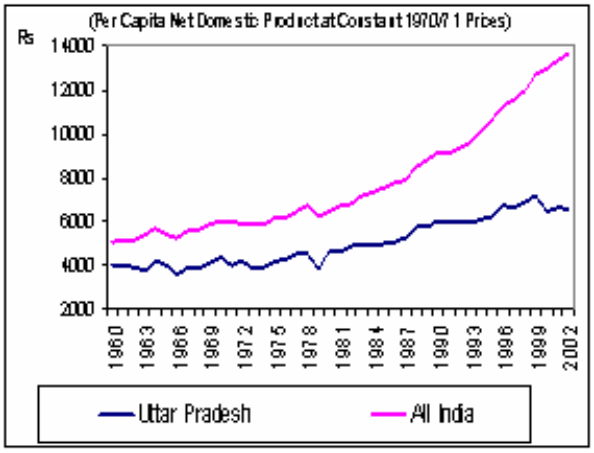
39. State administration could promote healthy competition between GPs to find more innovative ways of generating citizen participation and contributions to improving local services. Collection and dissemination of data on GP-level performance indicators by an independent and credible non-partisan agency would facilitate such competition, and enable the state to take credit for improvements.

CHAPTER 1: ECONOMIC GROWTH AND POVERTY

1.1 Introduction and overview of the report

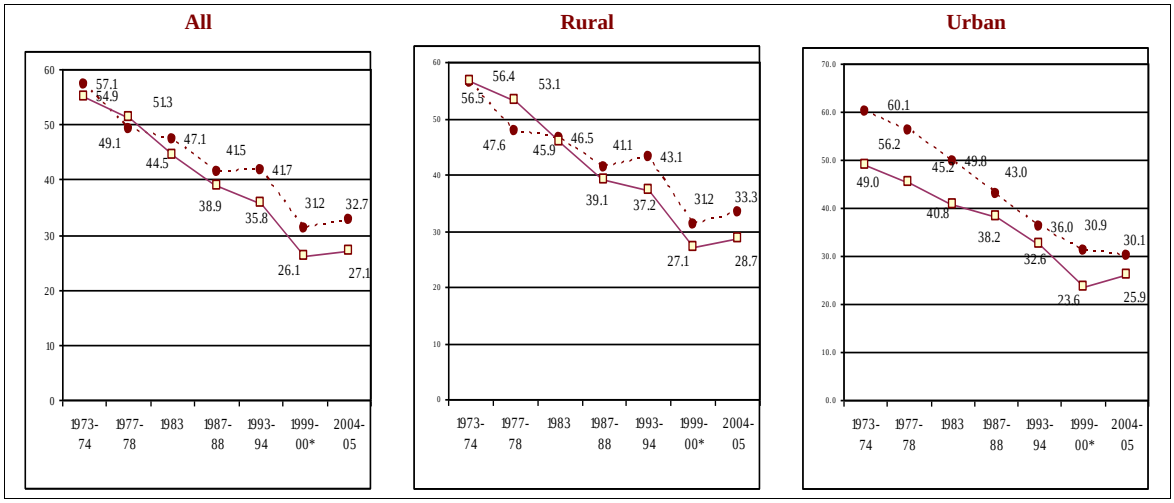
1.1 Uttar Pradesh, the largest state in India, has 170 million inhabitants who represent 16.2 percent of India's population. Uttar Pradesh (UP) is classified as one of the "lagging states of India" for its slow growth, low human development indicators and high concentration of the poor. UP occupies an important position in India because of its size and as a determinant of the country's overall progress. UP has continuously slipped behind India as a whole. In the 1950s, the average per capita income was equal to the rest of the country. By the 1980s, it had declined to one-half the national average and by 2004-05 it had slipped to one-third (figure 1.1). Per-capita income is currently less than US$300.

Figure 1.1: Widening gap between Uttar Pradesh and rest of India



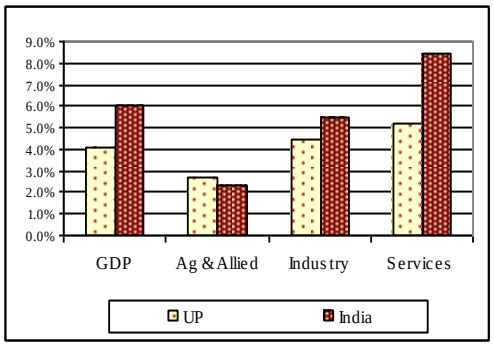
1.2 Growth or the lack of it has a mirror image in poverty trends. In the 1970s, UP's poverty level was almost at the national average and actually came below the all-India level in 1977-78. Poverty climbed again in 1983. Since then, the gap has remained and slightly widened. As a result, poverty levels in UP are higher than the national average (figure 1.2). In the rural areas UP and India started at the same level, then UP showed a sharp decline in the early 1970's because of growth in agriculture due to the green revolution. Thereafter, UP experienced a slowdown in the decline in rural poverty and the poverty rate continues to be higher than the national average. Between 1994 and 2005 poverty in rural areas of UP declined slightly faster than in rural areas nationwide. In urban areas, UP had a much higher urban poverty rate than the country as a whole in the 1970's. Later, the two rates converged; the smallest gap between the two was in 1993-94. Between that time and 2004-05, the urban poverty gap between India and UP widened (figure 1.2).

Figure 1.2: Trends in poverty in Uttar Pradesh and all-India, 1973- 2005 (in percent)



1.3 **Since the 1990s, slow growth in industry and services has been responsible for UP's lag.** Although the state compares favorably with the rest of India in agricultural growth, growth has fallen significantly behind in the manufacturing and service sectors. Both sectors have driven growth in the Indian economy (figure 1.3). As illustrated in Rajan et al. (2006), India's fast-growing states have specialized in skill-intensive industries within manufacturing and/or in services. The slow growth of these sectors stems from declining public sector investment and the state's inability to attract private investment.

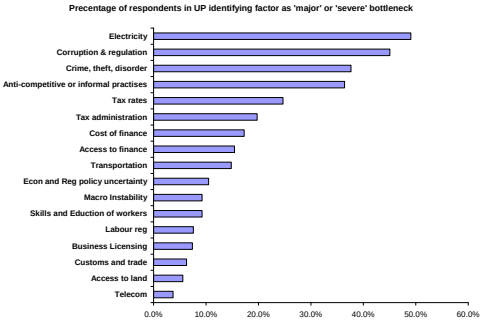
Figure 1.3: Sectoral growth in Uttar Pradesh and India, 1993-94 - 2003-04



1.4 **There are several root causes for UP's low private and public investment and slow growth.** Throughout the 1990s and the first half of the present decade, UP suffered from low and declining levels of public investment as a result of increasing fiscal stress. Only in the last three years has that eased. Private sector investment is constrained by the poor investment climate which is fraught with bottlenecks. The lack of an adequate and affordable infrastructure, particularly electricity, is the single most important obstacle to investment, according to business surveys (box 1.1). While power tops the list**,** demand for roads has mushroomed by 10 percent per annum over the past decade. Meanwhile, the capacity of the road network is stretched thin; conditions are poor and road safety inferior. Almost one-half of UP's towns are without sewerage and at least one-third lack safe drinking water.

Box 1.1: Obstacles for investment climate in Uttar Pradesh

UP's investment climate is burdened with bottlenecks that impede private sector investment and constrain growth and productivity. The major constraints are: infrastructure, governance and business regulation, and law and order. Other major impediments to doing business there are anti-competitive practices, high taxes, the complexities of tax administration as well as the cost and access to credit (see graph below).



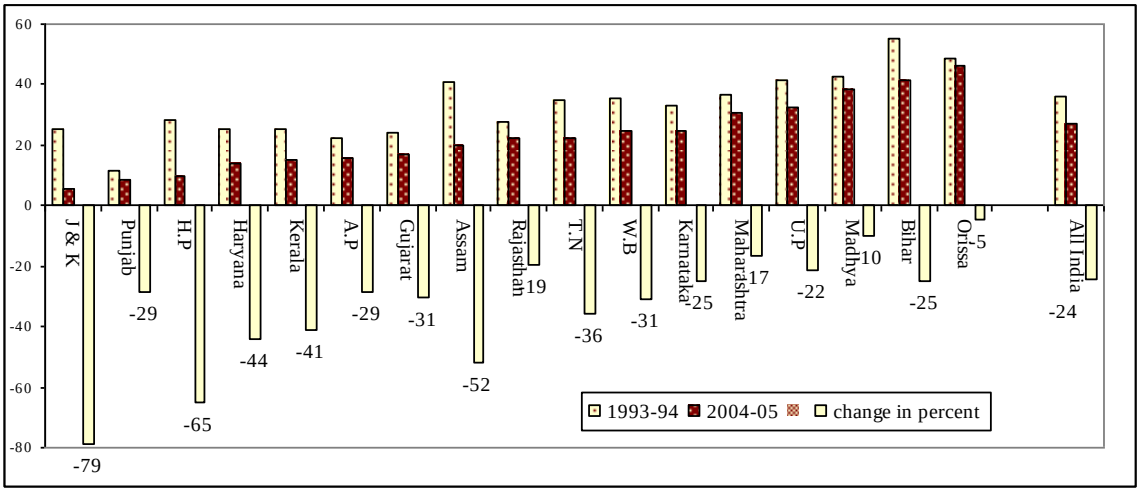
The single most important bottleneck to investment is the lack of electricity. Governance has failed in various ways: by neglecting to enforce basic laws to prevent the theft of power. The sectors have also failed by causing delays in the filing of tariffs to regulators; in addition corporate governance of the utility is poor. In transportation, UP relies predominantly on road transport. UP's road network is among the lowest in the country based on population and density. According to a 2001-02 road condition survey, based on a core network of approximately 7,000 km of UP's road, just 17 per cent of surfaced roads were in good condition. The lack of law and order in UP remains a concern for current entrepreneurs as well as those considering UP as a potential investment destination. Access to financing is also a problem, especially among small and medium enterprises. Objective indicators on the level and quality of UP's infrastructure reinforce the perceptions of private investors. According to an infrastructure index established by the Twelfth Finance Commission (Government of India 2004), UP comes out in the second lowest category, i.e., "Lower Middle".

Source : Unleashing the Industrial Growth Potential of Uttar Pradesh, World Bank 2004

1.5 Between 1993-94 and 2004-05, poverty declined in UP approximately at the same rate as it declined nationally (figure 1.4). UP's slight lagging behind all-India in the pace of poverty decline is because of performance in urban areas. In rural areas, the decline in poverty in UP was faster than it was nationwide (Himanshu 2007). In 2005, UP had the 4th highest poverty level after Orissa, Bihar and Madhya Pradesh (MP), figure 1.4. During the last decade, the absolute number of rural poor in the country declined and the absolute number of urban poor increased (Planning Commission 2007). Similar to the all-India trends, the number of poor in rural areas in UP declined from 49 million 617 thousand to 47 million 300 thousand; in urban areas it increased from 10 million 828 thousand to 11 million 703 thousand. (The absolute number of urban poor also increased in Haryana, Jammu and Kashmir (J&K), Karnataka and Rajasthan. In Orissa and

Maharashtra the absolute number of poor increased overall). In 2005, UP had 19.6 percent of all India's poor. It also had the distinction of having the highest number of India's rural poor (21.4 percent), and the second highest number of urban poor (14.5 percent), after Maharashtra which has 18.1 percent.

Figure 1.4: Trends in headcount poverty across 14 states in India, 1994-2005



1.6 Against this background, this report aims to explain the structural patterns of growth and the reduction in poverty in Uttar Pradesh and to uncover the links among poverty trends, employment patterns and wages, and agricultural performance. The report also examines trends in non-income characteristics of welfare, such as education, health and access to social protection. It tries to link them to institutional and political constraints in the delivery of these essential services. The report focuses on trends in the last decade from 1993-94 to 2004-05 and it aims at presenting a regionally-disaggregated picture of UP. It relies on multiple data sources, especially various rounds of the NSS (Central and State samples) and two rounds of Poverty and Social Monitoring System data (PSMS I and II) collected by the Directorate of Economics and Statistics (DES), UP Department of Planning. It also draws on the "Moving out of Poverty" study which was conducted in UP's villages and towns in 2005-06. That study recorded interviews with many families about how they escape poverty or coped with it.

1.7 The report is organized as follows. It starts with an assessment of trends in growth, poverty, and inequality (Chapter 1). It notes a slower reduction in poverty in urban areas and in the Western and Eastern regions. They stand in sharp contrast to a substantial decline in poverty in rural areas and in the Southern and Central regions. Chapter 2 presents a poverty profile, its non-income dimensions and silent features of the dynamics of poverty. It also notes the above–average reduction in poverty among the SC/ST population. To better understand the underpinnings of growth and reduction in poverty, the report examines patterns of employment, wages and migration patterns in UP (Chapter 3). Among the trends that stand out are: movement of the male labor force away from agriculture (it declined from 74 percent to 62 percent), positive growth in agricultural wages (2.3 percent per annum), and near stagnation in non-agricultural casual wages in rural and urban areas. Given the substantial role that agriculture played in UP's development during the last decade, Chapter 4 focuses on the latent potential of the agricultural sector. This growth, which was higher than India as a whole, shows that improvements in irrigation and agricultural diversification can improve agricultural performance. On the other hand, poor access to markets and lack of transportation can hamper it. Chapters 5 and 6 examine trends, challenges and achievements in education and health indicators. Chapter 7 addresses access to social assistance programs. Chapter 8 presents possible solutions for improving delivery of services.

1.8 A number of highlights focus on special features of UP's economic and social development over the last decade. Highlight 1.1 examines patterns of high growth in the Southern region, especially across the board improvements due to increases in irrigation and agricultural diversification as well as good performance in services, particularly construction. Highlight 2.1 examines the relationship between poverty and employment outcomes of the SC/ST population. Growth in agricultural wages, occupational shifts to self employment in construction and trade raised the incomes of the majority of SC/STs, while improvements in human capital allowed some SC/STs to move to salaried jobs. Highlight 3.1 identifies links between urban development and city size. Annexes present supporting information.

1.2 Trends in poverty and consumption expenditures

1.9 **The poverty rate in UP declined from 41.7 percent of the population in 1993-94 to 32.7 percent in 2004-05.**[5] This nine percentage point change represents a decline of over 20 percent (table 1.1). Poverty in rural areas declined from 43 to 33 percent and from 36 to 30 percent in urban areas. The poverty gap (the average per capita shortfall below the poverty line as a proportion of that line aggregated for all poor) and the squared poverty gap (the average of the individual poverty gaps weighted by the size of those gaps) also declined, although at a slower rate. While the headcount poverty rate in rural areas remained higher than in urban areas, the poverty gap and squared poverty gap were higher in urban areas. This indicates the urban poor face greater income shortfalls.[6]

Table 1.1: Changes in poverty in Uttar Pradesh between 1994 and 2005

	Headcount Rate(P0)			Poverty Gap(P1)			Squared Poverty Gap(P2)		
	1994	2005	change (percentage points)	1994	2005	change (percentage points)	1994	2005	change (percentage points)
Rural	43.1	33.3	-9.8	10.6	6.3	-4.3	3.6	1.8	-1.8
Urban	36.0	30.1	-5.9	9.3	7.1	-2.2	3.4	2.3	-1.0
UP Total	41.7	32.7	-9.1	10.4	6.5	-3.9	3.6	1.9	-1.7

Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample
Note: These numbers are calculated from the record-unit data and are slightly different from the ones published by the National Planning Commission.

1.10 **The Southern and Central regions witnessed a rapid decline in poverty between 1994 and 2005. In comparison, the decline in poverty in the Western and Eastern regions was modest** (table 1.3). These changes affected poverty rankings by region. By 2005, the Eastern region had the highest incidence of poverty, namely 41 percent. That same year, the Southern region, which had the highest poverty rate in 1994, had become the second poorest -- 39 percent of its population was in poverty. The Western region continued to have the lowest poverty rate of 25.1 percent.

1.11 **A number of technical analyses were performed to ascertain the robustness of these estimates. On the whole, the results are reasonably robust, although they represent an**

[5]These headcount poverty rates are calculated on the basis of the "uniform reference period" – URP - which refers to all consumption information collected using a recall period of 30 days. The 1999-2000 NSS 55th quinquennial round questionnaire had a 7-day recall period set side-by-side with 30-day recall period for selected consumption items and 365-day recall period for other consumption items (mostly durables). Headcount poverty rates for this round have been derived based on 30/365-day recall period and called "mixed reference period" consumption estimates. This change in design and in recall period has resulted in non-comparability between the consumption data collected in the 55th round vis. 50th and 61st rounds. A number of researchers in India and worldwide produced various estimates by attempting to correct for the change in survey methodology using a number of different adjustment methods, see Deaton A. and Kozel V., eds "The Great Indian Debate". This report takes a decadal view on changes in poverty and uses 50th and 61st quinquennial rounds data to present estimates based on the URP method.

[6]The severity and depth of poverty declined faster in rural UP as compared to rural India overall. The decline was about the same in urban UP and urban India. According to Himanshu (2007) this was true for a number of states, such as Assam, Bihar and Jharkhand. These states experienced a higher than average rate of poverty and less than the all-India post-1993 GDP growth. In these states, the decline in rural poverty was significant from 1994-2005 -- even though urban areas did not match that progress.

optimistic scenario of UP's reduction in poverty. First, the standard errors of regional headcount poverty estimates in UP show that the changes between 1994 and 2005 are significantly different from zero. However, overlaps do exist in the 95 percent confidence intervals of the 2005 regional point estimates, especially in urban areas. Annex 1 presents these results. Second, a set of alternative estimates of regional headcount poverty rates based on price indexes (Laspeyres and Fisher) derived using an alternative methodology, shows a slower decline in poverty as compared with official estimates. The discrepancy is higher in urban as compared with rural areas. This discrepancy implies that the magnitude of poverty reduction in urban areas could be overestimated to a larger degree compared with rural areas. The official and alternative estimates are closest in the Southern and Eastern regions; they diverge the most in the Western region. Annex 2 presents these results. Third, a set of estimates for 2005 based on the combined State and Central 61st NSS round samples (and official price indexes) shows a slightly faster decline in rural poverty for the Western, Eastern, and Central regions, compared with estimates based on the Central sample alone. In the Southern region, these combined estimates show a significantly faster decline in headcount poverty as compared with estimates from the Central sample alone. Similar estimates could not be derived for 1994 because the State sample for that year was not available. Annex 3 presents these results.

1.12 **The majority of UP's poor live in the Eastern and Western regions**. Although the Eastern and Southern regions of UP had a higher rate of poverty, a substantial share of the poor live in the more prosperous Western region. This region accounts for about 38 percent of the rural population and almost 30 percent of all the poor. Poverty in the Eastern region is particularly high; it accounts for 39 percent of UP's population but 49 percent of its poor. The Central region accounts for 19 percent of UP's population and 16 percent of its poor. Over time, the concentration of poor has increased in the Eastern and Westerns regions and declined in the other two regions. The concentration of poor in urban and rural areas changed very little.

Box 1.2: Four regions of Uttar Pradesh

Uttar Pradesh is currently divided into four economic regions - Western, Central, Eastern, and Southern (Bundelkhand). Western region comprises 27 districts and over 35 percent of UP's population. This region is the most developed economically, with relatively higher urbanization, greater diversification of the economy, better infrastructure, and higher agricultural productivity. In particular, this region contributes almost 50 percent of UP's Net State Domestic Product (NSDP) and even more to the secondary sector. Central region comprises 10 districts, including the capital of Lucknow and the main financial center of Kanpur. It represents about 18 percent of UP's population. It contributes about 18 percent of the NSDP (20 percent of the total production of the tertiary sector). Over a quarter of UP's total urban population resides here. Eastern region comprises 27 districts and over 38 percent of UP's population, but only 20 percent of its urban population. It is also the largest region with more than 29 percent of UP's landmass. The secondary sector is underdeveloped compared to the Western and Central regions, it contributes just slightly more than 20 percent of this sector's total value-added. The region contributes 30 percent of UP's NSDP. Southern region comprises 7 districts and only 5 percent of UP's population. Distant from the Gangelic fertile plains that cover the rest of the state, this region sits on loam and heavy clay.

Four regions of Uttar Pradesh recorded different rates of growth in the last decade. Economic growth has been most rapid in the poorer Southern region which grew at 6 percent per annum, followed by the Central region, which grew at 4.8 percent. Economic growth has been slowest in the Western and Eastern regions (3.2 percent per annum) where most of the population resides. The regional pattern of growth closely mirrors agricultural performance, which has been strongest in the South and weakest in the East (table 1.2)

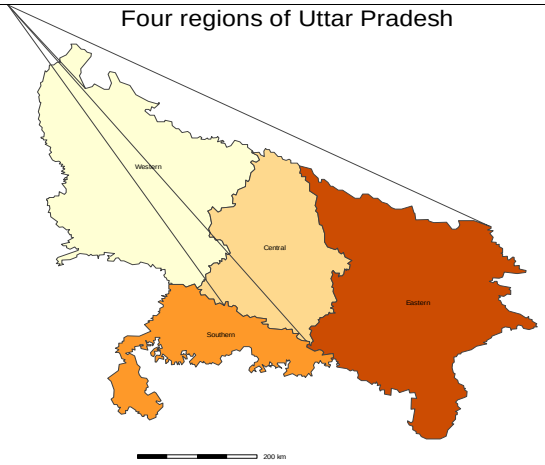


Table 1.2: Regional and sectoral growth in Uttar Pradesh, 1999-00 to 2004-05 (percent per annum, in constant 1993-94 prices)

	Western	Central	Eastern	Southern
Agriculture	1.4	3.0	-1.1	5.6
Industry	3.3	4.3	4.2	2.8
Services	4.6	6.3	6.1	7.6
Total GSDP growth	3.2	4.8	3.2	6.0

Source: Derived from aggregating GSDP data at the district level

1.13 It is useful to quantify the contribution of regional trends and population shifts to the overall reduction in poverty. The analytical tool that allows us to do so is the decomposition of the total change in poverty into the intraregional effect (which measures the contribution of within-region change in poverty to the overall change in poverty) and the regional population shift (which measures how much poverty would have changed if population shifted across regions but poverty within regions remained unchanged), see Ravallion and Huppi (1991) for a description of the methodology.

Table 1.3: Changes in poverty by geographic regions in Uttar Pradesh, 1994-2005 (in percentage points)

	Poverty Headcount Rate			Distribution of the Poor			Distribution of Population		
	1994	2005	change	1994	2005	change	1994	2005	change
Sector									
Rural	43.1	33.3	-9.8	83.3	81.9	-1.4			
Urban	36.0	30.1	-5.9	16.7	18.1	1.4			
Region									
Western	29.8	25.1	-4.7	27.2	28.9	1.7	38.1	37.6	-0.5
Central	46.7	28.8	-17.9	20.7	16.4	-4.3	18.5	18.6	0.1
Eastern	47.5	41.0	-6.6	43.4	48.6	5.2	38.1	38.8	0.6
Southern	68.9	39.8	-29.1	8.7	6.1	-2.6	5.3	5.0	-0.2
Total	41.7	32.7	-9.1	100.0	100.0	0.0	100.0	100.0	0.0
Rural									
Western	29.3	24.1	-5.3	24.0	24.8	0.7	35.4	34.3	-1.1
Central	50.2	30.1	-20.1	21.0	16.1	-5.0	18.1	17.8	-0.3
Eastern	48.8	41.4	-7.4	46.9	53.4	6.5	41.4	43.0	1.6
Southern	67.4	38.9	-28.5	8.0	5.7	-2.3	5.1	4.9	-0.2
Total	43.1	33.3	-9.8	100.0	100.0	0.0	100.0	100.0	0.0
Urban									
Western	31.1	28.0	-3.1	42.7	47.3	4.6	49.5	50.9	1.5
Central	33.9	24.6	-9.2	18.9	18.0	-0.9	20.2	22.0	1.9
Eastern	38.6	37.5	-1.1	26.2	26.7	0.5	24.5	21.5	-3.0
Southern	74.4	43.0	-31.4	12.2	7.9	-4.3	5.9	5.6	-0.4
Total	36.0	30.1	-5.9	100.0	100.0	0.0	100.0	100.0	0.0

Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

1.14 **In terms of regional contributions to the decline in poverty, the largest has come from the Central region.** While it is home to 16 percent of the poor, this region accounted for almost 40 percent of the overall decline in poverty (table 1.4). The Southern region, which houses only six percent of the poor, accounts for 17 percent of the decline in poverty. In contrast, the Eastern region is home to almost 50 percent of all of UP's poor, but it accounts for less than 30 percent of the decline in poverty. Overall, the decomposition shows that the entire change in poverty stems from the intraregional effect. In comparison, the shift in population has been negligible.

1.15 **State-wide regional trends are mirrored in rural but not in urban areas.** The breakdown of regional poverty decomposition into that in rural and in urban areas (table 1.4) shows that trends in rural areas are very similar overall to all-UP trends. In urban areas, the patterns are slightly different. The Southern and Central regions each contributed about two percentage points (or over 30 percent) to the overall decline in urban poverty. This occurred despite the fact that the population in the Southern region is considerably smaller than in other regions. The contribution of the Western region was smaller (26 percent) and yet it accounted for over 50 percent of all of UP's urban population. There was also some contribution from the regional shift effect in urban areas; this accounted for six percent (or 0.33 percentage points) of the poverty reduction in urban areas. This means that if it were not for an increase in the

proportion of the population in urban areas that experienced a faster decline in poverty, the decline in urban poverty would have been lower.

Table 1.4: Regional poverty decomposition in Uttar Pradesh, 1994-2005 (in percent)

	All UP		Rural		Urban	
	absolute change	percentage change	absolute change	percentage change	absolute change	percentage change
Change in poverty (HC)	-9.06	100.00	-9.80	100.00	-5.92	100.00
Total Intraregional effect	-9.13	100.78	-10.03	102.28	-5.51	93.16
Population-shift effect	0.04	-0.46	0.16	-1.67	-0.33	5.53
Interaction effect	0.03	-0.32	0.06	-0.61	-0.08	1.31
Intra-regional effects:						
Western	-1.77	19.59	-1.86	18.95	-1.54	26.05
Central	-3.30	36.48	-3.63	36.98	-1.86	31.37
Eastern	-2.51	27.71	-3.08	31.41	-0.26	4.38
Southern	-1.54	17.01	-1.46	14.94	-1.86	31.36

Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

1.16 A decomposition similar to the regional poverty decomposition performed for categories based on the sector of employment (agriculture, manufacturing, trade and services) of heads of households shows that in rural and urban areas the changes in poverty within employment sectors accounted for nearly all change in poverty (table 1.5). In urban areas a shift in the labor force to occupations with higher returns contributed to a decline in poverty, but was offset by the interaction effect.

Table 1.5: Poverty decomposition by sector of employment in Uttar Pradesh, 1994-2005 (in percent)

	Rural			Urban	
	absolute change	percentage change		absolute change	percentage change
Change in poverty (HC)	-9.81	100.00	Change in poverty (HC)	-5.92	100.00
Total Intra-sectoral effect	-9.74	99.30	Total Intra-sectoral effect	-5.61	94.74
Population-shift effect	-0.25	2.59	Population-shift effect	-1.35	22.79
Interaction effect	0.18	-1.89	Interaction effect	1.04	-17.53
Intra-sectoral effects:			Intra-sectoral effects:		
Agr-self employed	-6.04	61.57	Agr-self employed	-2.11	35.74
Agr-casual labor	-1.73	17.66	Agr-salaried labor	-0.13	2.12
			Agr-casual labor	-0.41	7.01
Manf-self employed	-0.57	5.76	Manf- self employed	0.89	-15.05
Manf- casual labor	-0.26	2.65	Manf- salaried labor	0.34	-5.79
Manf- other	-0.02	0.22	Manf- casual labor	-0.32	5.47
Trade - self employed	-0.22	2.25	Trade- self employed	-1.52	25.66
Trade - casual labor	0.04	-0.40	Trade- casual labor	-0.08	1.35
Servs - self employed	-0.58	5.91	Servs- self employed	-1.86	31.44
Servs - casual labor	-0.13	1.34	Servs-salaried labor	0.52	-8.72

Note: "Other" category in manufacturing includes formal salaried jobs
Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

1.17 **The decline in rural poverty was largely driven by improvements in the agricultural sector.** In rural areas, the self-employed in agriculture (cultivators) brought about over 60 percent of the total decline in poverty. Agricultural laborers were responsible for 18 percent of the overall decline. The manufacturing sector in rural areas was the second most important contributor to a reduction in poverty. This sector accounted for almost six percent of the decline registered among the self-employed and another three percent among casual laborers.

1.18 A slower reduction in urban poverty occurred because of the trends among the self-employed and salaried workers in manufacturing and salaried workers in services. In urban areas, the self-employed in agriculture and in services each accounted for more than one-third of the overall decline in poverty. In urban areas, trends in the manufacturing sector actually pushed up poverty rates. If it weren't for the trends in other sectors, urban poverty would have increased by 15 percent. Within the manufacturing sector, poverty increased among the self-employed and salaried workers. Casual workers experienced a decline in poverty. They contributed over five percent to the overall decline. Casual workers in each of the four sectors contributed to a drop in poverty. Taken together, they accounted for one-third of all of the reduction in poverty in urban areas. What is puzzling is that salaried workers experienced an increase in poverty. That may be explained by inter- and intra- state migration to urban areas. (Chapters 2 and 3 discuss this pattern further).

1.19 **While the incidence of poverty declined faster in rural areas, growth in real per-capita consumption expenditure (PCE) was faster in urban areas.** In other words, growth has had a much stronger impact on poverty in rural compared to urban areas. The relationship between growth and poverty reduction is measured by the growth elasticity of poverty reduction. It was considerably higher in rural as opposed to urban areas. For example, monthly per-capita expenditure (PCE) increased by 11 percent in rural and by 18 percent in urban areas (table 1.6). The headcount poverty rate declined by 23 percent in rural areas and by 16 percent in urban areas. These trends occurred because PCE growth was skewed towards high-percentile households in urban areas, while it was strongly pro-poor in the sense that PCE in the lower percentiles of the distribution grew faster in rural areas. Substantial improvements took place in UP's agricultural sector, including the poorest agricultural workers. In contrast, in urban areas, PCE lagged for the manufacturing sector and in terms of growth in casual wages. Analyses in Chapters 3 and 4 provide further explanations for patterns of strongly pro-poor growth in rural areas.

Table 1.6: Trends in real per-capita consumption expenditures in Uttar Pradesh by geographic regions, 1994-2005

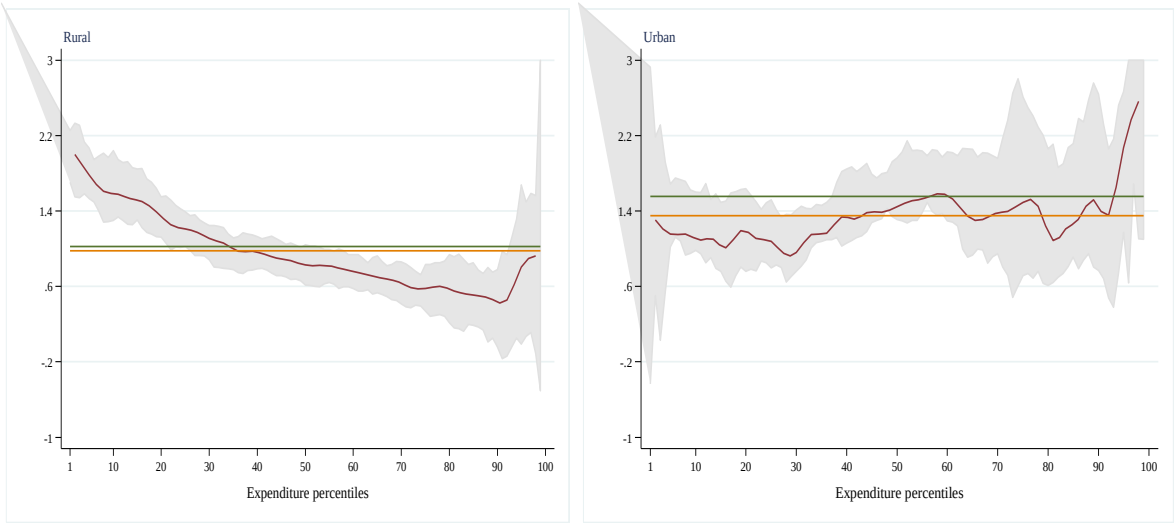
	Rural			Urban		
	1994	2005	change (percent)	1994	2005	change (percent)
Western	323.53	327.81	1.32	435.64	456.47	4.78
Central	239.47	305.74	27.67	356.38	556.82	56.24
Eastern	249.70	277.42	11.10	350.48	384.16	9.61
Southern	198.28	298.89	50.74	232.50	347.67	49.54
UP total	271.31	300.79	10.86	386.80	457.03	18.15

Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

1.20 Figure 1.5 further illustrates the characteristics of growth across urban and rural areas. Growth-incidence curves, which plot the annualized rate of growth at percentiles of the per capita expenditure distribution,[7] show that in rural areas real per capita expenditure increased for all expenditure deciles, but that the increase for the low percentiles was considerably higher than that for the higher percentiles. In fact, up to the 35th percentile of the distribution in rural areas, the PCE grew faster than the average PCE growth while PCE at the higher percentiles grew slower. In urban areas, low percentile households experienced below-average growth. Meanwhile, better-off households in the upper half of the distribution experienced above-average growth in their consumption. These trends illuminate how higher average growth in urban areas resulted in a lower reduction in poverty (reported in tables 1.1. and 1.3).

[7] See Ravallion and Chen (2003).

Figure 1.5: Growth incidence curves for rural and urban areas in Uttar Pradesh, 1994-2005



1.21 Growth-incidence curves for four regions show that patterns of pro-poor growth in rural areas and growth skewed towards the upper part of the distribution in urban areas held across regions. In the Western region, where PCE growth in rural areas was low overall (0.3 per capita per annum), growth at the lower percentiles was still higher than those in the middle. In urban areas, where PCE grew at 0.8 percent per capita per year, the lower percentiles and the 40-70 percentile range experienced the highest growth. In rural areas of the Central region, where PCE grew at 2.3 percent p.a., the second highest of all rural areas in the state, growth was uniformly distributed along the entire distribution. In urban areas of the Central region, which had the highest growth rate of all areas in the state (averaging 4.4 per capita per annum), patterns of growth were "pro-rich." There was a direct relationship between the higher PCE growth rate and initial PCE. In the Eastern region, patterns of rural and urban growth were quite uniform along the respective distributions. In the Southern region, where PCE growth was high in rural areas (3.8 per capita, p.a.) and urban areas (3.5 per capita per annum), PCE growth patterns were pro-poor in rural areas and less so in urban.

Figure 1.6: India Uttar Pradesh, Western region, growth incidence curves for rural and urban areas 1994-2005

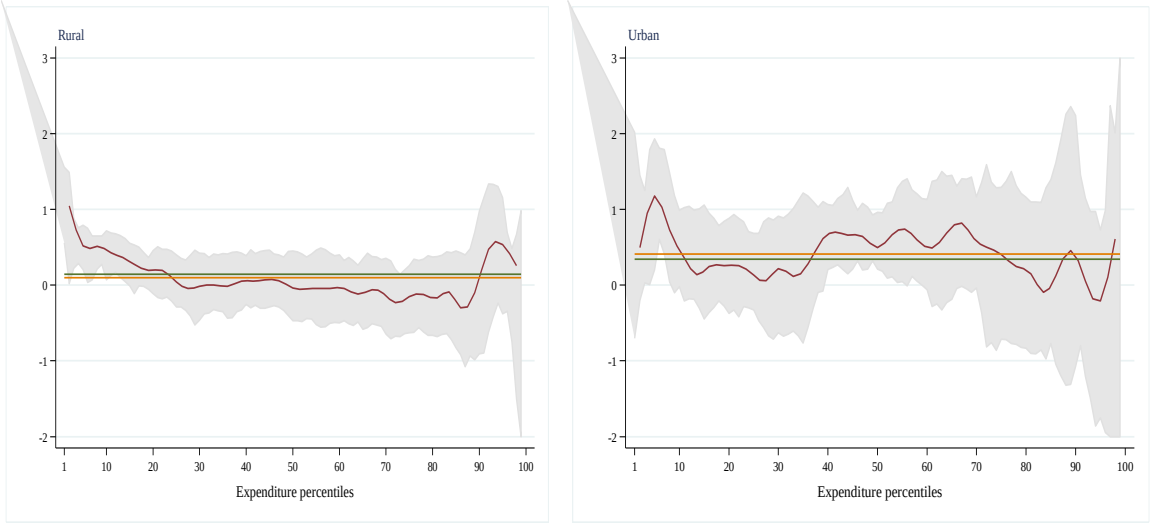


Figure 1.7: India Uttar Pradesh, Central region, growth incidence curves for rural and urban areas 1994-2005

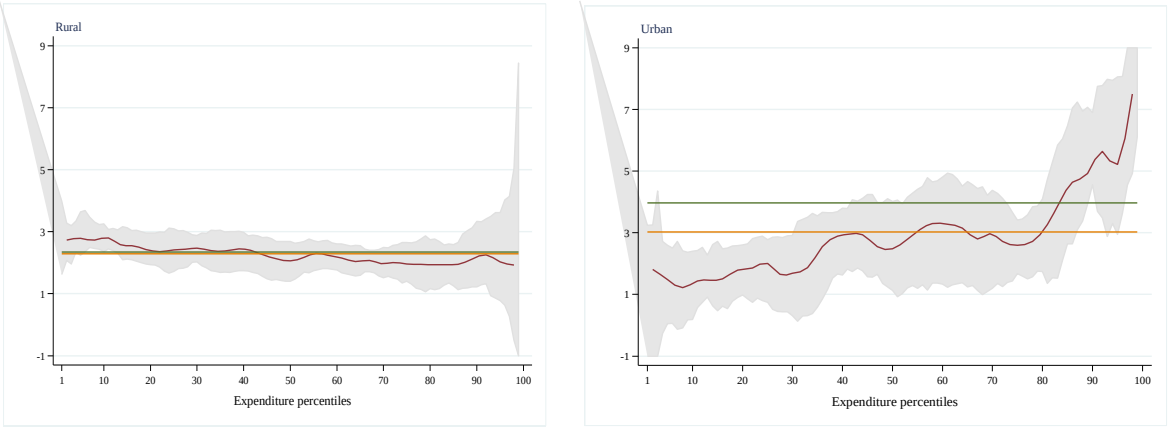


Figure 1.8: India Uttar Pradesh, Eastern region, growth incidence curves for rural and urban areas 1994-2005

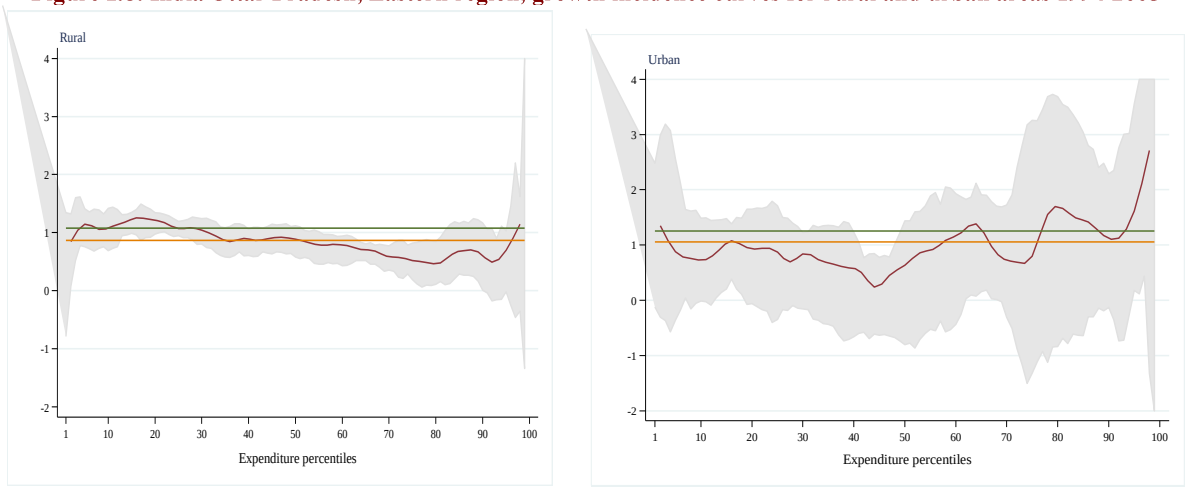
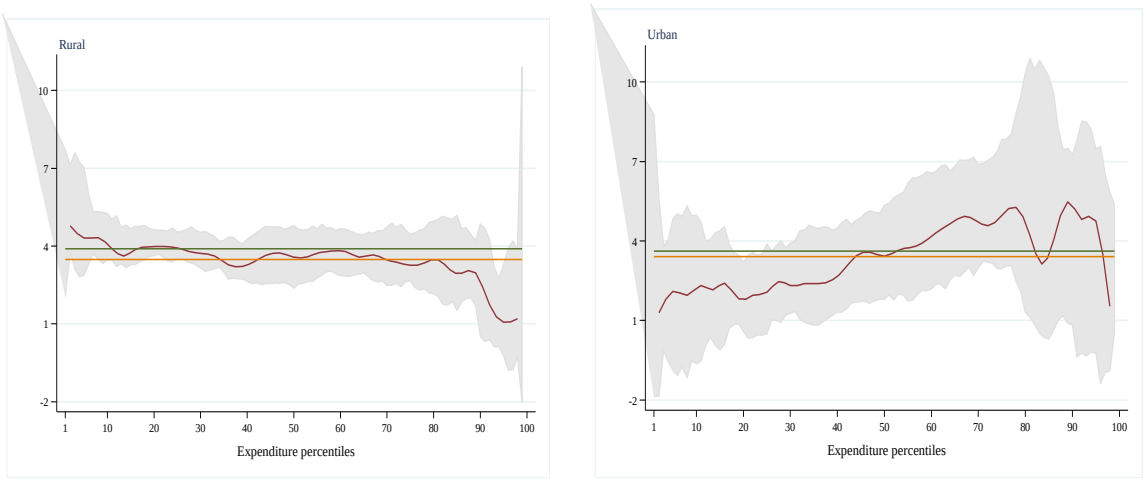


Figure 1.9: India Uttar Pradesh, Southern region, growth incidence curves for rural and urban areas 1994-2005



1.22 Trends of inequality in PCE confirm patterns indicated by growth incidence curves: inequality increased in urban areas and remained unchanged in rural. Measuring inequality with Gini coefficients shows that inequality is higher and increasing in urban as compared to rural areas (table 1.7). In rural areas, inequality declined along the entire distribution. That left the Gini coefficient practically unchanged. In urban areas, inequality declined in the bottom half of the distribution, but it increased in the top half. Inequality between urban and rural areas declined in the lower half of the distribution and increased in the upper portion (table 1.8). These trends

indicate that there is a convergence in income between the poor and the "lower middle class" in urban and rural areas. Meanwhile, high growth consumption among the urban upper middle class and the urban wealthy is outstripping the rest of the state.

Table 1.7: Inequality in per-capita expenditure distribution by urban and rural areas in Uttar Pradesh, 1994-2005

	Bottom half of the distribution		Upper half of the distribution		Interquartile range	Tails	Gini
	p25/p10	p50/p25	p75/p50	p90/p50	p75/p25	p90/p10	
Urban							
1994	1.34	1.42	1.45	2.12	2.06	4.04	32.87
2005	1.28	1.43	1.52	2.35	2.18	4.32	36.76
Rural							
1994	1.28	1.35	1.39	1.94	1.88	3.37	28.64
2005	1.23	1.30	1.35	1.89	1.76	3.02	28.82

Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

Table 1.8: Ratios of selected expenditure percentiles in urban and rural areas in Uttar Pradesh, 1994-2005

	p10	p25	p50	p75	p90
1994	1.24	1.30	1.37	1.43	1.49
2005	1.20	1.25	1.38	1.55	1.72

Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

1.23 Regional patterns of PCE growth and trends in headcount poverty imply that some income convergence across regions has been taking place in rural and urban areas. For example, the initially poorer Southern region grew faster than all other regions that were initially richer. The Central region, which was on a par with the Eastern region in the 1990s, grew considerably faster. The growth rate for the Central region doubled for rural areas and tripled for urban areas. The Central region is now the second wealthiest region in UP. The wealthiest Western region had a PCE that was essentially stagnant during the 11-year period (table 1.6).

HIGHLIGHT 1.1. UNDERSTANDING GROWTH AND POVERTY REDUCTION IN THE SOUTHERN REGION

1.1.1 Exceptionally high growth registered in the Southern region is somewhat surprising given that historically, the Southern or Bundelkhand region has been the most impoverished in UP. Distant from the Gangelic fertile plains that cover the rest of the state, this region sits on loam and heavy clay. It comprises seven districts and just five percent of UP's population. While small landholdings predominate here as well as throughout UP, the share of large landholdings (over 4 ha.) is higher in the Bundelkhand region representing 10 percent of the total. (In comparison, the state average is three percent.) The Bundelkhand region is different from the rest of UP in terms of its agricultural potential; the soil there is less fertile and agriculture depends heavily on canals for irrigation. The section below presents some stylized facts which help explain growth and poverty trends in the Southern region in the last decade.

1.1.2 From 1994 to 2005, the Southern region witnessed considerable acceleration in growth of per capita expenditure (PCE) and a decline in poverty. Overall, PCE in rural UP grew at one percent per annum, compared to growth of 3.8 percent PCE in the Southern region (table 1.1.1). In 1994, rural poverty in the Southern region was nearly 70 percent; by 2005, it had declined by one-third to less than 40 percent. The drop in the poverty rate happened more quickly in the Southern region than in other parts of UP. Similar patterns were also seen in urban areas of the Southern region. Furthermore, this region improved in other ways (e.g., the extent of child labor, table 1.1.1, education outcomes, Chapter 5, etc.). The following section tries to explore the reasons for this decline.

Table 1.1.1: Selected indicators in the Southern region and in Uttar Pradesh overall; 1994-2005

	Rural			Urban		
	1994	2005	change (percent)	1994	2005	change (percent)
Per Capita Expenditure						
Southern region	198.3	298.9	50.7	232.5	347.7	49.5
UP total	271.3	300.8	10.9	386.8	457.0	18.2
Headcount Poverty						
Southern region	67.4	38.9	-28.5	74.4	43.0	-31.4
UP total	43.1	33.3	-9.8	36.0	30.1	-5.9
Child labor (boys 10-15 years of age who work)						
Southern region	17.0	6.3		10.4	1.5	
Total UP	14.1	8.7		11.7	12.3	

Source: Staff calculations based on Schedule 1 and 10 , NSS 50 and NSS 61, Central Sample

1.1.3 Poverty declined across all occupational groups in rural and urban areas. Because of the small sample size in the Southern region, it is possible only to distinguish between households headed by the self-employed and casual workers in rural areas and those headed by self-employed, casual and regular workers in urban areas. Between 1994 and 2005, the headcount poverty rate declined for all groups. In rural areas, it declined from 94 to 59 percent for casual laborers and from 57 to 35 percent for the self-employed. In urban areas, similar declines occurred among the self-employed and salaried workers. In comparison, the pace of the decline in poverty was slower for urban casual workers (table 1.1.2).

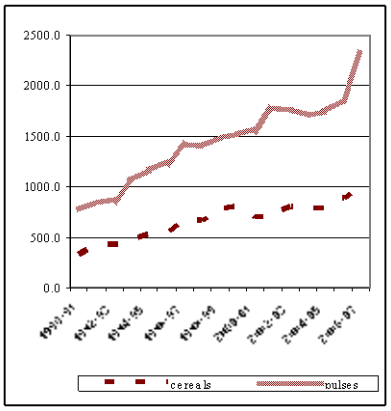
Table 1.1.2:Poverty rate based on occupational status of the head of household in the Southern region of Uttar Pradesh

	1994	2005	change (percent)
Rural			
Ag. self-employed	57.6	34.7	-23.0
Casual workers	94.3	59.0	-35.4
Urban			
Self employed	75.8	48.2	-27.6
Salaried worker	56.7	25.6	-31.1
Casual worker	96.4	86.7	-9.7

Note: Information could not be disaggregated across all categories because of the small number of observations in the cells.

1.1.4 An increase in the relative prices of pulses contributed to improvements in the rural Southern region. In 2005, the overwhelming majority (65 percent) of rural people in that region were self-employed in agriculture. Not surprisingly, their incomes were heavily influenced by agricultural performance. Pulses are an important crop for cultivators in the Southern region and the majority of self-employed in rural areas are cultivators. The main difference in crop patterns between the Southern region and the rest of UP is that pulses take more than one-half of the land during kharif and nearly that amount during the rabi season. During each of these two seasons, pulses represents from one-half to one-quarter of total output. In comparison, cereals and sugar constitute a greater share of crops in other regions (table 1.1.3). From the early 1990s to mid-2000s, the relative price of cereals in India stagnated. In contrast, the relative price of pulses increased appreciably (figure 1.1.1). This upward trend in the price of pulses appears to have contributed to the increased return to agriculture in the Southern region.

Figure **1.1.1**: Index of wholesale prices of pulses and cereals in Uttar Pradesh **(base year 1970-71)=100**



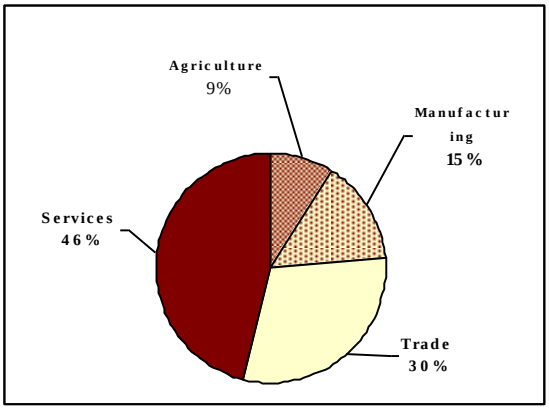
Source: Statistical Abstract Uttar Pradesh (1995,1996, 2000, 2002, 2003, 2007)

Table 1.1.3: Crop-related characteristics across regions of Uttar Pradesh (rural areas)

	Share of land devoted to different crops						Share of total output from different crops					
	Kharif			Rabi			Kharif			Rabi		
	cereals	pulses	sugar crops	cereals	pulses	sugar crops	cereals	pulses	sugar crops	cereals	pulses	sugar crops
Western	56.4	6.4	23.2	98.8	0.1	0.4	12.3	0.6	71.6	26.9	0.3	39.5
Central	68.9	9.8	11.6	71.0	9.9	8.5	26.1	0.5	61.0	35.1	1.6	52.4
Eastern	82.1	3.7	10.2	78.6	12.2	3.3	32.0	0.3	61.5	48.8	7.3	26.0
Southern	34.0	62.2	0.7	53.4	44.2	0.0	41.1	42.0	11.3	74.1	22.6	0.0
Total	66.7	10.5	14.4	96.8	1.4	0.7	18.5	0.7	67.9	34.9	2.9	37.5

1.1.5 The greater availability of irrigation during the rabi season contributed to rising incomes in the rural Southern region. Historically, the share of irrigated land has been high everywhere except the Southern region of UP.[8] That changed with the expansion of canals and well irrigation; overall, this expansion raised the percentage of irrigated land from 60 to 78 percent. The impact of this expansion was even greater on small farmers; the share of irrigated land increased from 48 to 74 percent (table 1.1.4).

Figure 1.1.2: Population distribution based on employment sector of the head of household. Southern region, Uttar Pradesh, urban areas, 2005



1.1.6 Diversification into the raising of livestock also helped improve the incomes of small farmers. Twenty-five percent of small farmers in the Southern region raise livestock as their primary source of income. This percentage is higher than other regions of UP. Diversification away from crops is taking place in UP, mostly among farmers with small plots of land (table 1.1.4). The raising of livestock has yielded better returns for these farmers in comparison to cereals or other grains (see Chapter 4 for more details).

[8] The majority of farmers in the Eastern, Western and Central UP use wells and shallow tube wells for irrigation.

Table 1.1.4: India, Uttar Pradesh, changes in the proportion of irrigated land and the raising of livestock by farm size across regions, 1992-2003

		share of irrigated land out of the total sown area during rabi (dry) season		share of households whose main occupation is raising livestock*	
	farm size	1992	2003	1992	2003
Western	<1 ha	93	97	19	24
	Total Western	94	97	13	19
Eastern	<1 ha	85	90	7	17
	Total Eastern	83	89	6	14
Central	<1 ha	88	90	3	12
	Total Central	86	89	3	10
Southern	<1 ha	48	74	18	25
	Total Southern	60	78	13	15
Total Rural		87	91	7	14

*during agricultural year (kharif, rabi combined)

1.1.7 Casual workers in rural areas of the Southern region experienced a significant decline in poverty; it went from 94 to 59 percent. Casual workers in urban areas, on the other hand, experienced a relatively modest improvement; their rate of poverty dropped from 96 to 85 percent. Trends in male wages, which increased in rural areas and declined in urban areas, help explain these shifts. Rural casual wages cannot be disaggregated into agricultural and non-agricultural groups because the sample sizes are too small, but aggregate numbers show that rural wages, (which have a higher share of agricultural labor) rose 4.7 percent annually. This increase is in stark contrast to trends in urban casual wages which declined overall (table 1.1.5). This decline in urban wages among males is prevalent throughout UP and it stems from the poor performance of urban manufacturing. In comparison, the service sector in the Southern region performed well. Because the urban self-employed tend to concentrate in the service sector (figure 1.1.2), they benefited leading to poverty decline among this group.

Table 1.1.6: Trends in male casual wages. Southern region of Uttar Pradesh, 1994-2005

	1994	2005	change (percent)
Rural	15.5	25.7	66
Urban	31.2	27.3	-13

Note: Information across a large number of categories could not be disaggregated because of the small cell numbers

1.1.8 Although living conditions in the Southern region have improved over the last decade, it remains one of the poorest areas of UP. The poverty rate in the rural Southern region is 39 percent compared to an overall poverty rate of 33 percent in rural UP. Despite improvements in the poverty rate among casual workers, still, almost 60 percent of this group in rural and more than 85 percent in urban areas live in poverty. Low agricultural productivity remains the defining characteristic of the economy there. In fact, small farmers in the rural Southern and Eastern regions have similar rates of poverty and productivity. Net receipts from crops among small farmers in the Southern and Eastern regions are about 50 to 80 percent lower than those in the Central and Western regions, table 1.1.6. (See Chapter 4 for further analysis of the rural economy).

Table 1.1.5: India, Uttar Pradesh, Average receipts, all crops, average values among small farmers (Rs.)

	total receipts	total expenditure	net receipts	net rec. per ha	rural poverty rate (2005)
Western	38,363	19,436	18,927	11,213	25.1
Central	22,395	9,632	12,763	9,199	28.8
Eastern	17,008	8,489	8,518	6,785	41.0
Southern	20,982	8,238	12,744	6,198	39.8

CHAPTER 2: POVERTY PROFILE, NON-INCOME DIMENSIONS OF POVERTY AND POVERTY DYNAMICS[9]

2.1 Knowing the characteristics of the poor helps evidence-based policymaking. A set of such observable correlates of poverty based on employment sector, education, demographic characteristics, and social group helps create a profile of poverty and how it changes over time. There is also a large body of literature that attempts to link poverty with empowerment, voice and aspirations. This chapter draws a profile of poverty according to a definition of the "poor" in terms of per capita expenditures, then it attempts to enrich this description by introducing such characteristics as assets and aspects of empowerment. The latter draws on a "Moving out of poverty" study conducted in 2005-07 by a World Bank team in 11 UP districts. The study focused on understanding the channels of prosperity at the individual and community level. It linked transitions in poverty to such sociological variables as aspirations and empowerment. This study used qualitative and quantitative methods to collect extensive information about individual and community-level correlates of household mobility in and out of poverty.[10]

2.1 Poverty Profile

2.2 A standard profile of poverty tabulates the probability of being in poverty based on background characteristics. The goal is to identify the most vulnerable section of the population. A dynamic poverty profile, as presented in this section, takes it a step further by analyzing changes over time across different households. Such analysis furthers learning about characteristics of vulnerable households and fosters insights into the dynamic process of correlates of the upward and downward mobility.

2.3 **Agricultural wage laborers are the poorest in rural UP; casual laborers in non-agriculture are right behind them.** Between 1994 and 2005, poverty declined faster among households of agricultural laborers than households of non-agricultural casual workers, but the former retained a higher level of poverty (table 2.1). In 1994, the incidence of poverty among agricultural casual workers was more than 66 percent in 1994. In 2005, it was still high at 56 percent, but it had declined 10 percentage points (or 15 percent). This group is declining in proportion. It made up 17 percent of the rural population and 26 percent of the poor in 1994 and 13 percent and 22 percent in 2005. This is the second largest occupational group in rural UP; the self-employed in agriculture are first.

2.4 Casual workers in non-agriculture saw a decline in their rate of poverty rate from 53 percent to 49 percent, a decline 4.4 percentage points (or 8 percent). This group increased in size from five percent of the population to nine percent by absorbing some casual workers who moved away from agriculture. Out of all the casual non-agricultural workers, casual laborers in manufacturing represent a small group (2.2 percent of the rural population). They experienced a decline in poverty from 50 to 37 percent. Poverty among casual laborers in services declined from 57 to 51 percent. The size of this group increased from two to seven percent of the rural population, absorbing those who moved out of agriculture.

[9] This section is based on PSMS-I and II data for 1999-2000 and 2002-2003, respectively.

[10] The study on Uttar Pradesh is part of a multi-country effort, led by Deepa Narayan, to understand the dynamics of poverty. See forthcoming *Moving out of Poverty*.

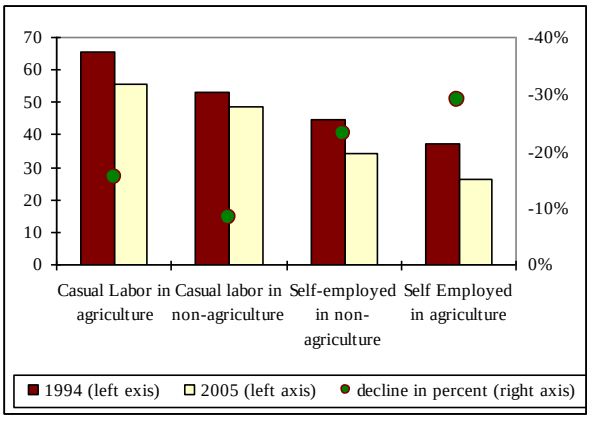
Table 2.1: Headcount poverty rate based on employment sector of the head of household, Uttar Pradesh, rural areas, (1994-2005)

	Poverty Headcount Rate			Distribution of the Poor			Distribution of Population		
	1994	2005	change	1994	2005	change	1994	2005	change
Agriculture									
Self Employed	37.0	26.3	-10.6	48.7	40.0	-8.7	56.8	50.6	-6.2
Casual Labor	65.7	55.7	-10.0	26.4	21.5	-4.9	17.3	12.9	-4.5
Other	40.6	29.4	-11.2	2.6	3.0	0.4	2.8	3.4	0.6
Manufacturing									
Self Employed	49.9	35.5	-14.3	4.6	5.1	0.6	3.9	4.8	0.9
Casual Labor	50.3	37.3	-13.0	2.3	2.5	0.1	2.0	2.2	0.2
Other inc. formal	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Trade									
Self Employed	36.6	31.6	-5.0	3.7	6.6	2.9	4.4	7.0	2.6
Casual Labor	n/a	n/a	n/a	n/a	n/a	n/a	1.5	0.3	-1.2
Other inc. formal	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Services									
Self Employed	49.1	37.1	-12.0	5.5	7.5	2.0	4.8	6.7	1.9
Casual Labor	56.7	50.9	-5.7	3.0	9.7	6.7	2.3	6.4	4.1
Other inc;. formal	17.5	14.4	-3.1	1.3	1.4	0.1	3.3	3.3	0.0
All self employed in non-agriculture	44.7	34.4	-10.4	14.1	20.1	6.0	13.6	19.5	5.9
All casual workers in non-agriculture	53.3	48.9	-4.4	5.9	13.4	7.5	4.8	9.1	4.4
Total	43.1	33.3	-9.8	100.0	100.0	0.0	100.0	100.0	0.0

Note: change is in percentage points
Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

2.5 **The self-employed in agriculture, the largest group in rural UP comprising 50 percent of the rural population, are better-off than households of the self-employed in non-agricultural activities. The self-employed in agriculture experienced the fastest decline in poverty of all groups (figure 2.1).** In 2005, the poverty rate for the self-employed in agriculture was 26 percent, a decline from 37 percent in 1994. In 2005, the self-employed in manufacturing, trade and services had similar poverty rates – in excess of 30 percent. All three groups experienced a decline in their rate of poverty. The self-employed in trade experienced the lowest rate of poverty and the most rapid decline (table 2.1). There has also been a large increase in those engaged in self-employment trade activities. The number went up from one to seven percent of the rural population; see Chapter 3 for further discussion of changes in the workforce employment sector.

Figure 2.1: Headcount poverty in rural Uttar Pradesh: based on occupation status of the household head,1994 and 2005



2.6 **In urban areas in 2005, casual workers had the highest rate of poverty rate, 53 percent, followed by the self-employed at 32 percent and salaried workers at 21 percent. Poverty declined among casual laborers and the self-employed, but it increased among salaried workers.** About nine percent of the urban population lives in households headed by casual workers. Within this group poverty

varied substantially in 2005 -- more than 60 percent for those in agriculture and services to 30-37 percent for those in manufacturing and trade. Poverty declined among all groups of casual workers.

2.7 Self-employed households, the largest group in urban UP, represent more than 50 percent of the population (table 2.2). The poverty rate among the self-employed in urban areas ranges from 37.8 percent for those in manufacturing to 28.8 percent for those in trade. The self-employed experienced an overall decline in poverty. The self-employed in manufacturing were an exception. Their rate of poverty increased by 7.7 percentage points (or 26 percent).

2.8 **An increase in poverty among salaried workers affected those in services, especially those in the manufacturing sector.** In 2005, service sector salaried workers had the lowest rate of poverty, 16.6 percent, Salaried workers in manufacturing were next at 26.1 percent. The poverty rate among manufacturing workers rose by six percentage points. This increase is consistent with the stagnation in male wages for this group (see Chapter 3). The slight increase in poverty among salaried service workers is puzzling because real wages for this group increased substantially (chapter 3). It is conceivable that the increase in poverty among salaried workers is due to migration. In-state migrants from rural to urban areas tend to migrate to take up regular jobs. On average, these migrants tend to be less wealthy and less educated than workers with salaried jobs who already reside in urban areas. This is also consistent with the slight increase in the number of salaried workers in urban areas. (Chapter 3 elaborates on the characteristics of migrants).

Table 2.2: Headcount poverty rate based on employment sector of the head of household, Uttar Pradesh urban areas, 1994-2005

	Poverty Headcount Rate			Distribution of the Poor			Distribution of Population		
	1994	2005	change	1994	2005	change	1994	2005	change
Agriculture									
Self Employed	58.8	31.0	-27.9	12.4	5.1	-7.3	7.6	4.9	-2.6
Salaried Labor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Casual Labor	80.2	66.6	-13.6	6.8	3.1	-3.7	3.0	1.4	-1.6
Other	27.6	22.6	-5.0	3.1	3.5	0.4	4.0	4.6	0.6
Manufacturing									
Self Employed	30.1	37.8	7.7	9.7	14.7	5.0	11.6	11.7	0.2
Salaried Labor	20.0	26.1	6.1	3.1	5.9	2.7	5.6	6.8	1.1
Casual Labor	39.6	30.5	-9.1	3.5	2.2	-1.4	3.2	2.1	-1.1
Trade									
Self Employed	36.2	28.8	-7.4	20.6	21.4	0.8	20.5	22.4	1.9
Salaried Labor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Casual Labor	77.9	35.9	-42.0	0.4	1.1	0.6	0.2	0.9	0.7
Services									
Self Employed	46.5	33.8	-12.7	18.9	15.4	-3.5	14.7	13.7	-0.9
Salaried Labor	14.3	16.6	2.3	8.9	11.6	2.7	22.5	21.1	-1.3
Casual Labor	70.3	55.5	-14.8	10.0	9.7	-0.3	5.1	5.2	0.1
All Self-employed	40.9	32.3	-8.6	61.6	57.5	-4.0	54.3	53.2	-1.2
All Salaried worker	17.6	20.8	3.2	14.7	22.6	7.9	30.1	32.4	2.3
All Casual worker	66.7	53.0	-13.7	20.2	15.9	-4.3	10.9	8.9	-2.0
Total	36.0	30.1	-5.9	100.0	100.0	0.0	100.0	100.0	0.0

Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

2.9 **Poverty declines as education rises**. In rural and urban areas, the highest poverty rate occurs in households where the head of household is illiterate (table 2.3). In rural areas, where nearly one-half of household heads were illiterate, the poverty rate for this group was 41.9 percent in 2005. In urban areas,

where one-third of household heads were illiterate, the poverty rate for this group was even higher at 53.6 percent. Attending but not finishing primary school reduces the probability of being poor to 29.8 percent in rural areas and to 31.7 percent in urban areas. Completing primary school further decreases the probability of being in poverty to 19 percent in rural areas and to 16.2 percent in urban areas. Between 1994 and 2005, steeper decline in poverty occurred among urban households where the head of household had a primary school education. Their poverty rate declined by more than one-half.

2.10 **There are also important and large changes in the distribution of the population across education groups in urban and rural areas. These changes are consistent with migration patterns.** In rural areas, the proportion of the population living in households where the head of it had a secondary education declined from 19 percent to eight percent (third section of table 2.2). This is consistent with migration data which shows an out migration of individuals with a secondary education from rural areas (see Chapter 3). In urban areas, the inflow of out-of-state migrants comes mostly from those with a primary education or less.

Table 2.3: Headcount poverty rate based on the head of household's education level, Uttar Pradesh, 1994-2005

	Poverty Headcount Rate			Distribution of the Poor			Distribution of Population		
	1994	2005	change	1994	2005	change	1994	2005	change
Rural									
Not literate	51.4	41.9	-9.4	69.1	61.1	-8.0	58.0	48.6	-9.4
Below primary	37.7	29.8	-7.9	10.1	31.2	21.1	11.6	34.9	23.4
Primary	34.1	19.0	-15.2	7.6	4.3	-3.4	9.6	7.5	-2.1
Secondary	29.0	12.0	-17.0	12.4	2.8	-9.6	18.5	7.8	-10.7
Graduate	14.5	n/a	n/a	0.8	0.7	-0.1	2.4	1.2	-1.2
Total	43.1	33.3	-9.8	100.0	100.0	0.0	100.0	100.0	0.0
Urban									
Not literate	58.6	53.6	-5.1	55.1	49.8	-5.3	33.9	28.0	-5.9
Below primary	43.6	31.7	-11.9	13.2	36.1	22.9	10.9	34.3	23.4
Primary	49.3	16.2	-33.1	13.0	6.7	-6.3	9.5	12.4	2.9
Secondary	19.0	11.0	-8.0	16.5	7.2	-9.3	31.2	19.7	-11.5
Graduate	5.6	1.1	-4.5	2.3	0.2	-2.1	14.5	5.6	-9.0
Total	36.0	30.1	-5.9	100.0	100.0	0.0	100.0	100.0	0.0

Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

2.11 The poverty rate among female-headed households is slightly higher than that of households headed by males and the difference is greater in urban areas (table 2.4). Female-headed households, which represent about six percent of the total population, tend to be slightly poorer than their male counterparts. Female-headed households are a heterogeneous group. They consist of widows with children, women living alone and households where the main breadwinner has migrated temporarily for work. Among migrant heads of households, the members left behind tend to receive remittances. In 1994 (the most recent date for which data are available), 43 percent of all female-headed households received remittances compared to seven percent of male-headed households. If these trends and patterns continue into the 2000s, it will explain the reduction in poverty among female-headed households and make it comparable to male-headed households.

Table 2.4: Headcount poverty rate based on the gender of the head of household Uttar Pradesh (1994-2005)

	Poverty Headcount Rate			Distribution of the Poor			Distribution of Population		
	1994	2005	change	1994	2005	change	1994	2005	change
Rural									
Male	42.9	33.1	-9.8	94.4	93.4	-1.0	94.9	94.0	-0.9
Female	47.2	36.4	-10.8	5.6	6.6	1.0	5.1	6.0	0.9
Total	43.1	33.3	-9.8	100.0	100.0	0.0	100.0	100.0	0.0
Urban									
Male	35.9	29.9	-6.0	94.9	93.8	-1.1	95.3	94.7	-0.6
Female	39.1	35.0	-4.1	5.1	6.2	1.1	4.7	5.3	0.6
Total	36.0	30.1	-5.9	100.0	100.0	0.0	100.0	100.0	0.0

Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

2.12 The decline in poverty among the SC population has occurred at a faster pace than that of the majority group, especially in urban areas. Historically, caste is believed to be responsible for the majority of inequalities in India. Caste determines the position in society and members of the low caste have faced restricted access to jobs, education, health and other services. In UP, the proportion of Scheduled Caste (SC) is especially large. Caste plays an important role and is the foundation for caste-based political parties. Over the past decade, the poverty rate for the SC group remained higher than that of the rest of the population in rural and urban areas. A very positive development is that the pace of the decline in poverty has been higher among the SC population, especially in urban areas. The rate of headcount poverty among SC groups declined by 15 percentage points in rural and urban areas, (table 2.5). Highlight 1.2 delves into what drove this decline in poverty among the SCs.

Table 2.5: Headcount poverty rate based on the social group of the head of household Uttar Pradesh (1994-2005)

	Poverty Headcount Rate			Distribution of the Poor			Distribution of Population		
	1994	2005	change	1994	2005	change	1994	2005	change
Rural									
Scheduled caste/tribe	59.9	44.5	-15.4	34.4	34.6	0.1	24.8	25.9	1.1
Others	37.6	29.4	-8.2	65.6	65.4	-0.1	75.2	74.1	-1.1
Total	43.1	33.3	-9.8	100.0	100.0	0.0	100.0	100.0	0.0
Urban									
Scheduled caste/tribe	58.5	43.3	-15.3	23.7	20.3	-3.5	14.6	14.1	-0.5
Others	32.2	28.0	-4.2	76.3	79.7	3.5	85.4	85.9	0.5
Total	36.0	30.1	-5.9	100.0	100.0	0.0	100.0	100.0	0.0

Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

2.2. Non-income dimensions of poverty[11]

2.13 **The poor are less likely to live in pucca dwellings than the non-poor.** One of the single most important assets of UP households is typically the dwelling in which they live. Nearly one-half of all dwellings in rural areas and approximately seven eighths of all dwellings in urban UP are of pucca construction material. In rural areas, pucca ownership increased from 33 percent to nearly 50 percent between 2000 and 2003, (table 2.6). This increase was driven by large increases in the overall number of pucca dwellings. In rural communities, the Western region had the highest incidence of pucca material (57 percent). The Eastern region was next with 53 percent. The lowest concentration of pucca dwellings was in the Central region (30 percent) and the Southern region (37 percent). In urban UP in 2003, the

[11]This section focuses on selected assets and access to selected services to create a profile of non-income dimensions of poverty. Two very important non-income indicators of poverty -- education and health outcomes -- are described in Chapters 5 and 6.

prevalence of pucca houses was around 85 percent. This percentage was quite uniform across regions. Similar to trends in rural areas, the use of this building material in residential housing represents a significant increase for the Central and Eastern regions and especially the Southern region. In the urban Southern region, the number of pucca houses nearly doubled from 46 to 85 percent (table 2.6).

Table 2.6: Uttar Pradesh, households with: pucca dwelling (percent)

	1999-2000			2002-2003		
	poor	non-poor	all	poor	non-poor	all
Rural						
Western	37.6	53.5	50.3	43.0	60.0	56.7
Central	11.5	21.2	17.0	19.0	33.2	29.8
Eastern	16.1	32.5	27.3	42.4	57.7	53.2
Southern	11.8	25.2	22.5	20.9	38.3	36.5
All	19.8	38.5	33.0	37.9	53.0	49.3
Urban						
Western	67.5	86.0	81.0	73.3	91.0	86.3
Central	45.2	74.4	66.2	56.0	89.9	84.2
Eastern	50.4	75.8	70.3	78.6	95.0	89.7
Southern	22.3	61.9	45.7	61.1	91.8	85.3
All	55.4	80	73.4	71.4	91.5	86.4

Source: UP DES staff calculations from PSMS I and II

with electrical connection(percent)

	1999-2000			2002-2003		
	poor	non-poor	all	poor	non-poor	all
Rural						
Western	28.2	35.2	33.8	20.7	34.0	31.4
Central	11.2	17.8	15.0	5.8	13.3	11.5
Eastern	13.7	31.7	26.0	9.8	28.6	23.1
Southern	31.0	34.3	33.6	2.6	11.2	10.3
All	16.9	31.1	26.9	12.1	26.9	23.3
Urban						
Western	72.1	90.3	85.4	61.7	85.5	79.2
Central	64.0	89.1	82.0	56.7	89.4	83.9
Eastern	67.8	85.3	81.5	60.2	90.5	80.7
Southern	53.1	77.9	67.8	52.6	90.4	82.4
All	67.8	88.3	82.9	60.1	87.7	80.7

Source: UP DES staff calculations from PSMS I and II

2.14 Overall trends in ownership of pucca housing are similar to trends in income poverty. They provide an additional validation to the observed monetary trends. The poor are less likely to own pucca houses than the non-poor. The highest disparity in ownership occurs in regions with the lowest incidence of pucca housing. Improvements in ownership were recorded for the poor and non-poor.

2.15 **Access to electricity connections and poverty are interrelated, especially in rural areas. The largest gap in access to electricity occurs in the rural Southern region. Overall, access to electricity is lowest there.** In rural areas of UP, only one out of every four houses had a connection in 2003 (table 2.6). That was worse than in 2000. Electrical connections are important for productivity and also for the educational activities of children and adults. In the rural Southern region, the decline in the availability of electrical connections was extremely steep. It dropped from 33 percent to 10 percent. The greatest access in rural areas is in the Western region (30 percent have access). It drops to 23 percent in the Eastern region and to slightly over 10 percent in the Central and Southern regions. In urban areas, there is less variation in the availability of electrical connections. Approximately 80 percent have access in all regions. Access to electricity declined in urban areas mostly on the account of the decline in the Western region. Access in the urban areas of Southern region increased. Differences in access between poor and non-poor are very pronounced in rural and urban areas.

2.16 **Overall, in rural areas of UP, two out of every six households are not connected to a drain. These numbers have changed very little since the year 2000** (table 2.7). Access to water and sanitation are also key indicators of the standard of living. They have a direct relationship to health, especially children's health, nutrition and children's survival. Malnutrition is quite acute in UP. Forty-six percent of children are stunted (they are too short for their age) and 47 percent are underweight (too thin for their age), see Chapter 6 for further discussion of nutrition outcomes. Improvements in water and sanitation could improve children's nutrition outcomes considerably. The rural Western region stands out with almost 90 percent of households having a drain connection (table 2.7). The lowest rate of drain connection is in the rural Eastern region. Slightly more than 40 percent of all households are connected to drains there. In urban areas of UP, the situation is better and more than 90 percent of households have connections. Coverage in the Western and Central regions is nearly universal (95-97 percent) and is around 85 percent in the Eastern and Southern regions.

Table 2.7: Households with: connected to covered/open drains

	1999-2000			2002-2003		
	poor	non-poor	all	poor	non-poor	all
Rural						
Western	83.4	88.5	87.5	90.6	89.8	89.9
Central	46.4	56.0	51.9	61.1	61.7	61.6
Eastern	42.1	53.6	49.9	35.4	43.6	41.2
Southern	59.7	54.0	55.2	21.4	57.2	53.4
All	53.5	67.5	63.4	55.9	65.0	62.8
Urban						
Western	98.8	98.6	98.6	94.9	97.8	97.0
Central	91.1	94.3	93.4	90.5	96.7	95.6
Eastern	77.5	82.3	81.3	73.7	88.7	83.9
Southern	57.8	86.8	75.0	81.0	89.2	87.4
All	89.9	93.3	92.4	88.2	95.4	93.6

Source: UP DES staff calculations from PSMS I and II

with flush latrine /septic tank on their premises

	1999-2000			2002-2003		
	poor	non-poor	all	poor	non-poor	all
Rural						
Western	4.9	13.9	12.1	5.9	16.1	14.1
Central	5.3	8.5	7.1	5.0	8.8	7.9
Eastern	2.0	8.9	6.7	1.9	8.9	6.9
Southern	7.6	17.1	15.2	0.0	10.1	9.0
All	3.8	11.2	9.0	3.6	11.7	9.7
Urban						
Western	29.3	69.6	58.9	35.6	75.5	64.9
Central	28.7	70.1	58.4	29.6	71.1	64.1
Eastern	34.1	73.3	64.8	37.3	76.3	63.6
Southern	35.3	59.9	49.8	28.0	79.1	68.3
All	30.5	70.2	59.6	34.7	74.8	64.6

Source: UP DES staff calculations from PSMS I and II

2.17 **Access to private latrines is extremely low in rural UP. Less than 10 percent have access. In urban UP, 65 percent of households have access. However, the remainder of those without access to latrines in urban areas pose a public health hazard.** Access to latrines is an important aspect of public health and hygiene. In the absence of private or communal latrines, public defecation becomes a norm with severe adverse consequences to public health. In rural areas, flush latrines and septic tanks are extremely rare. Even in the Western region, only 14 percent of households have latrines or septic tanks (table 2.7). In other regions, the number is less than 10 percent and there is no evidence that that will increase. In urban UP, access is higher and there is little variation across regions. Two thirds of houses have a latrine or septic tank. There are indications of some increase in coverage in those areas. The presence of toilets in houses is highly correlated with poverty. As income increases, the demand for improvements in hygiene should go up along with it.

2.18 **In UP, the ownership of motorcycles and scooters is low but increasing,** table 2.8. In rural areas, eight percent of households own a motorcycle/scooter. In Western UP ownership is twice as high as the rest of the state. In rural Western UP, the difference in ownership based on poverty status is small (11 percent of the poor and 13 percent of the non-poor). Meanwhile, other rural areas show large differences in ownership. In urban UP, ownership of motorcycle/scooters ranges from one-quarter in the Western region to one-third in the Central region. In urban areas, ownership of motorcycle/scooters is clearly an attribute of an increase in wealth. The difference in the probability of ownership is tenfold -- 35 percent among the urban non poor and four percent among the urban poor.

2.19 **The emergency sale of assets has been a coping strategy by six percent of rural households and three percent of urban households. Overall, this strategy has been declining, especially in the Southern region, but it has increased in rural Eastern and urban Western regions.** Various types of consumer durables and assets owned by households are not only functional items, but they are also an important source of wealth that can be liquidated in times of distress. The emergency sale of assets is often used when financial markets are underdeveloped and don't allow borrowing at a very high rate of interest. In UP, emergency sales are higher in rural as compared with urban areas. This may reflect better developed financial markets in urban areas and higher income overall. The decline in emergency sale of assets is seen as an improvement in the capacity of households to manage risk. Also noteworthy, the decline in emergency sales occurred in the Southern region where poverty declined the most. The rise in emergency sales occurred in the Eastern and Western regions where the decline in poverty has been the slowest.

Table 2.8: Households owning motorcycle/scooter

	1999-2000			2002-2003		
	poor	non-poor	all	poor	non-poor	all
Rural						
Western	2.1	6.9	5.9	11.0	13.2	12.7
Central	1.3	6.4	4.2	1.5	5.3	4.4
Eastern	1.7	6.7	5.1	1.5	8.7	6.6
Southern	9.1	8.9	8.9	0.0	6.5	5.8
All	1.9	6.8	5.4	4.3	9.6	8.3
Urban						
Western	2.7	24.2	18.5	4.4	30.3	23.4
Central	3.1	26.8	20.2	3.3	39.0	33.0
Eastern	5.9	27.6	22.9	3.0	38.9	27.2
Southern	1.8	22.5	14.0	0.0	37.5	29.6
All	3.3	25.6	19.6	3.6	34.5	26.7

Source: UP DES staff calculations from PSMS I and II

reporting emergency sale of assets

1999-2000			2002-2003		
poor	non-poor	all	poor	non-poor	all
5.7	5.9	5.8	4.1	4.4	4.3
10.2	5.4	7.5	7.2	7.6	7.5
3.4	4.3	4.0	5.3	5.0	5.1
26.6	11.9	14.9	8.1	11.8	11.4
6.6	5.5	5.8	5.4	5.6	5.6
4.1	2.6	3.0	4.6	3.2	3.6
3.0	2.8	2.9	5.4	1.8	2.4
6.7	4.3	4.8	2.3	2.0	2.1
1.7	4.1	3.1	0.1	1.3	1.1
4.1	3.1	3.4	3.9	2.5	2.9

Source: UP DES staff calculations from PSMS I and II

2.3 Measuring and understanding the dynamics of poverty[12]

2.20 Concern over the multiple dimensions of poverty has prompted the search for a framework that goes beyond the definition and measurement of poverty in income or expenditure space alone.[13] Furthermore, researchers recognized that poverty, no matter how it is measured or defined, is not static but a dynamic phenomenon. They have collected longitudinal data to capture transitions in household income so as to ascertain the correlates and pathways of these transitions. This line of research has led to a better identification of chronic poverty and to an understanding of and the coping mechanisms of the poor and how they deal with financial setbacks.

2.21 A recent study called, "Moving out of Poverty: Uttar Pradesh," focused on measuring the dynamics of poverty and understanding it at the individual and community level. It also linked transitions in poverty to aspirations and empowerment. A World Bank team conducted this study in 2005-07 in 11 UP districts. The team used qualitative and quantitative methods to collect extensive *retrospective* information about individual and community-level correlates of households' mobility in and out of poverty (box 2.1). The study did not gather longitudinal data which would have allowed for modeling income transitions based on objectively-measured indicators. The Moving out of Poverty (MOP) study mitigated against the causality in retrospective data by adopting a community definition of the poor called the *Community Poverty Line* (CPL). This approach was different from relying on a self-assessment by respondents who are poor.

[12] This section draws heavily on the "Moving out of Poverty: Uttar Pradesh" study.
[13] The work of Amartya Sen on the notion of capabilities and functionings is most seminal.

Box 2.1: Moving out of Poverty study

The ***Moving out of Poverty*** (MOP) study seeks to understand the dynamics of poverty reduction. The study adopts an agency-opportunity structure framework (Narayan 2005). It looks at households as embedded in groups, in communities, and in states. This approach is distinct from traditional poverty assessments that have until recently focused primarily on individual characteristics. This study relates individual experiences of mobility to the local context, to explore what community characteristics make it easy or difficult for individuals to move out of poverty.

A multi-stage purposive sampling selected rural villages in different contexts – in low and high growth areas and with low and high concentrations of SCs and STs in the state. Variation in growth rates were built into the first stage of sampling. Eleven districts in UP were chosen on a pro-rata basis, based on their relative ranking along two proxies for growth – the condition of the district's infrastructure as indicated by the Centre for Monitoring Indian Economy (CMIE)'s infrastructure development index (2000) and growth in real wages between 1987-88 and 1999-00. Geographical spread was also a consideration. While not strictly representative of rural realities in U.P, the sampled districts varied significantly in the proportion of people below the poverty line for the results of the study to apply to an entire population. At the second stage of the sample, blocks within the chosen districts were divided into quartiles. As a proxy for growth, the quartiles were based on the proportionate relationship between the irrigated area and the total reported area and the proportion of SC/ST population in the block compared to the total population. Three blocks that represented the highest and lowest of these dimensions were randomly selected from each district. Finally, three to four villages within each block were chosen at random. As a result in the summer of 2005 the team visited a total sample of 11 districts, 33 blocks and 110 rural communities across UP. In each village, collection teams fielded a rich mix of qualitative and quantitative data. The qualitative tools drew on people's life stories and community discussions to increase understanding of the "hows and whys", processes, sequencing and interactions that individuals used to move out of poverty and to support their access of new opportunities. The discussions were different from other subjective literature in that they elicited information about individuals and their well-being as well as information about their communities.

The quantitative tools used for the study (a household and community level questionnaire) adopted an "economics-plus" approach. It integrated information from households and communities on membership in groups and networks (social capital), political participation, exposure to crime and violence and aspirations in addition to the usual demographic and economic variables.
The reference period for all instruments was 2005 (when the data collection began) and 10 years prior to that (1995).

Adopted from World Bank (2007) "Moving out of Poverty: Uttar Pradesh"

2.22 **Based on a CPL, 59.4 percent of households were classified as poor in 2005 compared to 66.7 percent retrospectively classified as poor in 1995. The 7.3 percentage point increase in poverty is a result of upward mobility by 12.8 percent of households and downward mobility by 5.5 percent of households,** table 2.9. The estimates of poverty unveiled by the MOP for 1995 and 2005 are higher than the official poverty rate based on the official poverty threshold in the MOP sample and NSS surveys. That is because the majority of communities set a higher benchmark for the poverty line, compared to the official definition.

Table 2.9: Poverty dynamics between 1995 and 2005 in sampled villages in Uttar Pradesh (percent)

Movers	12.8
Fallers	5.5
Chronic poor	54.0
Chronic rich	27.7

Source: "Moving out of Poverty: Uttar Pradesh"

2.23 **The scheduled castes experienced the same rate of upward mobility as the general population. However, because their starting point was lower, a higher share of them remained stuck in chronic poverty,** table 2.10. The OBC and especially Muslim households were more apt to escape poverty than the general population or the SC group. The latter were able to do so because most Muslim households classified as movers had a family member who had migrated to foreign shores such as the Middle East. Most of their stories revolved around one specific trigger to upward mobility -- remittances.[14]

Table 2.10: Poverty dynamics across different social groups in Uttar Pradesh (percent)

	General	SC	OBC	Muslims
Mover	35.3	32.7	37.4	45.3
Faller	11.8	12.9	11	11.7
Chronic rich	36.9	16.1	29.9	22.7
Chronic poor	16	38.3	21.7	20.3
Total	100	100	100	100

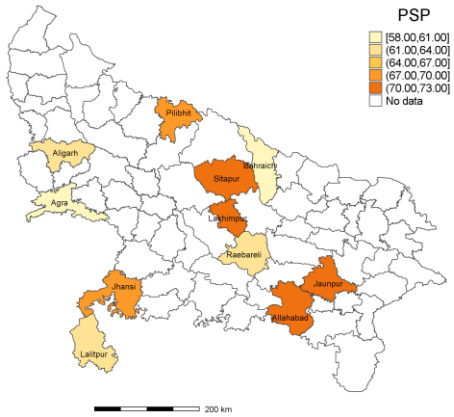
Source: "Moving out of Poverty: Uttar Pradesh"

[14] A Muslim sub-sample could not be analyzed further because the overall number of respondents was too few (128 households out of a total sample of 1635 households).

Figure 2.2: Indicators of CLP poverty and income mobility by the district in Uttar Pradesh

Percentage starting poor (PSP)

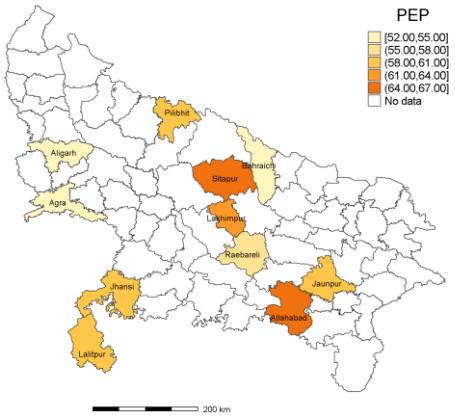
Movers plus chronic poor divided by total number of households



Source: "Uttar Pradesh: Moving out of Poverty" World Bank 2007

Percentage ending poor (PEP)

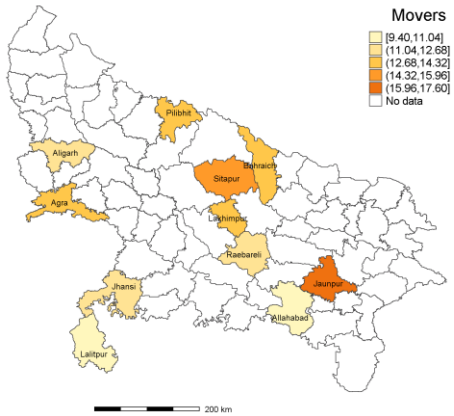
Chronic poor plus fallers divided by total number of households



Source: "Uttar Pradesh: Moving out of Poverty" World Bank 2007

Movers

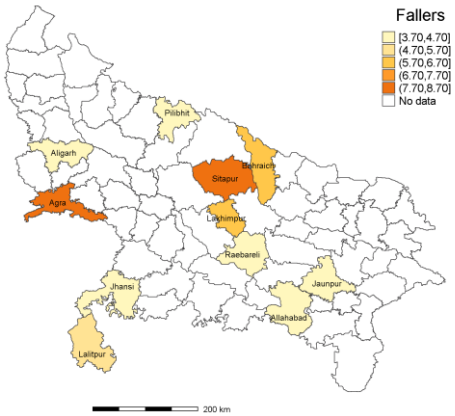
Movers crossing CPL divided by total number of households



Source: "Uttar Pradesh: Moving out of Poverty" World Bank 2007

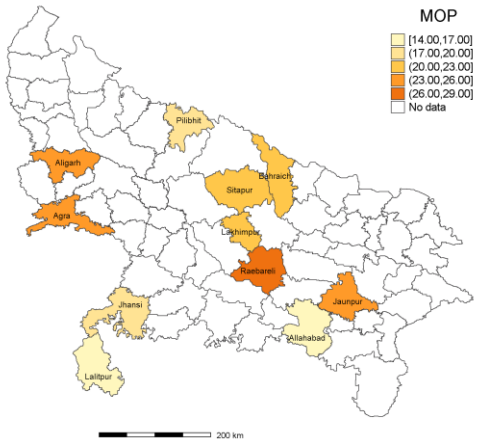
Fallers

Fallers crossing CPL divided by total number of households



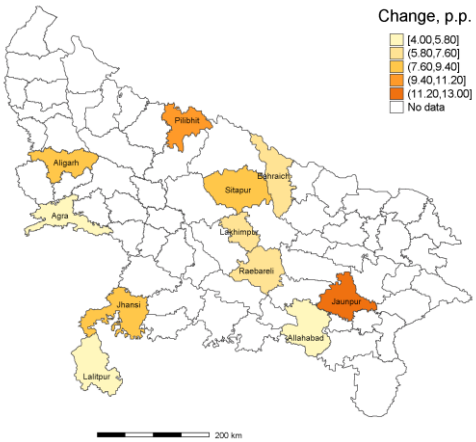
Source: "Uttar Pradesh: Moving out of Poverty" World Bank 2007

Moving out of poverty index (MOP)



Source: "Uttar Pradesh: Moving out of Poverty" World Bank 2007

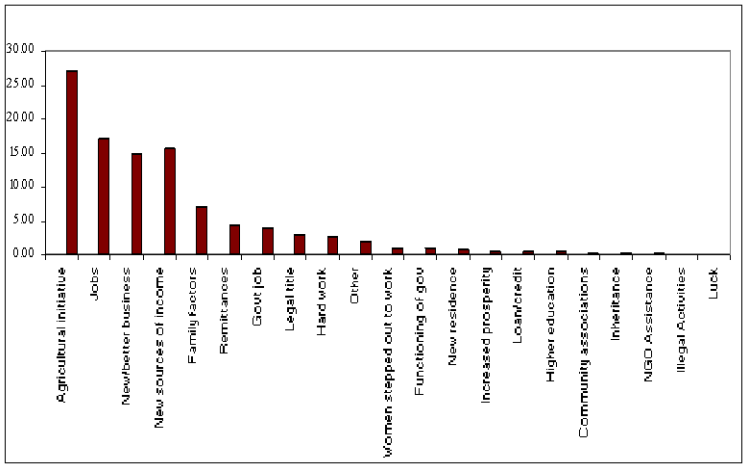
Change in poverty



Source: "Uttar Pradesh: Moving out of Poverty" World Bank 2007

2.24 **The single highest Moving out of Poverty (MOP) index calculated as the number of movers crossing the CPL poverty line divided by the total number of households poor ten years ago is in the Raebareli district in the central region,** figure 2.2. The proportion of upwardly mobile households is higher than the average in two districts of the central region (Sitapur and Lakhimpur) as well as in the Jaunpur district of the eastern region. Interestingly, the proportion of downwardly mobile households ("fallers") is also higher in the same or close-by districts in the Central and Eastern region. The MOP index is generally higher in the districts of the Western and Eastern regions, but the highest MOP index is in the Raebareli district in the central region, figure 2.2. The decline in poverty is also generally higher in the districts of western and eastern regions, but Jhansi region located in the southern region also experienced above the average decline in poverty.

Figure 2.3: Self reported reasons for upward movement by movers in Uttar Pradesh



2.25 **Based on an analysis of quantitative data and qualitative interviews, community-level correlates for moving out of poverty reveal the following.**

- Living in more prosperous communities is significantly associated with a population's ability to move up and out of poverty. Public infrastructure, particularly roads and bridges, is the single most important trigger to open up new economic opportunities for an area (box 2.2). Villagers also report significant benefits from irrigation schemes. However, who gains and who loses within communities is influenced by a combination of "agency" and "structural factors". These include the social context/caste mix and institutions such as local democracy.
- What helps the poor is the effectiveness of the local democracy – its voice, accountability and resistance to corruption. Not everyone benefits equally from local democracies. However, evidence suggests that the democratic process could become a channel to redistribute public goods along the lines of caste or religion. Free and fair voting and access to information provide a climate for ensuring that local democracies work for the benefit of all.
- Open access to the law and to the market is a significant predictor of mobility.

Box 2.2: Villagers talk about the benefits of roads and the drawbacks associated with a lack of connectivity in Uttar Pradesh

Roads are associated with helping people take the initiative. Improved connectivity through roads helped break the hold of the social elite. As economic opportunities expanded at the bottom, small farmers benefited also and patron-client relations became less important for survival. In contrast, bad roads posed a major hurdle for individual initiative.

A women's group in the village of Khamouna in the Sitapur district elaborated on how roads within the village helped farmers connect to markets. "With the construction of khadanjas (brick roads) in the village, the people have benefited greatly. Commuting has become much easier. Earlier, it was very difficult for the farmers to transport their sugarcane to the Sugar Mills. Now it has become much easier as they do not have to make many rounds up to the mills."

Respondents in Parol, Lalitpur, where little road construction or maintenance has taken place, compared themselves to "a frog in the well." Key informants reported: "The road is completely damaged. The villagers have become detached from all the facilities. They cannot take a patient to the hospital. If one has to go and sell his goods at the market, then he has to carry the bicycle and walk on foot to cross the road."
Source: "Moving out of Poverty: Uttar Pradesh"

2.26 A counterintuitive finding is that collective action and participation in community decision making have a negative association with MOP at the community level. An increase in collective action and participation in decision making are associated with a *decrease* in the chances of a community's moving out of poverty. That may be because the poor have a tendency to come together in communities

where moving out of poverty is low. Perhaps collective action is the sole recourse for the poor when all else fails. Other counterintuitive findings include a positive association between school inequality and social divisiveness. These tend to enhance rather than hinder moving out of poverty.

2.27 Poverty reduction schemes by the government (Indira Awas Yojna, the Ambedkar village scheme, the Sampoorna Grameen Yojna, etc) seem to have had only a limited beneficial effect across districts. There was scant mention of them as the main trigger for improved prosperity. However, it is possible that they served as safety nets which prevented people from falling into poverty.

2.28 **Among upwardly mobile households, the most important individual-level contribution to improvements in their status was initiatives leading to improved farming.** Twenty-eight percent of movers cited the following inputs: irrigation, diversification of crops, efforts to improve yields and productivity, and cultivation of other crops. Commercial farming, particularly sugarcane and peppermint, is also associated with increased likelihood of moving out of poverty. Use of hybrid seeds, fertilizer, and other productivity-enhancing agricultural initiatives have also helped households to prosper. Work opportunities because of new jobs and better wages were the second most important reason for upward mobility. Establishing a new non-agricultural business or improving it came in third (figure 2.3). These patterns are consistent with findings from NSS surveys reported in Chapters 4 (performance of agriculture) and in Chapter 3 (employment and wages). The latter shows that casual wages increased and non-farm opportunities expanded.

2.29 Interviews underscored the continuing predominance of agriculture in UP's rural life. Even those movers with non-farm sources of income remained engaged in cultivation. They used their savings from businesses to invest in land or other means that could improve their agricultural yield. In areas where agricultural opportunities were limited, people migrated or took odd jobs early in their lives. Savings from these activities financed subsequent purchases of agricultural assets like land. However, in districts specializing in commercial crops, such as Sitapur and Lakhimpur Kheri, people remained invested in agriculture. They invested in their farms gradually. New sources of income like small businesses were only used to support the primary activity i.e. agriculture.

2.30 Most mover households cite their individual initiative i.e. their self-confidence, their drive to do well and their expectations of a better future as significant factors in helping them move out of poverty. Self-confidence and aspirations were higher for those who were successful in escaping poverty than the chronic poor.[15] [16] More than 90 percent of movers across caste categories say they are very optimistic about their children's future 10 years from now, compared to about 60 percent of the chronic poor, table 2.11. This means that success reinforces higher aspirations. There is no major difference in aspirations between the movers and the chronic poor based on caste. This indicates that the poor, particularly the SCs, are not "poor" because they lack aspirations to do well.[17]

Table 2.11: Expect their children to be better off 10 years from now in Uttar Pradesh (percent within each caste group)

	General	SC	OBC	Muslims	Total
Movers	91.7	92.6	93.1	94.8	92.7
Chronic Poor	67.3	62.2	65.2	61.5	64.5

Source: "Moving out of Poverty: Uttar Pradesh", World Bank 2007

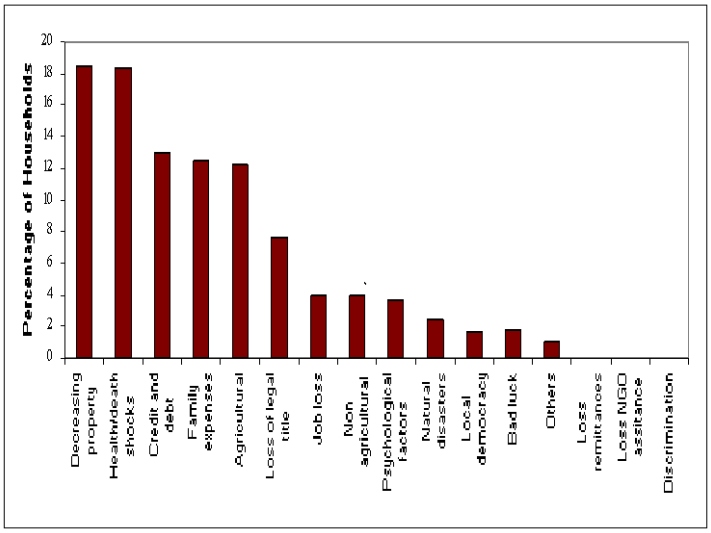
[15] Mobility status is based on a community assessment, not a self assessment. It is unlikely that these results are driven by the endogeneity of self-confidence measures with respect to mobility indicators.

[16] The other two measures of individual agency (i) a sense of power/rights and self confidence and (ii) control over every day decisions also affect mobility.

[17] The numbers could be interpreted as 40 percent of the chronic poor have low aspirations for their children. This suggests that a substantial number of poor respondents believe they are stuck in inter-generational poverty.

2.31 **Factors contributing to a decline in status at the household-level include aging, health problems combined with accidents, high medical expenses and the death of a main income earner.** Nearly 18 percent of all faller households believed that idiosyncratic shocks led to their fall (figure 2.4). An equal number of households, however, attributed their downward slide to a worsening of their local market economy. Under that heading they put inconsistent availability of work opportunities, inflation in the price of basic necessities, and fluctuation in output prices. Irregular work combined with the burden of personal illness or that of a family member pushed households into taking on debt, mostly from private sources at high rates. Excessive debt and an inability to procure credit constituted the third most frequently cited reason for falling (figure 2.4). Most of these debts stemmed from financing health expenses or major household events such as a marriage.

Figure 2.4: Self reported reasons for downward movement by fallers in Uttar Pradesh



HIGHLIGHT 2.1. POVERTY AND EMLPOYMENT OUTCOMES OF SCHEDULED CASTES

2.1.1 Introduction

2.1.1 Other sources report increasing political mobilization and empowerment of the SC group as a means to improve their social status. This report finds that SC groups in UP advanced their relative economic position in the last decade. Chapter 2 indicates that poverty among SC groups declined faster than that in UP overall. This section analyzes in greater detail trends in poverty and employment outcomes among SCs in UP to understand the drivers of these improvements.

2.1.2 The social stratification of Indian society puts scheduled castes and tribes (SC/STs) at the lowest rung of the socio-economic hierarchy. This historical, social and economic relegation of the group has continued into modern times, making this group the most deprived in India. Human development indicators are generally worse among SC/ST groups (see UP Human Development Report and Chapters 5 and 6). In Uttar Pradesh, the SC/ST group consists mainly of SCs who are also called "Dalits".[18] Caste issues are especially prominent. The proportion of SCs in the population is higher than the average for India and more than 20 percent of all Dalits in India live in UP. The *Bahujan Samaj Party* (BSP) which draws its main political support from the SC groups won the absolute majority in the state legislate in May 2007 by combining support from the Dalits, Brahmins, lower OBC and Muslims. The leader of the BSP party, Ms. Mayawati, became India's first Dalit Chief Minister.[19]

2.1.3 During the last decade, SC groups made improvements across the board in absolute and relative terms – except for urban areas of the Eastern region. While the prevalence of poverty is still highest among SCs, on average it has declined faster than in the state as a whole. The wages of SC groups have risen faster than those of majority groups for men but not for women. The SCs have also experienced improvements in education, measured in terms of current enrollment and in terms of the education level of young adults, which were also faster than for the general population. Within UP, the Central region has demonstrated the greatest progress in improving the welfare of SCs. Nevertheless, it is still a tall order to raise their position. As a group, they remain the poorest members of the UP population. Especially worrisome is the increase in poverty among SCs in the urban Eastern region.

2.1.2 Poverty and employment outcomes

2.1.4 The SC/ST group in UP registered a higher than UP average decline in poverty in rural and urban areas. Compared with the decline in poverty among the SCs in India as a whole, UP's SC/ST group experienced about the same *percent* decline and a faster decline in *percentage points* (table 2.1.1) For example, between 1994 and 2005 in UP overall, there was a decline of 10 percentage points (or 23 percent) in rural poverty and a six percentage point (or 16 percent) decline in urban poverty , table 2.1.1. The SC/ST group registered a decline of over 15 percentage points (or 26 percent) in rural and urban areas. The poverty rate among SC/STs in UP remained higher than the overall poverty rate for the state and the rate of poverty for SCs in rural and urban areas for India as a whole.

2.1.5 **Similar to the trends in poverty for UP as a whole, the Central and Southern regions led the decline in poverty for SC/STs.** The steepest decline in poverty among this group was in the Central region; that was true for rural and urban areas. The decline in rural areas was comparable with the overall population, but it was considerably steeper in urban areas (table 2.1.1). An increase in casual wages among the SC/ST group in the construction industry was responsible for this improvement, see below. The poverty rate among SC/ST groups in the rural Southern region declined faster than the average for these regions and also faster than in the Western and Eastern regions. Among SC/ST groups in rural areas

[18]The proportion of SCs in the population of UP is 23.1 percent, and the proportion of STs is 0.4 (2000 Census).

[19] Ms Mayawati has been the Chief Minister of UP before but for short periods of time. First, she became a Chief Minister in 1995 in a short-lived coalition government, then again for a short period in 1997. From 2002 to 2003 she was also a Chief Minister for a somewhat longer term in a coalition with the *Bharatiya Janata Party*.

of the Western and Eastern regions, poverty declined even faster than the regional average.[20] The urban areas of the Eastern region were an exception; poverty among the SC/ST there increased. (The decline in casual wages among SC/STs in this region was responsible for this trend, see below.)

Table 2.1.1: Poverty rate in India and UP among SC/ST and general population

	UP SC/ST				all UP				SC in India overall*			
	1994	2005	change (percentage points)	change (percent)	1994	2005	change (percentage points)	change (percent)	1994	2005	change (percentage points)	change (percent)
Rural												
Western	40.2	33.8	-6.4	*-16%*	29.3	24.1	-5.2	*-18%*				
Central	66.7	37.2	-29.5	*-44%*	50.2	30.1	-20.1	*-40%*				
Eastern	67.1	55.2	-11.9	*-18%*	48.8	41.4	-7.4	*-15%*				
Southern	83.4	54.9	-28.5	*-34%*	67.4	38.9	-28.5	*-42%*				
Total	59.9	44.5	-15.4	*-26%*	43.1	33.3	-9.8	*-23%*	48.2	37.1	-11.1	*-23%*
Urban												
Western	47.9	41	-6.9	*-14%*	31.1	28	-3.1	*-10%*				
Central	66.6	37.7	-28.9	*-43%*	33.9	24.6	-9.3	*-27%*				
Eastern	52.3	59.6	7.3	*14%*	38.6	37.5	-1.1	*-3%*				
Southern	86.1	37.3	-48.8	*-57%*	74.4	43	-31.4	*-42%*				
Total	58.5	43.3	-15.2	*-26%*	36	30.1	-5.9	*-16%*	50.9	37	-13.9	*-27%*

*from calculations made for the ongoing All-India Poverty Assessment

2.1.6 All employment categories in rural and urban areas experienced a decline in poverty. In rural areas, the self-employed in agriculture had the greatest decline in poverty; agricultural laborers were next. In urban areas, the decline was greatest for self-employed workers. In rural and urban areas, casual laborers in non-agriculture had the lowest decline in poverty (similar with the trends for UP as a whole). Differences in wage trends are responsible for the difference in poverty trends among agricultural and non-agricultural workers. Agricultural wages increased much faster than non-agricultural wages. These wage increases followed the improvements in agricultural productivity and tightening of the labor market as workers moved to non-agricultural occupations. Yet, even after these improvements, agricultural laborers have the highest rate of poverty – more than 56 percent.

Table 2.1.2: Poverty by household head's status of employment among Scheduled Castes and general population, Uttar Pradesh and India

	Poverty Headcount Rate			Distribution of the Poor			Population Distribution		
	1994	2005	change (percentage points)	1994	2005	change (percentage points)	1994	2005	change (percentage points)
				Rural					
Self-empl in non-agriculture	52.9	42.4	-10.6	10.1	18.2	8.1	11.4	19.1	7.7
Self empl in agriculture	52.9	35.8	-17.2	30.2	27.0	-3.2	34.1	33.5	-0.6
Agricultural labor	70.2	56.8	-13.4	47.8	31.3	-16.5	40.8	24.5	-16.3
Non-agricultural labor	59.7	52.5	-7.2	9.3	21.2	11.9	9.3	18.0	8.6
Other	36.9	21.0	-15.8	2.7	2.3	-0.3	4.3	5.0	0.6
Total	59.9	44.5	-15.4	100.0	100.0	0.0	100.0	100.0	0.0
				Urban					
Self employed	68.1	48.5	-19.7	45.7	45.9	0.2	39.2	41.1	1.8
Salaried workers	36.7	29.0	-7.7	19.2	25.5	6.3	30.7	38.2	7.5
Casual workers	70.8	69.8	-0.9	32.0	27.4	-4.6	26.5	17.0	-9.5
Other	50.5	13.4	-37.1	3.1	1.2	-1.9	3.6	3.7	0.2
Total	58.5	43.3	-15.3	100.0	100.0	0.0	100.0	100.0	0.0

Source: Staff calculations from Schedule 1, NSS 50 and NSS 61, Central Sample

[20]The concentration of the SC/ST population in the rural Eastern areas and the urban Western region is higher than in other regions.

2.1.7 Good agricultural performance benefited all farmers in UP, including SC/ST farmers. In addition, the share of farmers for whom the raising of livestock is a main occupation is higher among SC/ST farmers, possibly because the SC/ST tend to have marginal landholdings which are less productive for crops. While 14 percent of all farmers in UP raise livestock as their main occupation, this share is as high as 20 percent for the SC/ST group (table 2.1.3 and chapter 4). Meat prices have risen faster than cereal prices in the last decade, benefiting farmers engaged in cattle rearing. The Western region has the highest proportion of SC/ST farmers who raise livestock.

Table 2.1.3: **Raising of livestock as a main occupation among SC/ST farmers in Uttar Pradesh**

	1992	2003
Western	21	30
Central	9	13
Eastern	6	16
Southern	19	21
All UP	12	20

2.1.8 Ojha 2007 reports that diversification within households also contributed to income improvements among SCs. [21] One strategy for SC/STs is for females to concentrate on cultivating their small and marginal holdings or engage in casual agricultural labor, while males search for casual wage labor in petty and small trade activities in the non-farm sector, sometimes migrating to different regions or urban centers to do so. Greater employment diversification within a household allows to improve household income. The non-farm sector also offers more stable employment and higher wages. An increase in casual wage employment by SC/STs in the non-farm sector in rural and urban areas is indicative of this strategy. Regions where there has been a great diversification of employment have seen a substantial decline in poverty among the SC/STs, particularly among the males in the Central and Southern regions.

2.1.9 Occupational shifts also contributed to the decline in poverty among the SC/ST group. In rural areas, a large proportion of SC/STs left their jobs as agricultural casual laborers and moved to self-employment and casual labor in non-agriculture. In urban areas, the proportion of SC/STs engaged in casual work declined. The percentage of those engaged in self employment and especially regular salaried work increased (table 2.1.2). Casual workers have the highest poverty rate. Exiting this occupational category for some other activity boosts their income. The proportion of SC/STs engaged in agricultural labor in rural UP declined from 41 to 24 percent. These workers became self-employed and casual laborers in non-agriculture. In general, these occupations provide a higher standard of living. In addition, in urban areas, the proportion of SC/STs engaged in salaried work increased from 31 percent to 38 percent. In 2005, SC/ST regular salaried workers had the lowest poverty rate, 29 percent.

2.1.10 SC/STs moved out of manufacturing and into construction and trade. These sectors performed relatively well in the last decade and are also better paid than casual agriculture. In rural areas, construction and manufacturing emerged as the prime industries for employing males; manufacturing and community services have attracted females. Among rural males there has been a substantial gain in employment in construction. That is in line with an increase in casual non-farm employment in the region and a decline in agriculture. Manufacturing and community services experienced a decline. Overall employment in the non-farm sector is very low for females, much lower than for males. The prime non-farm sector has been community services (health and education, etc). Manufacturing, construction and trade have also experienced small gains in urban areas; construction, trade and community services are the main source of employment for males and females. A decline in community services has occurred alongside an increase in employment in construction and trade for males and females.

[21]This is based on a study which collected primary longitudinal data in 1999 and in 2005 in four poorest districts of Uttar Pradesh: Bahraich (eastern region) Hardoi (central) Aurajya (western) and Chitrakoot (southern), see R K Ojha "Poverty Dynamics in Rural Uttar Pradesh," EPW.

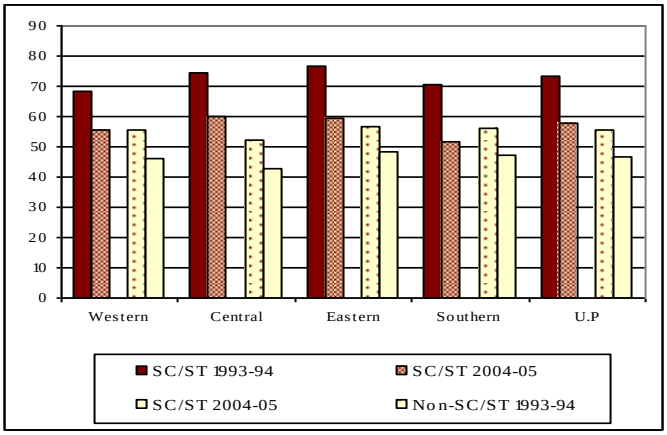
Table 2.1.4: Distribution of workers across non-agricultural industrial groups for SC/ST in UP, 1994- 2005

	Rural				Urban			
	Male		Female		Male		Female	
	1993-94	2004-05	1993-94	2004-05	1993-94	2004-05	1993-94	2004-05
Mining & Quarrying	2	1	0	0	0	1	0	0
Manufacturing	34	25	38	42	18	17	25	27
Electricity and Gas	1	0	0	0	1	1	2	3
Construction	21	40	1	4	14	20	11	21
Trade	11	14	8	12	14	21	10	14
Transport	10	9	0	2	15	20	2	0
Financial Services	0	2	0	0	2	2	0	0
Community Services	22	9	53	40	35	19	50	35
Total	100	100	100	100	100	100	100	100

Source: Computed From NSSO Employment and Unemployment Surveys, 50th, 55th and 61st rounds
Note: Share is for usual principal status (UPS) workers of all ages

2.1.11 **Between 1995 and 2005, the education profile of SC/STs active in the labor market also improved.** High levels of poverty among SC/STs have been associated with the group's poor physical and human assets. Overall, the decline in illiteracy in UP was much steeper among SC/STs compared to the general population (figure 2.1.1). All regions showed a decline in illiteracy. The greatest improvement among SC/STs was in the Southern region. This drop in illiteracy was accompanied by an increase in primary school education and middle school education for this group. (Note that the Southern region also demonstrated the greatest decline in poverty during this period.) For other castes, the regions have had similar performance.

Figure 2.1.1: India, Uttar Pradesh, change in the level of illiteracy among SC/ST and majority population, 1994-2005



Rural wages

2.1.12 The wages of SC/ST workers in UP are lower than their counterparts in higher castes. Between 1994-2005, male SC/ST wages grew faster than the majority group and the disparities among groups declined. The wages for SC/STs in agricultural operations were around 88 percent of other castes. In non-agricultural operations the disparities were even higher; SC/ST wages were 70 percent of the other castes. Disparities in wages along gender and social lines may be attributed to differences in human capital of workers and reflect the wages they are willing to accept. Self-employment is an option for those who have land, and SC/STs are more likely to be landless or possess only marginal plots, which means that they are less likely to have self-employment opportunities. Over the decade, the wage disparities between SC/STs and the majority group declined for males, especially in non-agricultural operations. This pattern was evident across all regions -- except in the West.

2.1.13 **The Southern region experienced the greatest narrowing of the gap in wages between the SC/STs and the majority group**. In the Western region, the gap widened. In the eastern region it worsened in agriculture but improved in non-agriculture. The Central region is close to parity in wages. In 1994, SC/ST wage rates were lowest in the Southern region and highest in the Western region, similar to the UP average. Overall, rural wage growth was highest in the Southern regions and lowest in the Western region. The Southern region also had higher growth in agricultural and non-agricultural operations.

Table 2.1.5: Trends in real wages of SC/STs prime-age workers. 1994-2005, male, rural in Uttar Pradesh

		Real wages (1993-94 prices)			SC/ST wages as a share of the majority population's wages	
		1994	2005	change (percent)	1994	2005
UP	Agriculture	20.79	28.47	*37%*	0.88	0.88
	Non-Agriculture	34.1	40.2	*18%*	0.64	0.70
	Total	24.81	35.84	*44%*	0.62	0.72
Western	Agriculture	27.12	31.73	*17%*	0.95	0.93
	Non-Agriculture	38.67	40.74	*5%*	0.74	0.67
	Total	31.71	37.23	*17%*	0.76	0.72
Central	Agriculture	17.96	26.78	*49%*	0.89	1.02
	Non-Agriculture	31.57	39.97	*27%*	0.64	0.81
	Total	21.06	34.7	*65%*	0.61	0.8
Eastern	Agriculture	19.42	26.01	*34%*	0.99	0.81
	Non-Agriculture	32.5	40.61	*25%*	0.58	0.73
	Total	22.9	35.62	*56%*	0.56	0.7
Southern	Non-Agriculture	20.86	32.68	*57%*	0.52	0.54
	Total	15.82	30.5	*93%*	0.48	0.59

Source: Computed from NSSO Employment and Unemployment Surveys, 50th, 55th and 61st rounds

Urban Wages

2.1.14 Wages for SC/STs in regular salaried employment grew faster than those of the majority castes. This helped reduce the gap in wages between the two groups. In 1994 SC/ST wages in regular employment were one-quarter lower than the majority population. In 2005 they were close to parity. For casual operations, wages were almost on a par and stayed that way. In absolute terms, however, urban SC/ST wages have stagnated. This trend is similar to those of the majority groups. The highest growth in regular wages among the SC/ST was in the Southern region; SC/ST regular wages there overtook wages of majority groups. Growth in the Central region was also high. In contrast, over the past decade, casual wages stagnated in real terms for all regions except the Eastern region which experienced a decline of almost 40 percent. Male SC/ST workers there experienced a decline in their wages in absolute and relative terms (table 2.1.5).

Table 2.1.6: Trends in real wages among SC/STs prime-age workers 1994-2005, male, urban in Uttar Pradesh

		Real wages (1993-94 prices)			SC/ST wage as a share of the majority population wage	
		1994	2005	change (percent)	1994	2005
UP	Regular salaried	58.96	84.94	*44%*	0.74	0.94
	Casual	34.48	32.61	*-5%*	0.97	0.98
Western	Regular salaried	58.69	63.97	*9 %*	0.75	0.91
	Casual	36.83	35.82	*-3%*	0.98	0.98
Central	Regular salaried	59.33	100.64	*70%*	0.72	0.86
	Casual	33.46	50.92	*52 %*	1.12	1.75
Eastern	Regular salaried	59.52	94.09	*58%*	0.72	0.87
	Casual	34.37	21.01	*-39%*	1.04	0.72
Southern	Regular salaried	59.33	108.16	*82%*	0.87	1.21
	Casual	25.38	25.79	*2%*	0.77	0.96

Source: Computed from NSSO Employment and Unemployment Surveys, 50th, 55th and 61st rounds
Note: The wages are for non-agricultural operations.

2.1.15 **Wage trends are in line with poverty trends and shifts in employment**. The Southern region saw a shift toward regular employment, plus a growth in wages for the category and a substantial decline in poverty. Poverty levels increased in the Eastern region where casual wages declined. This region also experienced an increase in the share of male non-farm casual workers among SC/STs.

2.1.16 As the agriculture sector declined and diversification increased, construction in the non-farm sector generated employment in rural and urban areas. That explains an increase in casual wage employment. Manufacturing and community services did not perform which contributed to an outflow of labor from those sectors. In the Southern region, the construction industry experienced high employment; the manufacturing, trade and transport sectors there performed well for males; for females, it was community services, particularly in urban areas. This explains an increase in self-employment and regular employment in the non-farm sector for the region.

2.1.17 Good agricultural performance has boosted wages; so has the casual non-farm sector. The latter received its stimulus from an increase in construction. A high share of SC/STs have benefited from casual wage employment and a growth in wages, which has narrowed the wage disparity between them and other social groups. The Southern region experienced the sharpest narrowing of the gap in wages between SC/STs and higher castes. Greater diversification of employment has had a positive impact on wages. An increase in wages in the non-farm sector is demand driven. Due to a tightening of the labor market, wages in the agricultural sector have grown at a more moderate rate. This has helped to counter poverty, particularly in the Southern and Central regions.

CHAPTER 3: EMPLOYMENT, WAGES AND WORK MIGRATION PATTERNS

3.1 Introduction and summary

3.1 Good performance in agriculture and the expansion of non-farm employment gave stimuli to agricultural wages improving the productivity and tightening the agricultural labor market. Real agricultural wages went up by 2.3 percent annually leading to the faster decline in poverty among agricultural laborers. In contrast, non-agricultural wages nearly stagnated growing by 0.8 percent per annum following a slowdown in manufacturing and to accommodate an inflow of workers from agriculture (the proportion of men engaged in agriculture declined by a quarter from 74 to 62 percent of prime-aged labor force.) Households increasingly use the "two earners" strategy with men shifting out of agriculture to non-agricultural activities and women increasing their labor supply (as a subsidiary worker) tendering to the family plots. In urban areas, where the poor performance of manufacturing affected wages and incomes of casual and regular workers alike, the incidence of child labor increased. Unemployment remained low, but is higher among young and educated.

3.2 Although non-agricultural employment expanded in UP, slow growth in urban wages and negligible increase in the number of regular salaried jobs compelled men, especially young men, to look for employment elsewhere. About two million men left UP in the last decade and 70 percent of them did so to look for employment. Urban areas of Maharashtra, Delhi and Gujarat are the top three destinations for those who migrate out of UP for economic reasons. The top three rural destinations are Haryana, Uttaranchal and Delhi. Intra-state migration in UP occurs primarily among those who move from one regular job to another, but there are also those who move to set up a self-employment venture or take up a non-farm casual work. In-state migrants tend to go to urban areas of the Central and Western regions. Out-of-state migrants come to UP to take up casual non-agricultural jobs, mostly in the Western region. Mobility is associated with upward occupational change and an increase in income.

3.2 Labor Force Participation (LFP)

3.3 Among men and women age 15 to 59 in rural UP, eight out of 10 men and about two out of 10 women work or look for work. In urban areas, the numbers are the same for men but only half as high for women. Over the last decade, these statistics have changed very little. Male LFP is fairly consistent across the regions or sectors. In comparison, labor force participation by females shows considerable variation. For example, in rural areas, female labor force participation ranges from 10 percent in the Western region to 29 percent in the Eastern region. Over time, male LFP has declined in rural areas across all regions. However, female participation increased by five percent in rural areas of the Western and Central regions. In the Western region, the major increase in LFP occurred among females under the age of 15. In the Central region, the increase occurred for women of all skill levels. Among men in rural areas, the reduction in LFP was concentrated in the younger group. Their labor force participation fell from 70 percent in 1994 to 61 percent in 2005.

3.4 Trends in LFP are defined according to principal (LFP1) and subsidiary (LFP2) status. LFP1 and LFP2 provide similar estimates of male labor force participation. However while LFP1 showed little changes for women, LFP2 showed there were large increases in the Central and Southern regions, concomitant with above-average increases in female wages there. Estimates of labor force participation based on principal (LFP1) and subsidiary status (LFP2) are very similar for males (table 3.1). It does make a difference for rural females. LFP1 shows that 21 percent of rural females worked or were looking for work, while LFP2 shows that 39 percent did so. In urban areas, LFP1 is 11 percent, while LFP2 is 17 percent in 2005. Over time, the dynamics also changed. Based on LFP2, female labor force participation in rural UP went up substantially between 1994 and 2005. The most dramatic increase in LFP among rural females took place in the Central region; it increased from 25 percent in 1994 to 43 percent in 2005. LFP1 estimates show that female work participation in the Southern region declined from 36 to 23 percent, whereas estimates of LFP2 show that it increased from 44 to 63 percent. These trends in female

LFP2 were concomitant with large wage increases experienced by rural women, especially in agricultural occupations and in the Central and Southern regions.

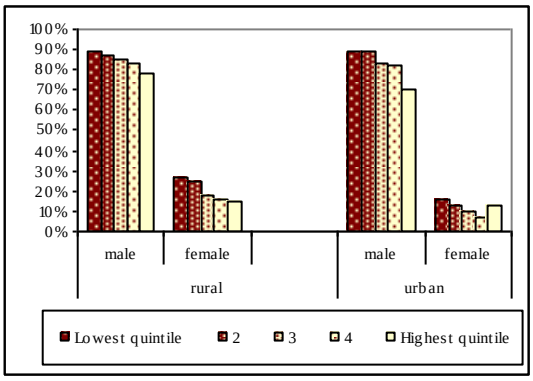
Table 3.1: Employment patterns among prime adults (age15-59) in Uttar Pradesh

	Rural						Urban					
	Male			Female			Male			Female		
	1994	2000	2005	1994	2000	2005	1994	2000	2005	1994	2000	2005
LFP (based on principal status)												
Western	88	86	85	5	10	10	84	85	84	8	9	11
Central	90	87	87	15	17	21	76	80	81	12	11	8
Eastern	87	83	83	31	30	29	76	78	79	15	15	16
Southern	88	89	86	36	19	23	83	79	80	24	11	9
All UP	88	85	85	20	21	21	81	82	82	11	11	11
LFP (based on principal and subsidiary status)												
Western	91	88	86	24	22	31	86	86	84	15	13	18
Central	92	89	88	25	31	43	77	82	81	13	17	13
Eastern	89	85	85	41	40	41	78	79	79	18	16	19
Southern	90	89	86	44	37	63	83	79	79	32	11	17
All UP	90	87	86	33	32	39	82	83	82	17	15	17
Unemployment (based on principal status)												
Western	0.9	1.2	0.9	4.2	0	0.1	3.5	2.5	2.1	2.9	5.4	5.9
Central	1.1	0.7	1.1	0.0	0.7	3.8	4.8	6.6	3.7	4.5	4.2	3.8
Eastern	1.9	2	1.6	0.2	0.3	0.2	2.8	6.7	4.7	0.4	1.9	6.2
Southern	0.0	1.1	2.1	0.0	0.2	0.0	3.7	6.3	15	0.0	0.0	3.5
All UP	1.3	1.4	1.3	0.5	0.3	0.8	3.6	4.6	3.6	2.2	3.9	5.5

Note: Employed workers are accorded principal status (UPS) if they spend a majority of their time in the preceding year engaged in gainful economic activity. Unemployed workers are those who sought work but did not find it during the major part of the previous year (UPS). Employed and unemployed workers are classified as in the labor force.

3.5 **In urban and rural areas, the probability of being in the labor force is strongly negatively correlated with the per capita expenditures of the household.** Individuals in the lower quintiles of the per capita expenditure distribution have a greater probability of being in the labor force (figure 3.1).[22] In 2005 in rural areas, men and women in the first quintile of the expenditure distribution participated in the labor force at a rate that was 1.1 times and 1.8 times higher, respectively, than the participation rates of their counterparts in the last quintile. In urban areas, these differences increased to 1.25 times and 1.21 times for men and women, respectively.

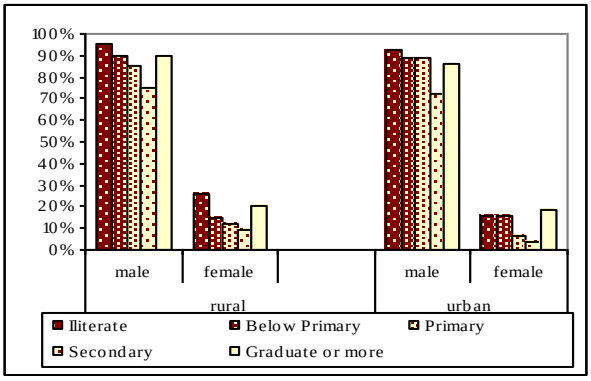
Figure 3.1: Labor Force Participation of prime-age adults and household income in Uttar Pradesh, 2005



[22] The same fact would emerge if we were to include household duties in the definition of labor force participation.

3.6 **There is also a strong negative (or to be more precise a convex) relationship between activity and education.** Specifically, among men and women in urban and rural areas, labor force participation rates decline as education increases, and then picks up again for individuals with graduate degrees. A number of studies in India and in other counties showed that this pattern is explained by the higher reservation wages of individuals with more education and by the tradeoffs that they face between "wage and income effects".[23] In 2005 in rural areas, illiterate males and females participated in the labor force at a rate that was 20 percentage points and 17 percentage points higher, respectively, than their male and female counterparts with a secondary education. These differences are very similar for males in urban areas but slightly less so for females in urban areas. Between 1994 and 2005, the decline in labor force participation among men in rural areas affected all education groups.

Figure 3.2: Labor Force Participation of prime-age adults and their education level in Uttar Pradesh, 2005



3.3 Unemployment

3.7 **Open unemployment is low in UP.** In 2005, unemployment was 1.3 percent for men and 0.8 percent for women in rural areas (table 3.1). This is consistent with data from other developing countries and with patterns in India as a whole. Most individuals cannot afford to be unemployed. Although unemployment rates are higher in urban areas, they are still low (3.6 percent for men and 5.5percent for women).[24] Over the last decade, unemployment has been fairly constant in rural areas. However, from 1994 to 2005, the rate more than doubled for females in urban areas; it went from 2.2 percent in 1994 to 5.5 percent in 2005. For males in urban areas, the unemployment rate rose by one percentage point between 1994 and 2000; then in 2005 it fell to 3.6 percent, which is the same rate that existed in 1994.

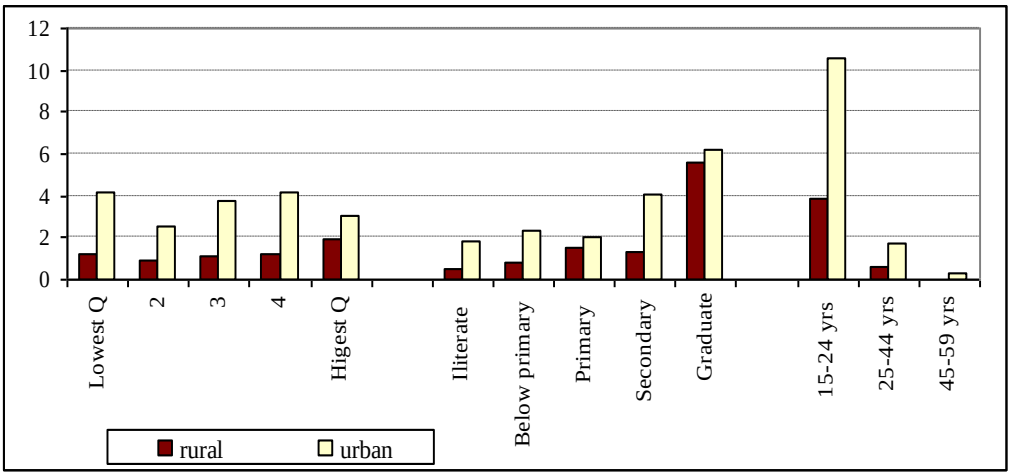
3.8 Male unemployment rates in rural areas vary from 2.1 percent in the Southern region to 0.9 percent in the Western region. In urban areas, these rates climb as high as 15 percent in the Southern region, but in general, they hover at a low of 2.1 in the Western region. The increase in male unemployment in the urban Southern region is prevalent across all education groups, but it is more common among younger men and those who are not heads of their own households. Unemployment rates for females rose throughout -- except for the Central region.

3.9 Unemployment rates tend to be higher among youth, those who have had more education and households in the richer consumption quintiles. For example, in 2005, men with graduate degrees had an unemployment rate of 5.6 percent in rural areas and 6.2 percent in urban areas. In contrast, the unemployment rate among illiterate men was 0.5 percent and 1.8 percent in rural and in urban areas, respectively. The data suggest that poor and less well educated individuals simply cannot afford to be unemployed. It could also be true that the unemployed are waiting for a "good" job in the formal sector. This pattern is prevalent among men and women in urban and rural areas.

[23] "Wage effect" is an empirically observed pattern of an increase in the probability of LFP with the increase in wages; "income effect" is a pattern of a decline in the LFP with the increase in income, caused by the increased preference for leisure. The combined effect of "wage and income effects" is a subject for an empirical estimation.

[24] Interestingly, the unemployment rate in rural areas is close to zero for females. That is because most women in rural areas are out of the labor force; they work at home on domestic tasks.

Figure 3.3: Unemployment rate among prime age males by background characteristics in Uttar Pradesh, 2005



3.4 Distribution of the labor force by sector and occupations

Sectors of Employment

3.10 **Between 1994 and 2005, agricultural employment in rural areas declined substantially.** Cultivators, the largest employment category in rural UP, dropped from 50 to 56 percent for men; for women, this employment category hovered around 50-55 percent. Agricultural casual employment among prime-age men declined from 20 percent in the mid-1990s to 13 percent by mid-2000. For women, the decline was slightly smaller. It went from 30 to 24 percent. In contrast, non-agricultural self employment increased for both men and women. On the other hand, casual non-farm employment increased for men only.

Table 3.2: Share of employment in various occupational groups among the economically-active adult population in Uttar Pradesh

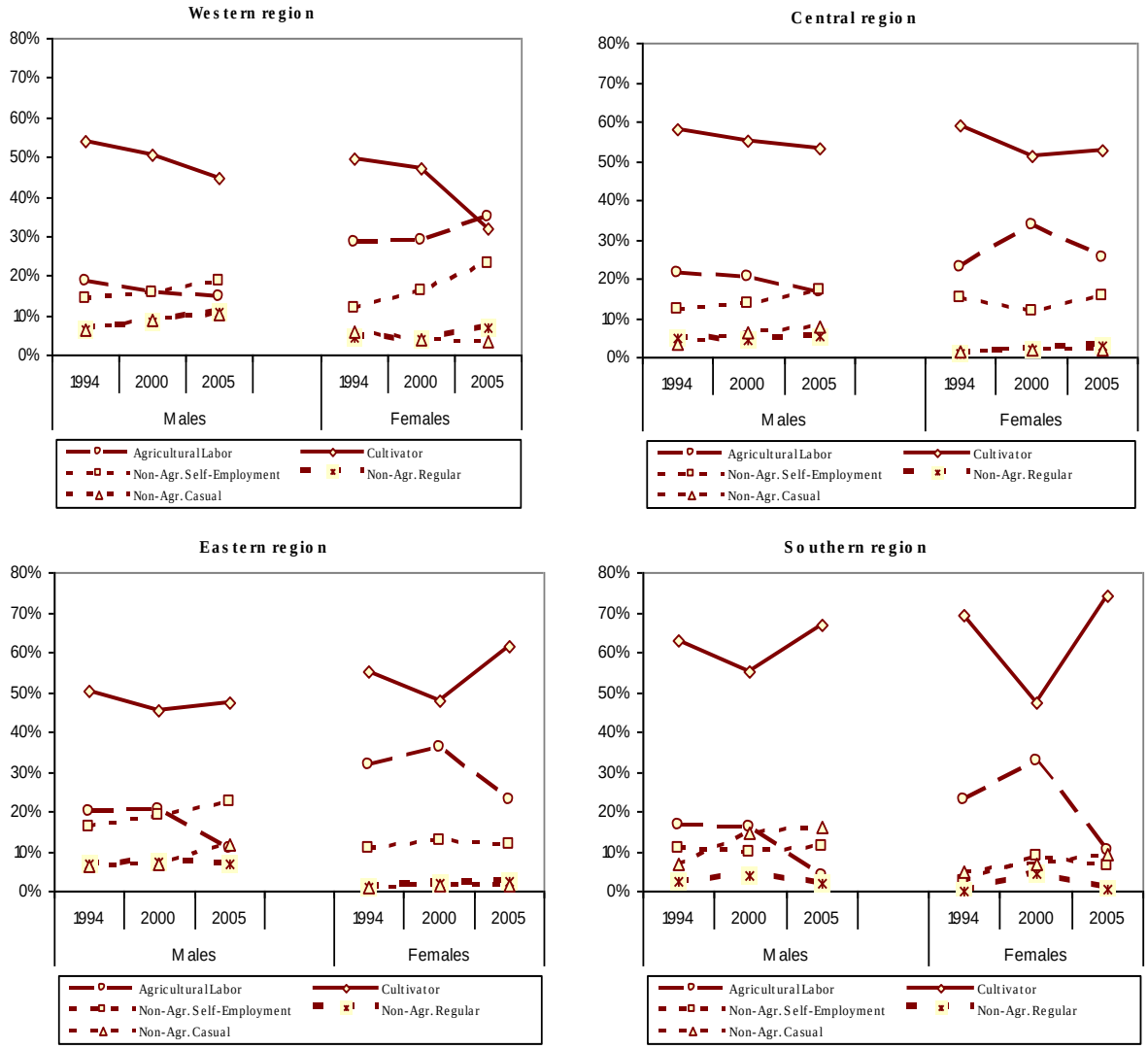
	Male				Female			
	1994	2000	2005	change (percent)	1994	2000	2005	change (percent)
Rural								
Agricultural Labor	20	19	13	*-34%*	30	35	24	*-17%*
Cultivator	54	49	49	*-10%*	56	48	56	*0*
Farm Regular	0	1	0	*20%*	0	0	0	-
Non-Agr. Self-Employment	14	16	20	*36%*	11	13	14	*29%*
Non-Agr. Regular	6	7	8	*30%*	1	2	3	*143%*
Non-Agr. Casual	6	8	11	*87%*	2	2	2	-
Urban								
Agricultural Labor	3	2	2	*-50%*	10	4	11	*5%*
Cultivator	7	4	4	*-38%*	11	9	12	*11%*
Farm Regular	0	0	0	*-72%*	0	0	1	-
Non-Agr. Self-Employment	48	48	50	*5%*	41	44	41	-
Non-Agr. Regular	32	33	33	*3%*	28	38	31	*8%*
Non-Agr. Casual	10	13	11	*14%*	10	6	4	*-56%*

3.11 In urban areas, the proportion of self-employed males increased slightly. The percentage of women in casual occupations declined from 10 to 4 percent. Self employment in non-agricultural activities occupies 50 percent of males and 41 percent of females. These figures represent a slight increase for males over the prior 10-year period. Agricultural employment represents a fraction of urban

employment for men and women. It declined further for men. The proportion of those with regular jobs stayed constant at over 30 percent for men and it increased slightly for women.

3.12 For men, the decline in agricultural occupations occurred in all regions. This was true for cultivators and casual agricultural laborers. For women, the overall share of those engaged in agriculture changed little. There was, however, movement from one agriculture-related category to another, namely a shift from cultivators to agricultural laborers in the Western region and from agricultural laborers to cultivators in the Southern and Eastern regions.

Figure 3.4: Share of employment among economically-active adults in rural areas by region in Uttar Pradesh



3.13 Regression analysis shows that the poor with low level of education and social status have limited access to better paid nonagricultural employment. Consistent with the findings by Lanjouw and Murgai (2008) for India, regression analysis for UP shows that level of education remains the most important determinant of participation in regular non-farm employment. The socially disadvantaged groups (Muslims and female, and to some extent SC/ST) have significantly lower probability of being employed in regular nonfarm employment. This result holds after controlling for differences in education and other individual and household characteristics. The SC/ST and Muslims are disproportionately concentrated in casual labor. The probability of having a regular non-farm job is also higher in locations with a greater share of urban population.

Table 3.3: Sector of employment choice: rural workers in Uttar Pradesh
Multinomial logit estimation; marginal effects (cultivators as base category)

	Agriculture		Non-Farm			
	Casual	Regular	Casual	Regular	Self employed	Not working
Age	0.0114	0.0005	0.0064	0.003	0.0181	-0.089
	(16.8)**	(4.26)**	(14.6)**	(9.77)**	(16.6)**	(-45.2)**
Age squared	-0.0002	-0.00001	-0.00009	-0.00003	-0.0002	0.001
	(-16.4)**	(-3.95)**	(-14.7)**	(-8.19)**	(-14.5)**	(39.7)**
Literate but below primary	-0.003	0.0019	0.0011	0.0181	-0.031	0.0296
	(-0.23)	(1.28)	(0.15)	(2.91)**	(-1.05)	(0.55)
Primary completed	-0.0275	-0.0011	-0.0095	0.0189	0.0199	0.0153
	(-6.96)**	(-1.75)	(-4.54)**	(9.05)**	(2.88)**	(1.12)
Secondary completed	-0.0644	-0.0009	-0.0311	0.0224	-0.0305	0.166
	(-16.3)**	(-1.83)	(-13.4)**	(11.3)**	(-4.73)**	(13.2)**
Higher Secondary completed	-0.112	-0.005	-0.0605	0.0304	-0.0434	0.313
	(-12.9)**	(-2.75)**	(-11.7)**	(12.3)**	(-4.17)**	(16.7)**
University Completed	-0.161	-0.005	-0.0719	0.0415	-0.012	0.316
	(-10.0)**	(-2.07)*	(-9.14)**	(13.8)**	(-0.98)	(12.8)**
Scheduled Caste/Tribe	0.0876	0.002	0.0401	-0.002	-0.0048	-0.0987
	(18.2)**	(2.71)**	(13.6)**	(-1.69)	(-0.70)	(-8.40)**
Muslim	0.0385	-0.0002	0.0173	-0.003	0.0161	-0.076
	(8.50)**	(-0.39)	(6.64)**	(-2.34)*	(2.73)**	(-7.52)**
Log(household size)	-0.0268	-0.0009	-0.006	0.0006	0.003	0.0725
	(-10.3)**	(-2.35)*	(-4.20)**	(0.60)	(0.66)	(8.93)**
Log(per capita land cultivated)	-0.131	-0.005	-0.0415	-0.003	-0.0471	0.08
	(-20.0)**	(-4.92)**	(-12.3)**	(-2.76)*	(-7.48)**	(8.86)**
Female	-0.134	-0.0057	-0.115	-0.0281	-0.189	1.126
	(-30.9)**	(-6.54)**	(-31.4)**	(-14.5)**	(-33.2)**	(97.9)**
% of population urban	-0.0009	-0.00004	0.0004	0.0001	0.0006	0.0005
	(-6.72)**	(-1.81)	(5.17)**	(2.88)**	(2.79)**	(1.40)
Log(total population)	-0.0091	0.0002	0.0015	0.004	0.0266	0.0271
	(-2.57)*	(0.40)	(0.74)	(2.88)**	(4.13)**	(2.47)*
Western Region (yes=1)	0.009	0.002	0.0058	0.003	0.013	-0.004
	(2.33)*	(2.70)**	(2.42)*	(2.02)*	(1.91)	(-0.34)
Eastern Region (yes=1)	-0.00668	-0.0007	0.0167	0.0007	-0.0228	-0.0137
	(-1.95)	(-1.09)	(7.19)**	(0.46)	(-3.46)**	(-1.22)
Southern Region (yes=1)	-0.0232	0.004	0.0344	0.0003	0.0691	-0.036
	(-3.08)**	(3.93)**	(9.21)**	(0.11)	(6.42)**	(-1.86)
Constant	-0.0006	-0.017	-0.136	-0.164	-0.719	0.792
	(-0.011)	(-2.00)*	(-4.30)**	(-6.99)**	(-7.54)**	(4.87)**
Observations	37357					
Pseudo R-squared	0.28					
Log Likelihood	-38916					

z statistics in parentheses
** p<0.01, * p<0.05

3.5 Occupational distribution

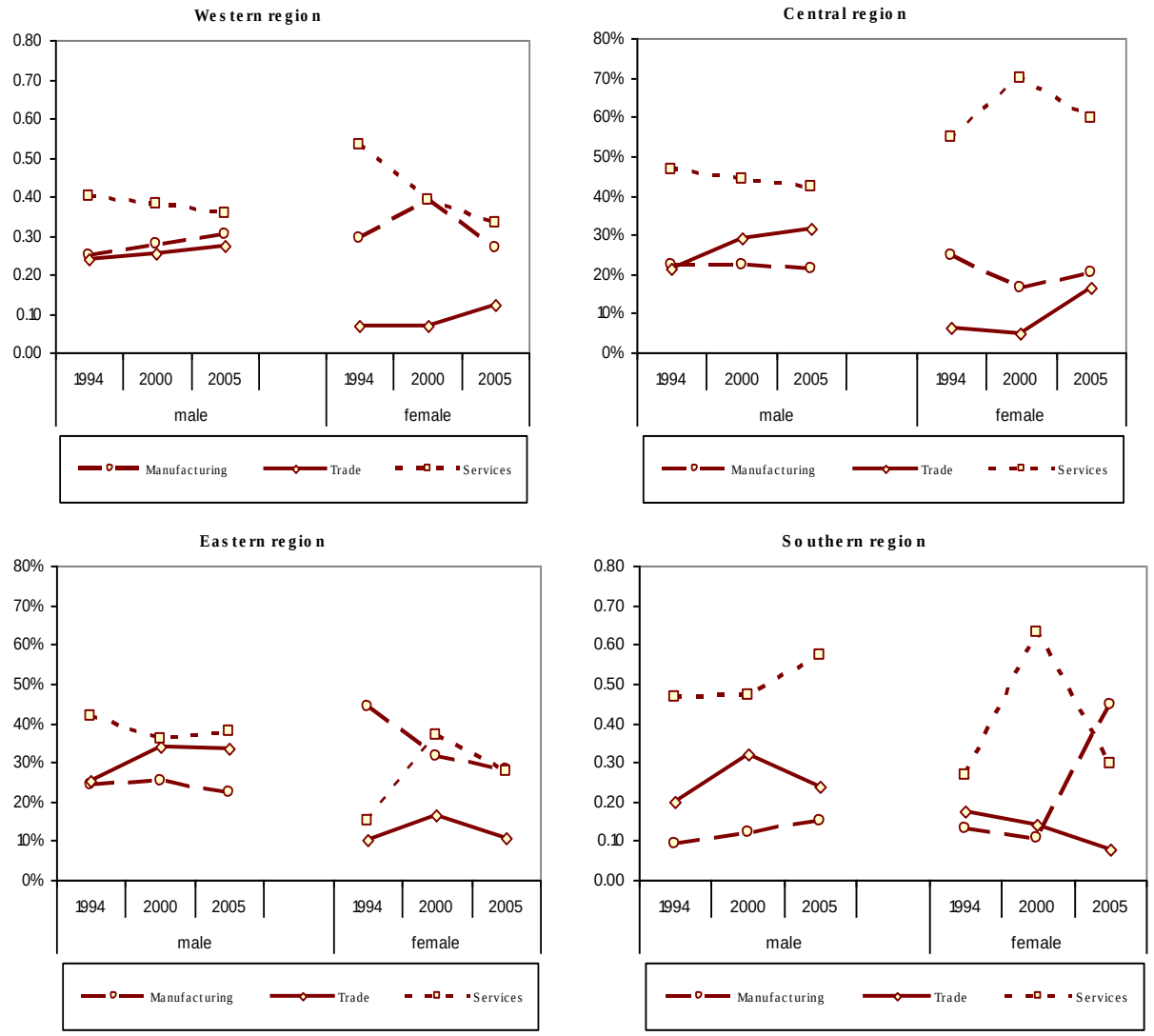
3.14 The bulk of non-agricultural employment for men in rural areas is in services. For women, it is in manufacturing. In urban areas, services are the largest single occupational category. It employs almost 40 percent of men and 35 percent of women. In rural areas, the largest share of employment in non-agricultural jobs is also in services. For males, services represent approximately 17 percent of their jobs. Among females, nine percent of non-agricultural jobs are in manufacturing. In urban areas, the single leading employment category after services is trade. Nearly 30 percent of employed men work in trade. In 2005, manufacturing provided employment to one-quarter of all working men and slightly more women.

Table 3.4: Share of employment in various industrial groups among economically-active adults in Uttar Pradesh

	Male				Female			
	1994	2000	2005	change (percent)	1994	2000	2005	change (percent)
Rural								
Agriculture and related	75	70	63	*-15%*	86	84	82	*-5%*
Manufacturing	8	9	10	*37%*	6	8	9	*54%*
Trade	5	6	9	*65%*	3	2	3	*-14%*
Services	12	15	17	*40%*	5	6	6	*32%*
Urban								
Agriculture and related	11	7	6	*-45%*	21	13	24	*13%*
Manufacturing	23	25	26	*13%*	30	29	27	*-12%*
Trade	23	28	29	*25%*	9	9	13	*39%*
Services	42	40	38	*-9%*	39	49	36	*-7%*

3.15 In rural areas over the past decade, occupations in trade and services grew for men while employment in manufacturing grew for women. In urban areas, employment in manufacturing increased slightly for men; it went up from 23 to 26 percent. For women, it declined slightly from 30 to 27 percent. The number of urban men who participated in trade increased across all regions while the increase in manufacturing was confined to the Western and Southern regions. There has been no decline in services in the urban Southern region for men. Urban women in the Eastern region lost manufacturing jobs whereas the Southern region increased these jobs dramatically -- from 13 to 45 percent of the female labor force (see figure 3.5). In rural areas, the proportion of manufacturing jobs increased overall, particularly in the Southern region for men and across the board for women.

Figure 3.5: Share of employment in various industrial groups among economically-active urban adults by region in Uttar Pradesh



3.6 Wages[25]

3.16 Between 1994 and 2005 among males in rural areas, real agricultural casual wages grew at 2.27 percent per year, increasing from 22 to 28 rupees in 1994 prices. Casual non-agricultural wages grew at a third of this pace, increasing by 0.8 percent per year. Among males, casual manufacturing wages grew by 11 percent (1.1 percent per year), casual wages in services by 10 percent (0.9) and in trade, they stagnated (table 3.5). Similar trends occurred in median wages.

3.17 **Among females, agricultural wages grew faster than males and faster than female non-agricultural rural casual wages.** Agricultural female wages increased by 3.2 percent annually during the same period whereas female casual non-agricultural wages grew at 2.4 percent (table 3.5).

Table 3.5: India, Uttar Pradesh: Trends in real wages (in 1994 prices) across employment sectors

	Male				Female			
	1994	2000	2005	change (percent)	1994	2000	2005	change (percent)
Rural								
Casual								
Agriculture	21.8	23.6	27.9	*28%*	16.2	18	22.9	*41%*
Manufacturing	28.5	32.1	31.3	*10%*	n/a	n/a	n/a	n/a
Trade	29.6	27.7	28.3	*-4%*	n/a	n/a	n/a	n/a
Services	30.7	32.3	33	*7%*	n/a	n/a	n/a	n/a
All casual non-agriculture	29.7	32.2	32.4	*9%*	19.5	22.9	25.3	*30%*
Regular								
Manufacturing	50.5	52.7	45.5	*-10%*	n/a	n/a	n/a	n/a
Trade	23.6	22.2	34.5	*46%*	n/a	n/a	n/a	n/a
Services	70.5	95.4	100.6	*43%*	38.4	50.3	63.3	*65%*
All regular	65.2	80	73.2	*12%*	38.4	50.3	63.3	*65%*
Urban								
Casual								
Agriculture	24.2	33.5	28.9	*19%*	21.1	23.1	16.3	*-23%*
Manufacturing	41.1	33.8	31	*-25%*	n/a	n/a	n/a	n/a
Trade	31.4	30.9	22.3	*-29%*	n/a	n/a	n/a	n/a
Services	34.2	33.3	39.4	*15%*	n/a	n/a	n/a	n/a
All casual non-agriculture	36.8	33.2	35.1	*-5%*	19.7	24.1	20	*2%*
Regular								
Manufacturing	61.4	62.1	57.9	*-6%*	29.2	29.9	23.1	*-21%*
Trade	41.9	46.6	56.2	*34%*	n/a	n/a	n/a	n/a
Services	89.2	129.3	129	*45%*	57.6	67.5	89.9	*56%*
All regular	78.1	96.7	95.6	*22%*	54	65.1	84.2	*56%*

Note: Data are not provided when the cell sizes as too small.

[25] The NSS surveys collect information on wage and salary earnings for work done over the last seven days in so-called Shedule-10. The survey also collects information on wages in cash and in kind. In this section we report statistics for *daily wages*. Daily wages for each occupation are obtained by dividing total wages (in cash and in kind) by the total number of days in that occupation. Following Kijima and Lanjouw (2004), we use information for each worker on the average daily wage across all occupations. Nominal wages (in Indian Rupees) are deflated to 1993 values in urban and rural areas, respectively, by using a price deflator with time and regional variations.

Agricultural casual wages reflect a return to a relatively homogenous type of activity. On the other hand, non-agricultural casual wages might reflect returns to several activities that are less uniform in space and time. Trends in non-agricultural wages are likely to mirror a change in the composition of casual wage employment as well as a change in returns to a given activity. Sign R. 2007, "Economic Reforms and Well Being of Rural Labor in India: an Inter-Regional Analysis," examined trends in manual non-agricultural wages (which are more uniform than all non-agricultural wages), and found that they exhibited trends that were broadly similar to those presented in this report.

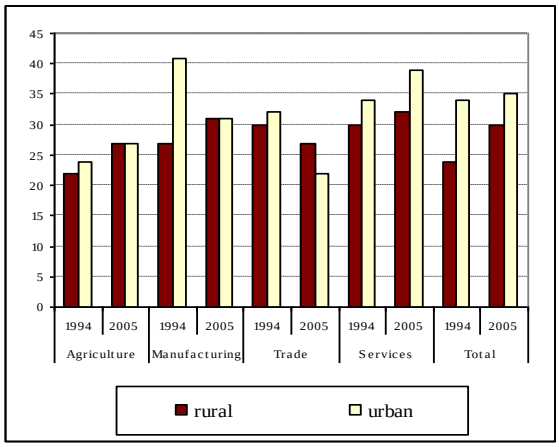
3.18 Growth in casual wages in urban areas lagged. Among males, agricultural wages grew by 1.6 percent per year in real terms and casual wages in services by 1.3 percent. Casual wages in manufacturing and trade declined quite substantially, losing from one-quarter to one-third of their value in real terms (table 3.5). Female wages declined in agriculture and stagnated in non-agriculture.

3.19 In the formal sector, male wages grew by 1.1 percent annually and 1.9 percent in rural and urban areas, respectively. Formal wages grew in services and stagnated in manufacturing. Among males, formal real wages in services grew faster than in other industrial groups. Formal real wages increased by 3.4 percent in urban and 3.3 percent in rural areas. Furthermore, formal wages in services grew at a slightly faster rate for females (4.1-4.4 percent). They also represented the largest increase for women across all industrial groups. Over 60 percent of formal service jobs are in the public sector. These increases reflect a wage-setting mechanism rather than changes in productivity or market conditions. Formal manufacturing wages, which are mostly in the private sector, remained stagnant for both men and women.

3.20 In terms of regional patterns, the rural Western region stands out for the slowest growth in agricultural, casual non-agricultural and formal wages across urban and rural areas as well as for men and women. In absolute terms, casual wages remained the highest in the Western region. Notwithstanding slow growth in rural agricultural wages in the Western region, the absolute level of real wages there remained the highest of any urban and rural region. Regarding non-agricultural rural casual wages, those in the Central region are approximating those in the Western region. In urban areas, wages in the Central and Western regions came quite close to one another, while wages in the Southern and Eastern regions remained lower.

3.21 Between 1994 and 2005 there was a compression in casual wages across many dimensions. Male and female differentials narrowed, so did urban and rural differentials. Differentials across agriculture, manufacturing, trade and services also declined. Compression in male-female wage differentials occurred because female wages increased faster than males. This could explain the increase in the labor force participation by females based on principal and subsidiary activity. The wage differential between urban and rural casual wages narrowed. This was due to the slow growth in the urban sector which, in turn, was driven by underperformance in manufacturing and services. This compression of urban-rural wage differentials had the potential to stunt migration from rural to urban areas. As a result, labor freed from agriculture put pressure on non-agricultural rural wages and prevented them from increasing.

Figure 3.6: Uttar Pradesh: urban and rural average casual wages



3.22 Male casual non-agricultural wages declined in urban areas of the Eastern, Southern and Western regions. This decline eliminated any "urban wage" premium in these regions. Urban wages among males increased only in the Central region. After controlling for workers' skills, regression results show that "urban premium" occurred only in the Central region.

Table 3.6: Urban wage premium (in percent) for casual male wages, controlling for industry and human capital, Uttar Pradesh

	1994		2005	
	coef	se	coef	se
Western	4.892***	1.209	2.779	1.049
Central	3.139***	2.014	7.555***	1.647
Eastern	6.688***	1.794	-4.364***	1.693
Southern	10.506	2.927	-0.064	2.916

note: significance at .01 - ***; .05 - **; .1 - *

3.23 **In urban areas, the differential between regular and casual wages has gone up for males.** The bulk (60 percent) of formal employment among males is in the public sector. Public sector wages, set centrally, are adjusted for changes in the cost of living. Formal and especially public jobs are better paid (see Glinskaya and Lokshin 2007). They also offer greater security. It is argued that in India the labor markets are segmented -- with little mobility between formal and informal jobs. An increase in the differential between casual and regular jobs in urban areas leads to further segmentation of the labor markets -- even though the supply of formal jobs is not increasing. An influx of labor from agricultural jobs to the cities puts downward pressure on casual urban wages. This leads to decreased migration and downward pressure on non-agricultural rural wages.

3.7 Child labor

3.24 **Regional trends in poverty and real wages explain trends in child labor.** It has declined in rural areas and increased in urban. The literature shows that children under the age of 15 tend to enter the labor force to supplement household income. Usually this is due to a decline in the household's disposable income because of a setback of some kind. It has also been observed that the growth in wages makes working attractive and pulls children into the labor force, even in the absence of income setbacks.[26] Patterns of children's labor force participation in UP suggest that in the mid 2000s boys responded to the changes in household income. Particularly in urban areas, boys entered the labor force to maintain the standard of living in response to the slow down in earnings among adults. In contrast, in rural areas, the LFP of 10-15 year olds declined, concomitant with the increase in wealth. In rural areas, the LFP of 10 to 15 year old boys declined from 14 percent to 9 percent (tables 3.7). The largest decline came from the Southern region. This region had the highest growth in income and wages. In urban areas, the LFP for the same group slightly increased. That increase came from the Western region, which also witnessed the most sluggish growth of all regions. Trends in LFP based on subsidiary status are similar to those based on principal status, but the absolute levels are substantially lower. In absolute levels, the LFP of 10-15 year olds in urban areas is now higher than in rural areas.

Table 3.7: India, Uttar Pradesh 10-15 year old boys who work (percent)

	Rural		Urban	
	1994	2004	1994	2004
In principal activity				
Western	15.2	9.1	12.7	14.6
Central	17.3	12.4	10.4	9.6
Eastern	11.2	7.0	11.0	11.8
Southern	17.0	6.3	10.4	1.5
Total UP	14.1	8.7	11.7	12.3
In subsidiary activity				
Western	7.9	5.3	1.3	4.0
Central	8.2	11.1	2.3	1.6
Eastern	5.3	3.5	2.2	1.5
Southern	6.7	6.6	2.6	1.6
Total UP	6.9	5.7	1.8	2.9

3.8 Migration[27]

3.25 Based on the 2001 census, 3.8 million individuals left Uttar Pradesh during the last decade compared to 1.1 million individuals who came to UP. The net out-migration from the state was 2.7 million or about a two percent annual out-migration rate for the state.[28] UP has the largest number of net out-migrants, followed by Bihar with 1.7 million net out-migrants. A comparison of in- and out-migration trends between 1991 and 2001 is difficult because Uttaranchal was included with UP in the 2001 Census. Unseparated data show that during the 10 years preceding the census, the number of in-migrants nearly doubled. This figure could be an overestimate because it reflects Uttaranchal as well as UP. The number of out-migrants increased by 70 percent. In terms of the overall stock of interstate migrants to UP (those

[26]In Nepal in the mid-200s, an increase in male migration and tightening of the rural labor market led to substantial growth in wages and an increase in the LFP among children. See World Bank 2005, "Resilience amidst Conflict", Nepal Poverty Assessment.

[27]This section is based on 2000 Census data and focuses on decadal migration (that is on those for whom the time since migration is 10 years or less, unless specified otherwise). Important and potentially large (according to the anecdotal evidence) flows of temporary migration from UP could not be analyzed in this report because of the lack of data. It would be worthwhile to collect data which would allow for an analysis of the determinants, consequences and main attributes of temporary migration.

[28]Census 2001, Statement 7 based on table D2, Census of India 2001

from other states and from abroad), the 2001 Census puts it as slightly less than three million or 1.8 percent of the total population of the state.

3.26 **The flow of out-migrants (those who move outside of UP) have an overrepresentation of men.** The flow of in-migrants to UP have an overrepresentation of women. The flow of migrants within UP (intra-state migration) is predominantly women. Among the 3.8 million individuals who migrated out of UP in the last 10 years, 2.2 million were men and 1.6 million were women. Among the men, 70 percent of migrants moved for work-related reasons. This was true for slightly more than four percent of the women. For women, marriage and moving with the household was the overwhelming reason to move. Among the 1.1 million who migrated to UP, women represented 0.7 million and men 0.4 million. Women mostly cited "marriage" as the reason for moving to UP. Among the men who moved to UP, work-related reasons and moving with the household were cited most often. Those who moved within UP in the last 10 years comprise about nine million persons -- 1.5 million were males and 7.4 million females. Once again, the primary reason for women to move was marriage and moving with the family.

3.27 **Economic migration is most common for men migrating out of UP and to urban areas**. For men, economic or work-related reasons represent about 30 percent of all reasons to migrate within UP and about 40 percent of the reasons to migrate outside of UP. For women, economic reasons represent two and three percent of inter and intra-state migration flows, respectively. Among men who moved to rural areas within UP, 24 percent moved for economic reasons. This was true for 41 percent of men who moved to urban areas of UP. Men who migrated out of UP cited economic reasons in more than 65 percent of cases. Women did so in five percent of cases. There was only one type of migration where the numbers of men and women migrating for economic reasons were close to one another -- rural intra-district migration.

Table 3.8: Decadal migrants in Uttar Pradesh

	All decadal migrants (number)			Economic migrants as a share of all migrants (percent)		
current place of residence	persons	males	females	persons	males	females
Intra-state migration (those who move within UP)						
Total	8,969,367	1,536,888	7,432,479	7	33	2
Rural	6,919,590	697,416	6,222,174	4	24	1
Urban	2,049,777	839,472	1,210,305	19	41	3
Inter-state migration (those who move outside of UP)						
Total	3,810,701	2,156,885	1,653,816	40	67	5
Rural	905,587	417,951	487,636	33	64	7
Urban	2,905,114	1,738,934	1,166,180	42	67	4

Source: 2000 Census.

3.28 Urban areas of Maharashtra, Delhi and Gujarat are the top three destinations for those who migrate out of UP for economic reasons. The top three rural destinations are Haryana, Uttaranchal and Delhi.

3.29 **In-state rural-to-urban migrants tend to move to the urban areas of the Western and Central regions.** Rural-to-rural migrants tend to go to the Eastern region. Out-of-state migrants tend go to the Western region, except for urban-to-rural migrants who tend to move to the Eastern region (table 3.8). In terms of the distribution of rural-to-urban migrants, the urban areas of the Western and Central regions have attracted almost equal shares (more than 40 percent each). As a percentage of the non-migrant male population, the density in the Central region is more than twice as high. Urban areas of the Central region are also more likely than other regions to attract male work migrants from all over the state rather than from the same district. Economic migration from out of state to UP is quite low. Only in urban

areas of Western UP do out-of-state economic migrants from rural areas make up a sizable (almost five percent) of the population.

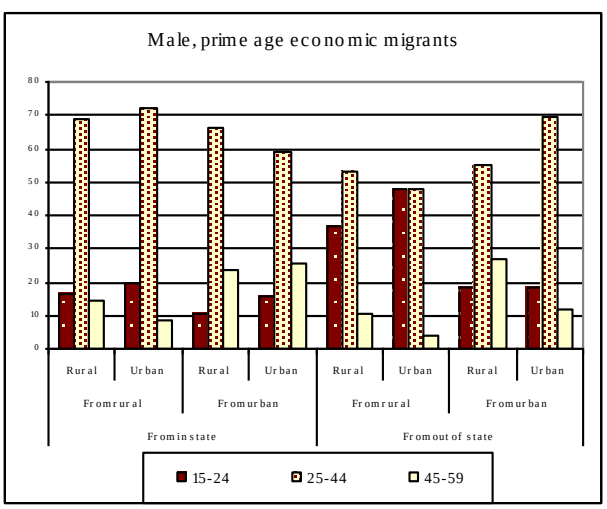
Table 3.9: Characteristics of Migrants in Uttar Pradesh: economic migrants, male, 15-60 years old, migrated years preceding the survey, 2000

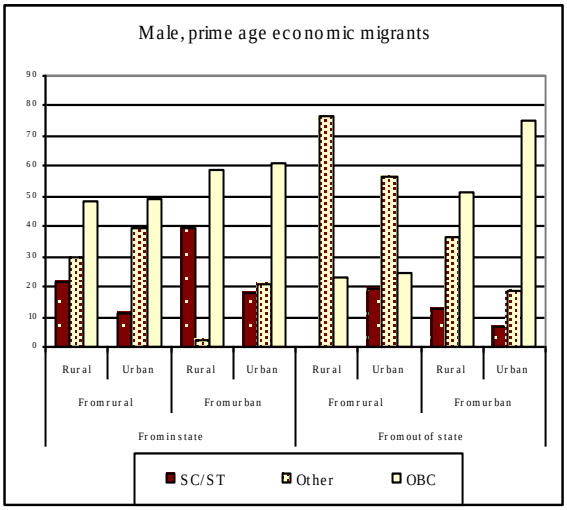
	Migrant origin							
	From in state				From out of state			
	From rural		From urban		From rural		From urban	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Panel A: Distribution of migrants within regions								
Western	24.4	41.3	26.2	64.9	84.5	94.3	0	90.3
Central	13.4	44.2	18.8	11.9	0	1.8	0	4.4
Eastern	60.7	13.3	54.9	23.2	15.5	3.9	100	5.3
Southern	1.5	1.2	0	0	0	0	0	0
Total	100	100	100	100	100	100	100	100
Panel B: Migrant population as a share of the total male population 15-60 years old								
Western	1.5	9.7	0.5	5.1	0.4	4.8	0.1	1.6
Central	0.5	19.5	0.2	3.0	0.1	0.4	0	0.4
Eastern	1.3	11.4	0.4	5.4	0.1	0.9	0.3	1.1
Southern	0.5	3.8	0.2	2.1	0	0	0	0.3
Total	1.2	12.7	0.4	4.4	0.2	2.6	0.2	1.1

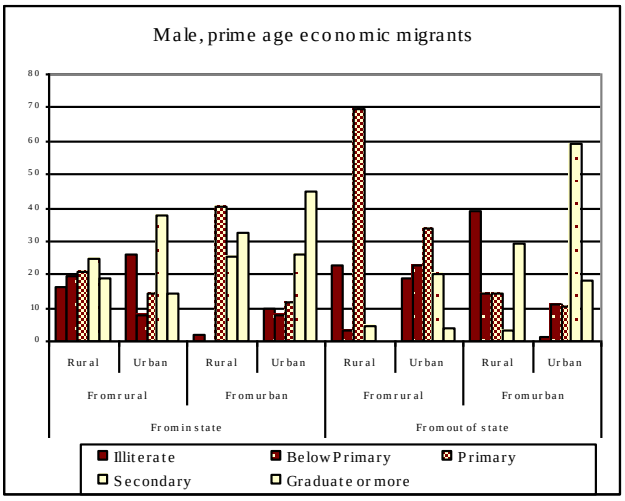
Source: Schedule 10, 1999-200 NSS 55th round

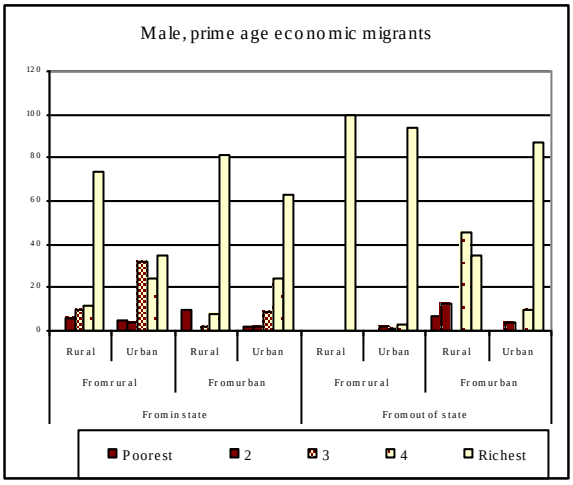
3.30 **Within the state, male economic migrants tend to be overrepresented in the middle and top quintiles of PCE distribution.** Male economic migrants in UP from within the state tend to be in the middle age group (25-44), (figure 3.7). SC population is overrepresented among in-state rural-to-rural and urban-to-rural flows. Other backward castes (OBC) and the majority population are overrepresented among those who come to urban and rural areas of UP from other states (figure 3.7). The illiterate population of migrants is overrepresented among those who moved from rural to urban areas (figure 3.7). Those with a secondary education are overrepresented among those who moved from rural to urban areas within the state while in-state graduates tend to move from urban to both urban and rural areas. This latter pattern most likely reflects public sector transfers. In terms of their current economic position, male migrants are very much overrepresented among the top quintiles -- with the exception of migrants who go from rural to urban areas. They are overrepresented in the middle quintiles (figure 3.7).

Figure 3.7: Characteristics of Migrants in Uttar Pradesh, 2000 (percent in each category)









3.31 A large portion of economic migration within UP is driven by those who move from one regular job to another or who take up a regular job. Out-of-state migrants take up non-farm casual jobs. Migration is clearly associated with improvements in occupational status, but the patterns of within and out-of-state migration are distinctly different. A large portion of the flow of within-state migrants is made up of those who go from one regular job to another (see table 3.9). The holding of regular jobs after migration tends to increase as a share of all occupations. Within-state economic mobility also results in an increase in non-agricultural self-employment. For in-state rural-to-rural migrants, agricultural casual jobs are overrepresented as past occupations, but they fall to the state average as current occupations. Non-farm self-employment jobs are underrepresented before migration and are at the state average after migration. Both patterns indicate that mobility is associated with upward occupational change.

3.32 The majority of those who came to rural UP from out of state came from casual agricultural jobs. Subsequently, they took up non-farm casual jobs. Those who moved from out of state to urban areas were not working; they represented more than 40 percent of all rural to urban out-of-state migrants). But upon moving to UP, they took up non-farm casual jobs, self-employment and regular jobs. Each of these categories represented about one-third of the migrant pool. A fraction of those who moved from urban, out-of-state areas to UP took up cultivation in rural parts of the state and regular jobs in urban areas. The wages of migrants tend to be higher than that those of non-migrants (table 3.10).

Table 3.10: India, Uttar Pradesh: Occupations and wages of migrants, based on place of origin and current residence 2000

	Migrant origin							
	From in state				From out of state			
	From rural		From urban		From rural		From urban	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Current Occupation								
Agricultural Laborer	13	0	0	0	14.1	0	19.6	0
Cultivator	6.7	0.9	5.7	0	0	0	53.4	0
Nonfarm Regular	47.7	56.3	73.3	70	16.8	33.3	7.1	70.5
Nonfarm Casual Labor	14.6	7.6	19	0.7	39.6	37.3	0	2.7
Nonfarm Self Employed	17.1	35.1	2	29.3	0	29.4	19.8	26.8
Agricultural Regular	0.9	0	0	0	29.6	0	0	0
Total	100	100	100	100	100	100	100	100
Past Occupation								
Agricultural Laborer	17.2	6.4	0	0	58.3	6.9	0	1
Cultivator	19.3	36.5	0	2.8	16.9	11.8	38.9	0
Nonfarm Regular	30.7	10.4	38	56.7	0	4.4	16.6	34.8
Nonfarm Casual Labor	18	1.4	9.4	2.2	7.4	29	0	4.8
Nonfarm Self Employed	7.4	27.5	2.9	21.5	12.3	6.5	22.6	12.4
Agricultural Regular	3.6	0	30	0	4.8	0.5	0	0
Not in labor force	3.9	17.8	19.7	16.7	0.4	41	21.9	47
Total	100	100	100	100	100	100	100	100
Wages								
Migrants, non farm regular	99	81	121	168	n/a	71	n/a	199
Non-migrants, non farm regular	76	75	76	75	76	75	76	75
Migrants, non farm casual	36	39	n/a	n/a	n/a	50	n/a	n/a
Non-migrants, non-farm casual	32	31	32	31	32	31	32	31
Migrants, farm casual	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Non-migrants, farm casual	24	34	24	34	24	34	24	34
Migrants, total	79	79	107	164	56	61	n/a	196
Non-migrants, total	39	59	39	59	39	59	39	59

3.33 Receipt of remittances also indicates mobility of one of the household members. In 1994, 9.6 percent of households reported receiving remittances. The rate was highest in the Eastern region with 15.4 percent of households receiving remittances, and the lowest in the Western region, where 5.3 percent did. (Data on household income from remittances were collected in 1994 in 50th NSS round, Schedule 1, but this question was dropped in the 55th and 61st NSS rounds. Therefore 1994 is the only year for which this information is available). In 1994, roughly one out of every ten households in UP received remittances. The data reveal certain patterns. Receipt of remittances was more common in rural compared to urban areas. Female-headed households were seven times more likely to receive remittances than households headed by males. This indicates a pattern for male heads of households to migrate temporarily and in doing so leave behind wives and other family members. The wives, in turn, would be dependent on the remittances the males would send. When the heads of household worked in agriculture, they were four times more likely to receive remittances. This indicates that agricultural laborers were more likely to migrate temporarily compared with men in other occupations.

Table 3.11: India, Uttar Pradesh: Probability of receiving remittances by background characteristics, 1994

	Household head status:						
	Rural	Urban	Male	Female	In agricultural occupations	In non ag. occupations	Total
Western	5.3	5.1	3.5	32.9	2.5	7.2	5.3
Central	6.5	8.4	4.8	41.3	2.8	9.0	6.9
Eastern	16.1	10.3	11.6	49.8	5.1	19.8	15.4
Southern	8.6	12.5	8.3	31.7	2.3	12.5	9.6
Total	10.2	7.5	6.9	42.6	3.4	12.9	9.6

3.34 Ultimately to create more jobs, entrepreneurs have to decide to set up and expand their businesses in UP. Following "India's Employment Challenge: Creating Jobs, Helping Workers" World Bank (2006b), this report notes that improvement in investment climate factors that currently dampen investment, productivity growth and job creation are needed in UP. These include providing law & order, protecting property rights, controlling corruption, improving policy and tax administration, investing in infrastructure in a sustainable manner, and increasing access to finance. The cost of most infrastructure services is estimated to be 50-100 percent higher in India than in China, and is a particularly binding constraint. Manufacturing and tertiary sector regulations that constrain factor mobility through raising barriers against entry, exit and trade, such as the SME reservation policies, serve to dampen investment and competition.

3.35 Further, expanding use of contract labor is a priority in UP. Certain specialized and supporting occupations (cleaning, security, maintenance, housekeeping, laundry) that "naturally" tend to contractual work for a variety of industries should be first in formalizing contract labor.

HIGHLIGHT 3.1. URBAN DEVELOPMENT AND TOWNSIZE

3.1.1 Between 1991 and 2001, India's urban population increased by 66 million from 217.6 million to 283.6 million, which represents a growth rate of 30.3 percent. One-third (20.5 million) of this increase was due to migration from rural to urban areas.[29] The urban population in UP grew somewhat slower than in India as a whole; it increased from 27.7 million to 34.5 million. According to the 2001 Census, the urbanization rate in UP was 21 percent, which is lower than 27.8 percent for all of India. Among the major states, there were just two in 2001 that had a lower urbanization rate than UP, Assam which had an urbanization rate of 13 percent and Orissa at 15 percent.

3.1.2 The majority or slightly more than 50 percent of the entire urban population of UP lives in the Western region (table 3.1.1). The Central and Western regions are each home to slightly more than 20 percent of the urban population; the remaining six percent lives in the Southern region. In terms of the distribution of population, the single largest concentration is in megacities (one million or more), which house almost one-quarter of all of UP's urban population (table 3.1.1). Large cities (500K-1M) house 13 percent of the urban population. Twenty-one percent of the population resides in what is usually called mid-sized cities, those with a population from 100 to 500K. The remaining population is in small towns of various sizes (those with a population of fewer than 100K).

Table 3.1.1: India, Uttar Pradesh: Distribution of urban population across regions and town size

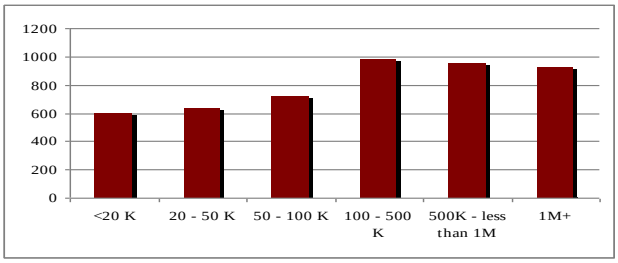
region	distribution of population	<20K	20-50K	50-100K	100-500K	500K -- <1M	1M+	Total
Western	51.5	14.88	18.77	11.03	23.6	17.42	14.31	100
Central	22.0	7.54	13.58	3.00	10.11	0.00	65.77	100
Eastern	20.9	22.97	18.14	10.07	17.46	18.66	12.7	100
Southern	5.6	23.02	10.05	21.69	45.25	0.00	0	100
Total	100	15.4	17.01	9.65	20.55	12.86	24.53	100

Source: NSS 61st round, Shedule1, State Sample. Calculations of DES and WB staff
Note: According to the 2001 Census, "million plus" cities in UP comprise Agra (1,331,339), Allahabad (1,042,229), Kanpur (2,715,555), Lucknow (2,245,509), Meerut (1,161,716), and Varanasi (1,203,961).

3.1.3 Four regions of UP have quite different urban structures. The Western region is characterized by a concentration of mid-size cities which house almost one-quarter of its urban population. Sixty-five percent of the urban population in the Central region lives in "metropolitan cities," with a large concentration in the Kanpur and Lucknow megapolis. The Eastern and Southern regions have a heavy concentration of their urban population in small and medium-sized towns whose population is below 100,000.

3.1.4 On average, the population in small towns tends to be poorer. The relationship between the size of township and income level is concave; the average per-capita expenditure is the highest in mid-size cities (100-500K), figure 3.1.1. The industrial structure of townships offers some explanation for this pattern; the concentration of formal industries in the larger cities does also (figure 3.1.2).

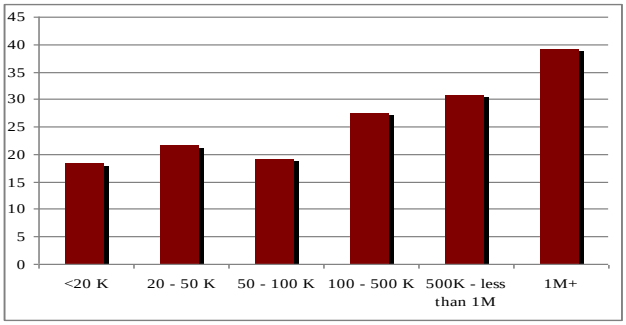
Figure 3.1.1: Real per capita expenditure in Uttar Pradesh, by the city size, urban areas, 2005



[29]The bulk of India's migration, however, is from rural to rural areas; 50.3 million individuals moved from rural to rural areas in the last decade. Rural to rural migration is mostly intra-state and due to marriage. For interstate migration, the flows are mainly toward urban areas. (Migration Data Highlights, Census of India 2001, Table D-2)

3.1.5 The size of the township has important implications for urban development strategies. In a state heavily dependent on agriculture and whose population tends to live in rural areas, small towns usually serve as market towns; they offer the opportunity to bring buyers and sellers together. Marketing infrastructure and a conducive institutional framework are important for their development. Medium-size cities offer the benefit of economies of scale for industries located there and can attract larger suppliers. In large towns, industries could agglomerate, leading to further increases in productivity.

Figure 3.1.2: Population living in households headed by a regular salary earner, urban areas, 2005



Western region

3.1.6 Neither the urban nor the rural areas of Western UP had much economic growth in the last decade. Between 1994 and 2005 in urban UP, household per capita expenditures grew by a meager 8.6 percent (0.75 percent annually). This contrasted sharply with a 4.4 percent annual growth in urban centers of the Central region, see Chapter 1. This appears counterintuitive; Western UP is a destination for a significant percentage of all private investment in the state. Almost 31 per cent of new private investment in UP came to the Noida and Ghaziabad districts of Western UP. More than 73 per cent of all completed investments between 2002-05 were accounted for by only three districts – Ghaziabad, Gautam Budh Nagar (both bordering Delhi) and Sonbhadra.[30] Western UP is considered an IT Hub of North India with software experts next to Karnataka.

3.1.7 It is possible growth was limited in the Western region because production is limited to NOIDA/greater NOIDA in the National Capital Region. There was no "trickle down" effect to the region as a whole as there was in Karnataka and the other Southern states. It would be important to analyze patterns of public infrastructure investments in the Western region to see if necessary components are missing.

3.1.8 Urban western UP has the highest concentration of manufacturing (table 3.1.3). Manufacturing jobs are concentrated in so-called medium-size cities (100-500K) and also in megacities. Almost one-quarter of the urban population of Western UP resides in medium-size cities; these cities have the potential to further increase the concentration of specialized manufacturing and to creating more jobs in that sector. The Western region also has a greater percentage of agricultural jobs in urban centers than other regions. These jobs are mostly concentrated in small cities (table 3.1.2).

Table 3.1.2: India, Uttar Pradesh, Western region
distribution of urban population across townsize and industry of household head employment

Town type	Distribution of population	Industry of employment of the household head				
		Agriculture	Manufacturing	Trade	Services	Total
<20K	14.88	21.22	8.2	34.73	35.85	100
20-50K	18.77	18.01	12.85	28.6	40.53	100
50-100K	11.03	9.33	15.6	38.87	36.2	100
100-500K	23.6	6.4	29.74	28.19	35.68	100
500K -- <1M	17.42	7.22	22.41	28.05	42.32	100
1M+	14.31	2.23	31.74	21.01	45.02	100
Total	100	10.65	20.81	29.38	39.15	100

Source: NSS 61st round, Shedule1, State Sample. Calculations of DES and WB staff

[30] CMIE capital expenditure data on medium to large projects in industry and services sectors, 2002-05.

3.1.9 This industrial and demographic distribution, in addition to proximity to markets that are in great demand in Delhi, call for a two-pronged development focus: manufacturing in medium-size cities and agricultural marketing in small towns. The advantage of medium-size cities lies in specialized manufacturing activities for which they have a comparative advantage. Currently, the bulk of the manufacturing jobs are in textiles, rubber and plastic products, non-metallic mineral, fabricated metal products and furniture (table 3.1.3). Looking ahead, the composition of the manufacturing output and employment will be responding to the changed in demand, but medium-size cities will continue providing the environment necessary for realizing economies of scale and establishing linkages with suppliers and distributors. For the small towns (which house a substantial proportion of the population) the key is to become true market towns.

Table 3.1.3: Uttar Pradesh, Western region: Composition of manufacturing employment (ISIC 2 digit), total =100 percent

	percent		percent
food products and beverage	5.73	**mineral products**	**16.74**
tobacco	0.26	basic metals	0.64
textiles	**12.11**	**fabricated metal products**	**11.56**
apparel	9.68	machinery and equipment	1.96
leather	0.48	electrical machinery	0.66
wood products	7.21	radio and television	1.34
paper and paper products	3	medical products	1.2
printing	1.75	motor vehicles	0.09
chemicals	2.09	**furniture**	**11.06**
rubber and plastics	**11.96**	recycling	0.47

Central region

3.1.10 Growth in PCE in urban centers in the Central region amounted to 60.6 percent over 11 years (or 4.4 annually); this was the highest of all of UP's urban centers. The tertiary sector led this growth (6.3 percent), but the manufacturing sector also registered a good level of growth, namely 4.3 percent. [31] Economic growth resulted in a nine percentage point decline in poverty over this same period, the second fastest decline in the state after the Southern region.

3.1.11 The Central region's urban structure is different from the rest of the state. Medium-size cities are practically nonexistent. The majority (more than 65 percent) of the urban population is concentrated in megacities (Kanpur and Lucknow); about 20 percent of the population lives in small towns. The urban population in Central UP grew faster than other regions mostly because of a great migration from rural areas of the state. Between 1991 and 2001, for example, Kanpur grew at 2.82 percent per annum while Lucknow grew at 3.06 percent. These are comparable to growth rates of such cities as Bangalore which grew at 3.2 percent and greater Mumbai which grew at 2.62 percent during the same period[32]. In fact, the urban areas of the Central region have the highest percentage of in-state rural migrants in their workforce compared to other regions of UP (table 3.1.4).

[31] Anecdotal evidence suggests that the electronic industry is booming in the UP-DLHI-NCR and Lucknow-Kanpur corridors.
[32] See Sivarmakrishnan K.C., A. Kundu and B.N. Singh eds. (2005) "Handbook of Urbanization".

Table 3.1.4: Male Economic Migrants in Uttar Pradesh as a percent of working population (males 15-60)

	Migrant origin and destination							
	From in-state				From out of state			
previous place of residence	From rural		From urban		From rural		From urban	
current place of residence	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Western	1.5	9.7	0.5	5.1	0.4	4.8	0.1	1.6
Central	0.5	19.5	0.2	3	0.1	0.4	0	0.4
Eastern	1.3	11.4	0.4	5.4	0.1	0.9	0.3	1.1
Southern	0.5	3.8	0.2	2.1	0	0	0	0.3
Total	1.2	12.7	0.4	4.4	0.2	2.6	0.2	1.1

3.1.12 If these trends continue (which may or may not happen due to the declining "urban premium," see Chapter 3) megacities in the Central region will attract labor from rural areas. Managing urban development will become increasingly important. The current industrial base in megacities is not very broad. Many of the jobs are in services, regular jobs in public administration. New jobs have been created, but mostly in construction. While construction could continue to provide jobs to city newcomers, there are also jobs in food products and beverages, textiles and leather tanning. Further diversification is needed. The strategy for urban development in the Central region should be to focus on managing urban development and stimulating industrial diversification.

Table 3.1.5: India, Uttar Pradesh, Central region: distribution of urban population across townsize and industry of household head employment

Town type	Distribution of population	Industry of employment of the household head				
		Agriculture	Manufacturing	Trade	Services	Total
<20K	7.54	19.75	10.69	35.92	33.64	100
20-50K	13.58	11.37	17.37	29.96	41.29	100
50-100K	3.00	0.74	19.48	35.46	44.32	100
100-500K	10.11	6.22	13.15	45.36	35.28	100
500K -- <1M	-	-	-	-	-	100
1M+	65.77	5.06	19.86	27.09	47.99	100
Total	100	6.93	18.16	30.28	44.63	100

Source: NSS 61st round, Shedule1, State Sample. Calculations of DES and WB staff

Eastern region

3.1.13 The Eastern region is the least urban. Slightly more than 10 percent of the population lives in urban areas. In the last decade, this region had the least growth and the least reduction in poverty among all regions of the state. Between 1994 and 2005, PCE grew in the urban Eastern region at 1.6 percent per annum. There was almost no reduction in poverty in urban areas as a result. Two industries, manufacturing and trade, accounted for much of the stagnation; services did slightly better. Small towns are more prevalent in the urban landscape in the Eastern region than elsewhere in UP. Forty percent of the urban population (more than in other regions of UP) lives in small towns that have fewer than 50K inhabitants. Small towns of the Eastern region of UP are particularly disadvantaged (the disparity in PCE between small towns and large cities is especially pronounced here).

3.1.14 With fertile plains and significant agricultural production in the rural areas of the Eastern region, small towns were poised to become market towns for agricultural produce. In fact, trade is the predominant occupation in the small towns here (table 3.1.5). But restrictive marketing regulations and poor infrastructure resulted in a lack of dynamism in these small towns; these constraints didn't allow for effective rural-urban linkages. Although the movement out of agriculture is proceeding quite fast in rural areas, small urban towns will have to be proactive in developing their trade and marketing potential. A forward looking strategy for urban development in the Eastern region should recognize the potential of

small towns to become market towns and engines for growth in rural areas. Such a strategy should be promoted.

Table 3.1.6: India, Uttar Pradesh, Central region:
distribution of urban population across townsize and industry of household head employment

Town type	Distribution of population	Industry of employment of the household head				
		Agriculture	Manufacturing	Trade	Services	Total
<20K	22.97	7.65	20.75	39.29	32.31	100
20-50K	18.14	12.95	18.85	30.01	38.19	100
50-100K	10.07	5.05	29.3	30.91	34.75	100
100-500K	17.46	3.86	14.96	40.1	41.08	100
500K -- <1M	18.66	2.69	5.01	28.2	64.11	100
1M+	12.7	0	16.09	28.06	55.85	100
Total	100	5.82	16.78	33.36	44.05	100

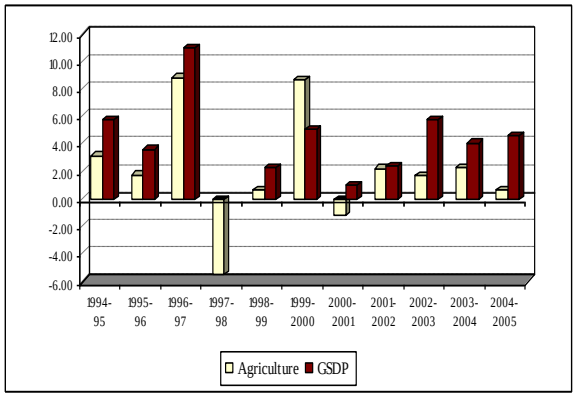
Source: NSS 61st round, Shedule1, State Sample. Calculations of DES and WB staff

CHAPTER 4: RURAL POVERTY AND GROWTH

4.1 Introduction

4.1 In the last decade, agricultural GSDP grew at an average rate of 2.3 percent per year, which is higher than in India as a whole. Overall, real GSDP in UP grew at 4.4 percent, which is lower than India as a whole (figure 4.1). Rural UP achieved this growth with an accompanying reduction in poverty. The poverty rate declined among the self-employed in agricultural and non-agricultural occupations and among casual workers (see Chapters 1 and 2 for poverty profile). And yet, poverty in UP remains a rural phenomenon. Rural areas are home to 80 percent of the population and 82 percent of UP's poor. Rural poverty is higher in the lagging areas of Eastern and Southern UP. However, a substantial share of the rural poor (25 percent) lives in the otherwise prosperous Western region, which accounts for about 35 percent of the rural population. The Eastern region accounts for 43 percent of UP's rural population but 54 percent of its rural poor. The Central region accounts for 18 percent of the rural population and 16 percent of the rural poor.

Figure 4.1: GSDP and agricultural growth rates in 1993-94 price, Uttar Pradesh



4.2 The slower reduction in rural poverty in the relatively prosperous Western region which is blessed with favorable agro-ecological conditions and proximity to Delhi stands in sharp contrast to a substantial decline in poverty in the Southern region – a semi-arid and relatively isolated part of UP (table 4.1). The Central and Eastern regions have experienced sharply different rates of reduction in rural poverty even though their agricultural endowments are very similar. Poverty has declined quite rapidly in the Central region and lagged behind in the Eastern region. The regional differences in poverty trends highlight the importance of agriculture and non-agriculture and the effect they have on one another in reducing poverty. A closer examination of the performance of these sectors and their inter-relationship is necessary before coming up with a strategy to combat poverty in rural UP.

Table 4.1: Trends in poverty across regions and employment groups in Uttar Pradesh, rural areas

	1994	2005	change
Western Region			
Agricultural labor	45.3	46.3	1.0
Self-employed in agriculture	23.1	14.8	-8.3
Self-employed in non-ag.	36.2	26.4	-9.8
Non-ag. casual labor	39.1	39.2	0.1
Central Region			
Agricultural labor	70.2	46.4	-23.7
Self-employed in agriculture	45.4	24.1	-21.4
Self-employed in non-ag.	49.7	32.4	-17.2
Non-ag. casual labor	57.6	46.6	-11.0
Eastern Region			
Agricultural labor	71.7	69.8	-1.9
Self-employed in agriculture	42.3	34.2	-8.1
Self-employed in non-ag.	47.4	42.2	-5.2
Non-ag. casual labor	59.0	55.6	-3.4
Southern Region			
Casual labor	94.3	59.0	-35.4
Self-employed	57.6	34.7	-23.0

4.2 Structure of Production in UP

4.3 **Food-grains dominate agricultural production in UP.** According to the NSS survey of farmers in 2003, the share of food-grains in total cultivated areas ranged from 62.8 percent in the Western region to 96.2 percent in the Southern region (table 4.2). Among food-grains, cereal dominates the allocation of land in all regions with one exception. In the Southern region, pulses account for 62 percent of cultivated land. Apart from food-grains, sugarcane is the most important cash crop when it comes to allocation of land. This is particularly true in the Western region where it accounts for 23 percent of cultivated land. The overall

pattern of crops reflects the comparative advantage of the agro-ecological sector to these areas. Suitable weather, abundant water and the good soil found in the Indo-Gangetic plains of the Western, Central and Eastern regions have encouraged the production of cereals. Similarly, better access to markets in the Western region has prompted a greater degree of diversification in high value crops such as sugar cane, vegetables and oilseeds compared to the rest of the state.

4.4 **The yields of major crops are substantially higher in the Western region.** Except for maize, the yields of major food-grains are much higher in the Western region compared with the rest of UP (figure 4.2). For instance, wheat yields in the Eastern and Southern regions are 60 percent of those in the West; the Central region is at 70 percent. Paddy has exhibited similar gaps in yield. The lower yield of wheat and paddy in the Eastern region is of particular concern because the conditions there are similar to the Western region. In the Eastern region, a substantially higher proportion of land goes for the production of food-grain (86 percent) compared to 63 percent in the Western region. Similar gaps in yield exist for the production of sugar cane and potatoes. Yields in the Eastern and Central regions are 35 percent lower than in the Western region (Figure 4.2). Closing these gaps could be a source of growth that heretofore has remained untapped.

Table 4.2: Share of land devoted to different crops during kharif season, 2003

	cereals	pulses	sugar cane	veges	oil seeds	spices	fruits	fibers	fodder	other
Western	56.4	6.4	23.2	2.2	2.2	0.4	0.9	0.2	7.0	1.0
Central	68.9	9.8	11.6	2.2	4.4	0.4	0.5	0.0	1.9	0.2
Eastern	82.1	3.7	10.2	0.9	1.1	0.1	0.2	0.1	1.4	0.2
Southern	34.0	62.2	0.7	0.0	1.6	0.1	0.1	0.0	1.3	0.0
Total	66.7	10.5	14.4	1.5	2.1	0.2	0.5	0.1	3.5	0.5

Source: NSS 59th round, schedule 33.

Figure 4.2: Yields of major crops (2002-03)
A. Median cereal yields (100kg/ha)

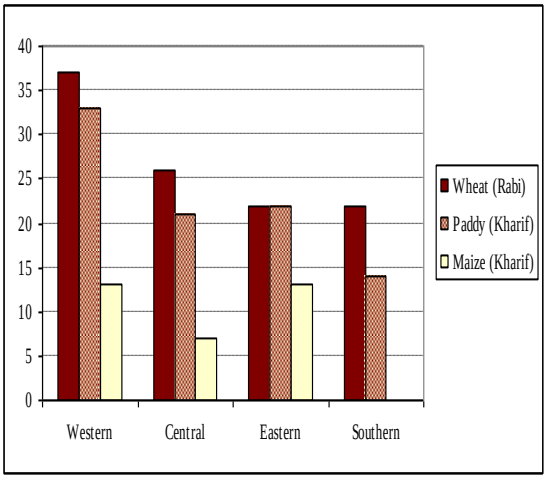
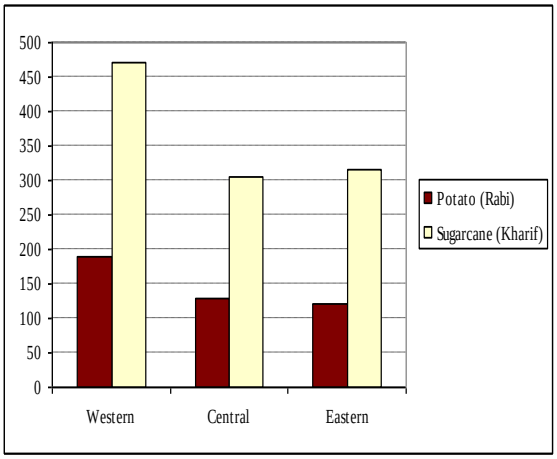


Table 4.3: Determinants of Yields

	Log(Yield (kg/ha))		
	Paddy	Wheat	Sugarcane
Region Dummies			
Eastern	-0.418	-0.533	-0.574
	(10.11)**	(29.07)**	(4.73)**
Central	-0.389	-0.284	-0.55
	(6.62)**	(10.93)**	(3.37)**
Southern	-0.962	-0.384	-1.259
	(4.18)**	(8.54)**	(3.29)**
log (area planted with crop)	-0.13	-0.095	0.041
	(6.78)**	(8.57)**	(0.83)
land irrigated	0.402	0.128	0.516
	(3.06)**	(2.56)*	(1.87)
scheduled caste/tribe	-0.063	-0.089	-0.017
	(1.28)	(3.49)**	(0.11)
other backward class	-0.004	-0.045	-0.152
	(0.1)	(2.10)*	(1.27)
Education level			
literate, below primary	0.001	0.018	-0.145
	(0.02)	(0.52)	(0.95)
primary and middle	0.037	0.008	-0.235
	(0.87)	(0.41)	(1.92)
secondary and above	0.076	0.065	-0.344
	(1.52)	(2.58)**	(2.55)*
accessed extension worker	0.457	0.267	0.234

B. Median cash crop yields (100kg/ha)



	(3.13)**	(4.18)**	(0.96)
Inputs used			
Fertilizer	0.192	0.276	-0.252
	(1.21)	(2.86)**	(0.73)
Manure	0.025	0.05	0.026
	(0.7)	(2.86)**	(0.26)
Seeds	0.009	0.021	0.057
	(0.24)	(1.16)	(0.54)
Pesticide	0.139	0.094	0.043
	(3.75)**	(5.20)**	(0.42)
Constant	2.555	2.999	5.761
	(13.50)**	(28.92)**	(14.54)**
Observations	3124	5040	1038
R-squared	0.09	0.23	0.09

Robust t statistics in parentheses
* significant at 5%; ** significant at 1%

4.5 The results from yield regressions show that irrigation, use of pesticides and visits by extension workers have had a significantly positive effect on yields of paddy and wheat. Consistent with the pattern in figure 4.2, the yields for wheat and paddy are much lower in all regions, compared to the Western region. After controlling for inputs and other characteristics of farms and farmers, paddy yield is lowest in the Southern region; the Eastern and Central regions are second and third lowest, respectively. Surprisingly, wheat is lowest in the Eastern region. The Southern and Central regions are next. The regression results also suggest an inverse farm size and productivity relationship for wheat and paddy, but this relationship may stem from differences in the quality of the land across farms of varying sizes. Except for seed, the use of modern and traditional inputs has had a significant and positive impact on yield. Paddy yield is significantly higher for farmers who use pesticide. Irrigation has had a positive effect on the production of paddy. In contrast, fertilizer seems to have the largest marginal effect on wheat yield. Farmers from disadvantaged social groups (SC/ST and Muslims) have had significantly lower yields for wheat. That could be because they settled in lands of marginal production value.

4.6 **The net receipt per hectare from crop production is higher in the Western region compared with the rest of the state** (table 4.4). Total receipts and expenses for crop production are higher in the Western region. This region also ranks high in net receipts per hectare. The net crop receipts per ha in the Eastern region are only about 57 percent of that in the Western region. The net receipts per ha in the South are even lower, roughly one-half of that in the West. The lower net receipts per ha in the Central, Eastern and Southern regions partly explain the higher incidence of poverty among cultivators in these regions. There are, however, interesting differences in net receipts at the crop level (table 4.4). As Figure 4.3 shows, net receipts from cereals are highest in the Western region and lowest in the Eastern region. In contrast, the return from vegetable production is highest in the Eastern region. Indeed, it is almost three times higher than cereal production. However, less than one percent of the total cultivated land in the Eastern region is devoted to vegetables, compared with 82 percent for cereals. This means that despite large differences in returns, farmers in the Eastern region focus on cereal production. That is because vegetable production requires a higher degree of risk compared to cereal production. The higher risk associated with vegetable production may be due to weather, an unreliable supply of inputs, lack of timely access to markets and other marketing problems. The higher return from vegetable production in the Eastern region offers a powerful incentive for diversification -- if critical bottlenecks are removed.

4.7 UP's regional pattern of crop production suggests opportunities and challenges for raising farm income in areas that lag, such as the Eastern region. The superior performance of crop production in the Western region appears to have resulted from an intensification of cereal production. The success of these efforts allowed increasing diversification into non-cereal crops. Both of these changes contributed substantially higher farm income. Given the comparative advantage of the Central and Eastern regions in producing food-grain, an improvement in productivity could enable greater diversification into non-cereal crops, plus strengthen food security for households. For that to happen would require access to modern inputs, markets and risk mitigation mechanisms as well as flexibility in the functioning factor markets (land and credit).

Table 4.4: Receipts from farming (all crops) in Uttar Pradesh median values, in 2003 prices

		total receipts	total expend.	net receipts	net rec. per ha
Western	<1 ha	27,700	12,900	13,040	9,636
	1-2 ha	88,980	35,560	47,536	11,488
	2+ ha	181,200	77,080	100,850	11,544
	Total	39,600	18,040	18,300	10,169
Central	<1 ha	15,400	7,100	7,910	7,106
	1-2 ha	48,020	19,358	24,206	7,648
	2+ ha	76,200	37,164	42,742	7,977
	Total	20,140	8,800	9,780	7,137
Eastern	<1 ha	12,600	6,334	5,045	5,745
	1-2 ha	48,750	23,186	23,484	5,772
	2+ ha	86,480	38,660	42,270	6,173
	Total	15,840	8,100	6,890	5,778
Southern	<1 ha	15,400	7,324	8,975	5,830
	1-2 ha	32,540	13,908	16,930	4,981
	2+ ha	76,200	24,286	48,320	4,761
	Total	30,400	11,540	15,190	4,981
	UP	21,900	10,272	10,460	7,042

Source: Estimates based on NSS 59th round, schedule 33.

4.8 **Livestock production is also an important source of livelihood for UP's poorer farm households.** Rearing of livestock is an important source of employment and income for small landholders (less than 1 ha of land) in UP. For instance, 25 percent of smaller landholders in the Western and Southern regions reported that rearing of livestock was their main occupation. In the Eastern and Central regions, a smaller percentage of farm households rely on the raising of livestock as their main occupation, but the percentage of these households doubled between 1992 and 2003. The largest increases have occurred in the Central and Eastern regions. The average number of large (cows, buffaloes) and small ruminants (sheep, goats) owned by these households also increased substantially, particularly those with less than 1 ha of agricultural land. The poorer farm households diversified into the rearing of livestock to improve their livelihood. However, access to veterinary services, which are essential to boosting productivity and animal husbandry, remains limited in UP. Only 26 percent of farmers reported using veterinary services. The use of veterinary services is highest in the Western region and higher among relatively wealthy farmers.

Figure 4.3: Median net receipts from selected crops in 2003 prices

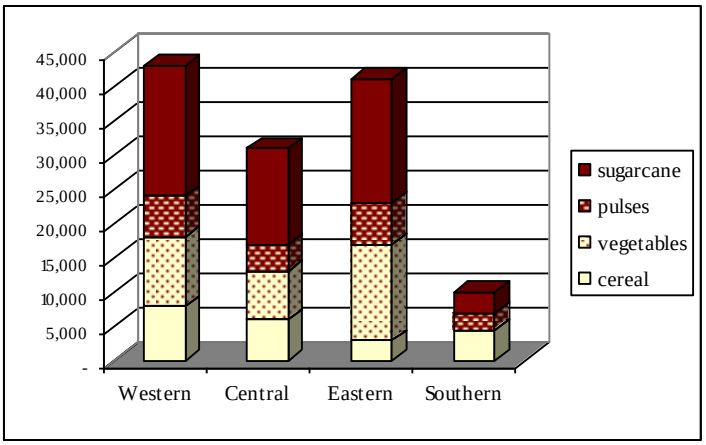


Table 4.5: Farm ownership of livestock, by farm size in Uttar Pradesh, 1992 and 2003.

	Livestock raising as main occupation (percent)		Farmer's Ownership (average number)						Use of vet. services
			Large ruminants		Small ruminants		Poultry		
	1992	2003	1992	2003	1992	2003	1992	2003	2003
Western									
<1 ha	19	24	0.8	1.6	1.2	2.3	0.4	0.4	38
1-2 ha	0	3	2.8	3.3	2.6	1.7	0.7	0.4	45
2+ ha	0	2	3.7	4.5	2.7	3.3	4.2	0.5	58
Total	13	19	1.2	1.9	1.5	2.2	0.7	0.4	41
Eastern									
<1 ha	7	17	1.3	1.7	1.5	2.8	0.2	0.4	22
1-2 ha	0	5	1.9	2.6	2.7	2.2	0.6	0.3	41
2+ ha	1	2	3.2	3.8	1.5	3.4	0.2	0.4	41
Total	6	14	1.4	1.9	1.6	2.7	0.2	0.4	26
Central									
<1 ha	3	12	0.8	1.4	1.1	2.5	0.5	0.8	16
1-2 ha	1	1	2.1	3.7	2.5	3.9	0.8	1.2	24
2+ ha	0	0	2.7	5.1	1.8	1.8	0.9	1.2	29
Total	3	10	1.1	1.6	1.2	2.6	0.6	0.8	18
Southern									
<1 ha	18	25	0.8	2.0	0.6	2.9	0.1	2.0	9.1
1-2 ha	7	5	1.2	3.0	1.4	4.0	0.0	0.9	13
2+ ha	0	5	3.8	4.5	4.9	2.8	0.9	0.5	19
Total	13	15	1.6	2.8	1.8	3.1	0.2	1.3	13
UP	7	14	1.2	1.9	1.4	2.5	0.6	0.6	26

Source: NSS 59th round.

4.3 Factors affecting crop performance

4.9 Removal of critical technical, infrastructural, institutional and socio-economic constraints is necessary to improve farming income through intensification and diversification of crops. Because the supply of land and water is fixed, improvements in farm income will have to be achieved by raising productivity with existing resources. What will help achieve that goal is the following -- access to inputs, markets, information and knowledge, and functioning factor markets.

4.10 **Access to modern inputs.** The use of modern inputs (improved seeds and cropping practices, fertilizer, irrigation) will be essential to enhance agricultural productivity. However, there are important differences in the use of modern inputs, especially seeds and pesticides across regions. Based on an analysis of NSS 59th round, a survey of farmers reveals that those who used chemical fertilizer did not differ significantly between regions -- with one exception (table 4.6). In the Southern region, just 28 percent of farmers reported using chemical fertilizer. In contrast, the state average is 80 percent. The infrequent use of chemical fertilizer in the South may be due to markedly different cropping patterns. Pulse predominates over cereals. There are also systematic differences among farms of different sizes in their use of fertilizer. The percentage of farmers using fertilizer increases as the size of their farm increases. This is true in much of UP – except for the South. About one-half of farmers also rely on manure. There are no significant regional differences in manure usage. Just like chemical fertilizer, the percentage of farmers using manure increases as the farm increases in size.

4.11 **The use of improved seeds is low in all regions except for the Western region** (table 4.6). The use of improved seed is lowest in the Southern region. Only 13 percent of farmers there report using it. More notable is the difference between the Western region and the Central and Eastern regions. In the Western region, about 67 percent of farmers used improved seeds compared to 48 percent in the Eastern region and 34 percent in the Central region. Again, there appears to be a positive relationship between farm size and improved seed usage. Fewer farmers with land that is less than one ha use modern seeds compared to farmers with larger holdings. Overall, the use of pesticides is low in UP. About 45 percent of farmers in the East and West use it. The relationship between pesticide use and farm size is similar to that for seed and fertilizer use.

Table 4.6: Percent of farmers using selected inputs in Uttar Pradesh

		fertilizer	manure	seeds	pesticide
Western	<1 ha	78	46	65	39
	1-2 ha	93	61	75	59
	2+ ha	96	67	77	63
	Total	82	51	67	45
Central	<1 ha	70	34	31	32
	1-2 ha	81	44	41	45
	2+ ha	82	52	47	51
	Total	73	37	34	35
Eastern	<1 ha	87	51	45	40
	1-2 ha	94	67	57	57
	2+ ha	98	70	61	62
	Total	89	55	48	43
Southern	<1 ha	31	49	6.4	7.7
	1-2 ha	28	59	18	5.3
	2+ ha	24	60	19	6.6
	Total	28	55	13	6.7
	UP	80	50	49	40

Source: Estimates based on NSS 59th round, schedule 33.

4.12 **Another factor influencing farmers' use of modern inputs, such as improved seeds and fertilizer, is access to input markets.** The distance to the nearest fertilizer and improved seed dealer indicates accessibility. Based on analysis of the NSS 59th round, about 30 percent of farmers live more than five kilometers away from a seed or fertilizer dealer. The accessibility factor is weaker in the Southern region. About one-half of the farmers there have to travel more than 5km to buy fertilizer. Only one-third of the farmers in the Southern region have access to seed dealers within 5 km. In contrast, there is no significant difference among the Eastern, Central and Western regions in terms of accessibility. Poor roads and transport services in the South add significant costs when it comes to travel time and shipping costs

4.13 **Access to irrigation.** Irrigation is one of the most critical inputs for raising crop yields, diversifying crops and reducing vulnerability to weather. UP has made remarkable progress in bringing cultivated land under irrigation. Irrigation during the Rabi (dry) season reached 91 percent in 2003 (Table 4.7). This represents a slight increase from 1992 when it was 87 percent. Nearly all land dedicated to crops in the Western region is irrigated during the Rabi season. The growth in the percentage of land under irrigation was highest in the Southern region; it rose from 60 percent in 1992 to 78 percent in 2003. Smallholders (less than 1 ha of land) there experienced the largest gain in irrigated land; it went from 48 percent in 1992 to 74 percent in 2003. There is no significant variation in the percentage of irrigated land by farm size.

Table 4.7: Percent of irrigated land of total sown land during Rabi (dry) season in Uttar Pradesh, 1992 and 2003

		1992	2003
Western	<1 ha	93	97
	1-2 ha	95	98
	2+ ha	93	97
	Total	94	97
Eastern	<1 ha	85	90
	1-2 ha	84	90
	2+ ha	73	85
	Total	83	89
Central	<1 ha	88	90
	1-2 ha	82	87
	2+ ha	80	82
	Total	86	89
Southern	<1 ha	48	74
	1-2 ha	72	80
	2+ ha	63	81
	Total	60	78
	Total UP	87	91

Source: Estimates based on NSS 59th round, schedule 33.

4.14 **The regions in UP have tapped their irrigation potential.** The irrigated area in UP has reached about 80 percent of its potential. UP has also used more than 80 percent of its ground water potential. As a result, there is limited room for expansion, particularly in the Western and Eastern regions. And yet, substantial gains in productivity of irrigated land can occur through efficient use of water. Informing farmers about better on-farm water management practices is a first step in that direction.[33]

4.15 **Access to agricultural extension.** The public and private agricultural extension system can help farmers learn about improved farm practices as well as their marketing options. Access to production and marketing information from any source remains very weak in UP, particularly in the Central and Eastern regions. Farmers tend to depend on the mass media—radio, television, and newspapers—as their main source of information (table 4.8). Despite significant government expenditures for agricultural extension, less than 2.3 percent of farmers report obtaining any information from this government system.[34] Farmers in the Western region and those with large land holdings appear to have better access to information about modern agricultural technology.

Table 4.8: Sources of information for farmers in Uttar Pradesh, 2003

		TV	radio	news-paper	input dealer	other farmers	govt. extension
Western	<1 ha	8	16	3	15	29	0.9
	1-2 ha	15	26	9	15	30	2.7
	2+ ha	23	31	15	13	27	7.4
	Total	10	19	5	14	29	1.7
Central	<1 ha	2	13	2	4	8	0.7
	1-2 ha	5	25	7	5	12	5.2
	2+ ha	14	20	12	3	10	3.1
	Total	3	15	3	4	9	1.5
Eastern	<1 ha	4	9	3	5	14	1.9
	1-2 ha	13	19	6	5	15	4.1
	2+ ha	16	32	17	5	18	6.2
	Total	6	11	4	5	14	2.4
Southern	<1 ha	2	8	1	11	21	1.5
	1-2 ha	1	31	2	11	46	4.8
	2+ ha	10	34	1	25	59	9.0
	Total	4	21	2	15	39	4.5
	Total UP	7	15	4	8	19	2.2

Source: Estimates based on NSS 59th round, schedule 33.

4.16 **Farmers' use of credit and access to formal credit (government and commercial banks, credit cooperatives) differ across regions**. Only about one-third of farmers in the Eastern and Central regions reported taking loans compared to about 50 percent in the Western and Southern regions. Approximately 11 percent of farmers in the Eastern region and 17 percent in the Central region reported obtaining loans from a formal credit institution (table 4.9). Access to institutional credit varies positively with farm size. Across all regions, the percentage of farmers with less than 1 ha of land had less access to institutional credit. For instance, in the Western region where access to institutional credit has been more prevalent, 25 percent of small holders borrowed from institutional sources compared to 60 percent of farmers with more than 2 ha of land. The small holders

[33] The average area of the land irrigated through canals is 2,312.29 thousand hectares during *rabi* season and 2,087.87 thousand hectares during *kharif* season. According to the government administrative data this represents 56 percent of the available irrigation capacity in the state.

[34] There is a number of rural *missions* that aim at improving access to extension services and other agricultural inputs. These include National Food Security Mission, Transfer of technology Improvement of Soil health, Subsidy for Seeds, as well as subsidized bio-fertilizer, bio-pesticides and zinc sulphate.

disproportionately relied on informal sources of credit. These differences in access to credit help explain why small holders use fewer modern inputs. This disparity has important implications for a farmer's ability to purchase inputs or to undertake long-term investments on and off the farm.

Table 4.9: Farmers' access to credit in Uttar Pradesh, 2003

		Percent having loan	Median amount, '000 rs	Percent of farmers obtained loans from:				
				Government	Coop	Bank	Family	Other
Western	<1 ha	54	11	2	7	16	12	27
	1-2 ha	52	15	4	16	28	6	16
	2+ ha	54	35	4	20	36	5	9
	Total	54	12	2	9	20	10	23
Central	<1 ha	30	6	1	3	9	11	11
	1-2 ha	46	10	1	13	21	11	11
	2+ ha	35	8	4	8	15	8	4
	Total	33	6	1	5	11	11	11
Eastern	<1 ha	33	5	1	2	5	14	14
	1-2 ha	30	10	1	4	10	12	8
	2+ ha	37	16	3	11	17	4	9
	Total	33	5	1	3	7	13	13
Southern	<1 ha	46	7	0	3	16	9	22
	1-2 ha	49	14	1	4	32	1	21
	2+ ha	60	18	0	9	33	12	23
	Total	51	12	0	5	25	8	22
All UP		40	8	2	5	13	11	16

Source: Estimates based on NSS 59th round, schedule 33.

4.17 **Access to markets.** Farmers' access to functioning output markets is critically important for their choice of crops, use of inputs and overall farm income. Functioning markets can reduce marketing transaction costs which benefits producers and consumers. By linking farmers more closely to markets and consumers, the system signals farmers about new opportunities, guides their production to meet changing consumer preferences based on quantity, quality, variety and food safety. The quality and availability of rural infrastructure (markets, roads, and electricity) are essential to strengthening the links between farmers and the market. The density of wholesale markets in UP is low. Each wholesale market serves an area equaling about 40,000 hectares. This means farmers have to travel longer distances to sell directly to the wholesale markets.

Table 4.10: Facilities at Uttar Pradesh Wholesale markets, 2005

Market characteristics	Unit	
Market Area	Acre	33
Number of Shops	Number	187
Number of shops per acre	number/acre	6
Shop area (average)	Sq. feet	1348
Storage Capacity	Sq. feet	208
Facilities	**Unit (percent)**	
Market area enclosed		78
Market has covered shops		89
Pucca Roads inside market		94
Parking (all vehicles)		44
Bus Station		56
Rail Station		44
Hotels		44
Commercial Banks		72
Post Office		78
Police Station		83

Equipment	Unit (percent)
Large scale weighing machine	39
Grading machine	33
Drying machine	6
Area for drying available	39
Fumigation equipment	6
Mechanized handling machine	0
Cold Storage	0
Warehouse	33
Drainage Facility	
Covered sewer	17
Concrete open sewer	44
Both covered and concrete	6
Earthen open sewer	17
None	17

Source: Estimates based on India Agriculture Marketing Survey, 2005.

4.18 **The wholesale markets remain heavily congested and facilities are few.** Based on a 2005 survey of 18 wholesale markets handling agricultural produce in Uttar Pradesh, these markets are often congested and their infrastructure and services are very limited (table 4.10). For instance, none of the markets offers cold storage. Only 44 percent had parking areas for all types of vehicles. None of the markets had mechanized handling machines. Just six percent reported having fumigation equipment and about one-third had warehouses.

4.19 **A number of improvements must occur in UP to improve marketing of high value crops.** A recent survey of 400 farmers in Uttar Pradesh who produce high value crops (maize, tomato, potatoes, mango and turmeric) asked them what improvements they wanted in the wholesale markets. About one-half of the respondents cited a reduction in market fees (table 4.11). Honest traders, better facilities and less theft were also high on their list. Farmers also asked for better transportation and markets that were close by. Investments in market facilities are considered pro-poor because sales by poorer farmers would increase at a proportionately higher rate than those by wealthy farmers.

Table 4.11: Wholesale market improvements requested by farmers in Uttar Pradesh, 2005. (percent of farmers requesting)

	Grain	F&V
Closer market	27	35
Reduced fees	50	47
Improved transportation	49	16
Improved facilities	32	36
Cold storage	20	17
More honest traders	58	55
Less theft	37	31
Permission to sell and/or sell more often	10	23

Source: Estimates based on India's Agriculture Marketing Survey, 2005.
Note: Satisfaction with wholesale market includes farmers who were indifferent, satisfied, and very satisfied. F&V = fruits and vegetables

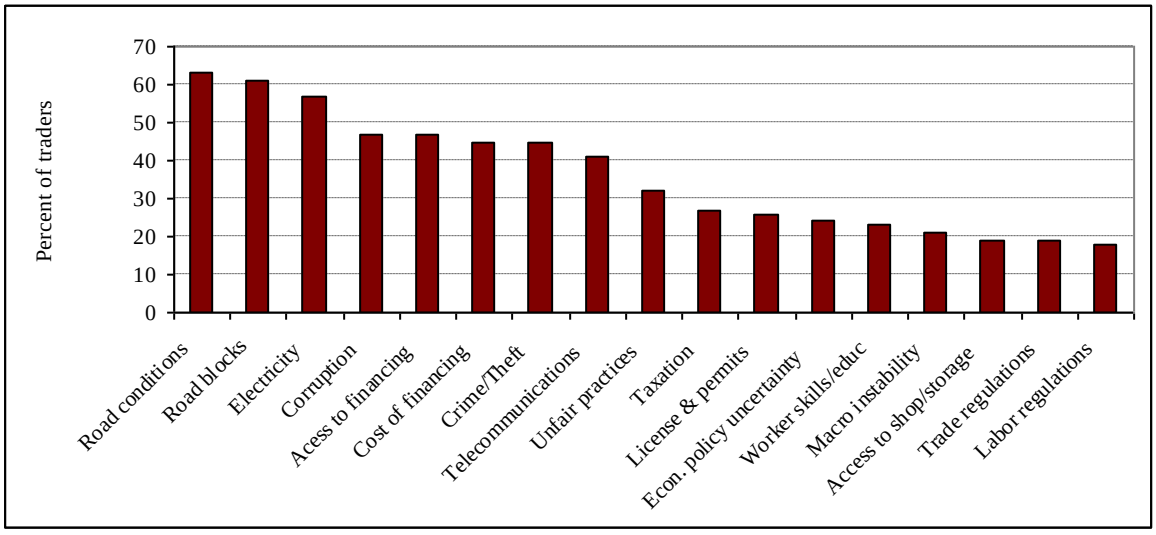
4.20 **Access to markets is hampered by the lack of transportation links.** In UP, a landlocked state, road transport is the main mode of transportation. The density of roads in UP is amongst the lowest of the Indian states. UP has 170 km of roads per 100,000 people compared to an average of 256 km for the country as a whole. In UP, just 44 percent of villages are connected by a paved road. Demand for roads has grown rapidly (more than 10 percent per annum) over recent decades. Road construction and maintenance pale in comparison to demand. As a result, the road network capacity is low, road conditions are poor and safety is inferior. Although investment in roads has increased substantially in recent years, 50 percent of the core road network remains in poor condition. Road density in the Eastern and Southern regions is even less than in the Western and Central regions. Under the Pradhan Mantri Gram Sadak Yojana (PMGSY) and its subsequent integration with Bharat

Nirman (BN) program, UP has made considerable progress in meeting a target to provide good all-weather road connectivity to unconnected habitations. Improving connectivity in UP's lagging areas will help farmers and workers take advantage of their agro-climatic potential and skills.

4.21 **Access to markets remains uneven across regions.** In the absence of data on the number and size of markets in each region, the rate of urbanization is a useful indicator for the rural population's access to markets of different sizes. In UP, the degree of urbanization is highest in the Western region even though much of its population resides in mid-sized cities of fewer than one million people. The Central region is second in urbanization. More than one-half of this region's urban population lives in metropolitan areas with more than one million people. The urban population in the Eastern and Southern regions is concentrated in medium to small cities. The development of small and medium size cities, particularly in UP's Eastern region, will be important to ensure greater access to markets and as destinations for land-poor workers in rural areas. Cities and towns act as a hub for agricultural trading. Improvements in agricultural marketing and connectivity will be essential for the growth of these cities and towns.

4.22 **For UP's agricultural markets to improve means the rural investment climate needs to do so as well.** A survey of about 400 wholesale traders in UP illustrates the major problems they face in operating their businesses. Traders identify the availability and quality of infrastructure (shops, storage, roads, electricity) and access to credit as the most critical constraints to their businesses (figure 4.4).

Figure 4.4: Constraints to agricultural trading in Uttar Pradesh, 2005.



4.23 **Regulations in the wholesale market in UP have been a serious impediment to improving farmers' access to different types of buyers because they restrict his or her choices.** The state's Agricultural Produce Market Act gives state government the sole authority to establish and manage wholesale markets. The Act, adopted by most states in the 1960s and 1970s, prescribes the establishment of a network of state controlled "regulated markets" or *mandis* and Marketing Committees to operate them. The Marketing Committee, which is responsible for enforcing the provisions of the Act, is empowered to establish markets; control and regulate admission to the market; charge fees (market, license and rental fees); issue and renew licenses; and suspend or cancel them. Market committees usually retain a certain percentage of the revenues collected; the balance goes to the Agricultural Produce Marketing Board. Requiring farmers to sell their produce at the regulated markets prevents farmers from taking advantage of other channels which offer better returns. In some cases, banning direct sales to processors and other bulk buyers leads to higher transaction costs. Although the buyer pays the market and commission agent fees in these markets,

farmers pay these costs by accepting lower prices. The Act constrains the development and modernization of markets, by restricting them to the public sector. In some states, traditional retail markets have evolved into wholesale markets. Many of them have very poor facilities—no water, covered areas, drainage or appropriate waste disposal. The existing Act, however, prevents the private sector from constructing and operating wholesale markets.

4.24 **In 2003, the Ministry of Agriculture of GOI formulated a model Act, which proposes to remove restrictions on direct marketing by farmers. It also opens the development of market infrastructure to other agencies and establishes a framework for contract farming.** By 2007, most states had adopted the proposed amendments. For its part, GoUP has proposed to adopt just a portion of the model act. Progress in that direction has been slow.

4.25 **Small holders predominate in UP.** One-quarter of rural households own no land other than their own homesteads. In 2003, more than one-half of households owned less than a hectare of land (table 4.12). Land ownership is more imbalanced in the Southern region. There is no significant difference in the rest of the regions. As a result of increased subdivision and fragmentation of landholdings over the years, the percentage of landless and small holders (less than 1 ha of land) has continued to increase in nearly all regions. In 2003, over 80 percent of rural households owned less than a hectare of land.

4.26 **The size of operational holdings continued to decline as well.** The average farm size has declined from about 0.89 ha in 1992 to 0.63 ha in 2003. To put this in perspective, the minimum viable economic landholding is estimated at 1 to 1.5 ha. There is not enough land to ensure a dramatic increase in the size of the farms by smallholders through re-distribution of land. Land leasing markets will have to play a more active role in redistributing land based on efficient production.

4.27 Given the number of small and fragmented farms in UP, inefficient and restrictive land leasing markets constrain agricultural growth. UP continues to have restrictive land legislation which stifles the emergence of efficient land rental markets. Based on evidence from NSS, leasing of land has declined in all regions of UP. The percentage of households leasing land declined from 15 percent in 1992 to 12 percent in 2003. This trend was evident in all regions. There has been some change in leasing contracts also. In the Western and Southern regions, the number of fixed rent contracts increased considerably. Most of them were at the expense of leasing by family members. Land leasing legislation was to protect access to their land by small and marginal farmers. Instead, it has frequently had the opposite effect. Based on evidence put forth by Deininger, Jin and Nagarajan (2006) suppression of land markets in India may have hurt the efficiency and equity of agricultural production there. Land rental markets may have the potential to improve productivity as well as equity by allowing landless and land-poor households to access land and improve their livelihood.

Table 4.12: Distribution of household by land ownership in Uttar Pradesh

	Distribution of households by land ownership (not incl. homestead)				
	No land	<1 ha	1-2 ha	2+ ha	Total
			2003		
Western	34.1	47.43	12.1	6.37	100
Central	24.3	55.5	14.4	5.8	100
Eastern	21.3	64.1	10.0	4.6	100
Southern	17.2	33.7	25.0	24.1	100
Total	26.2	55.1	12.3	6.4	100
			1992		
Western	32.24	40.3	15.5	11.96	100
Central	16.94	60.4	14.49	8.17	100
Eastern	16.4	61.24	13.64	8.72	100
Southern	22.11	27.46	21.57	28.86	100
Total	22.25	52.07	14.87	10.8	100

Source: Estimates based on NSS 59th round, schedule 33.

4.28 **At the village level, maps of agricultural land are virtually non-existent in UP.** States like Gujarat, Maharashtra, Tamil Nadu and Andra Pardesh make maps of agricultural land available to nearly all villages. In contrast, UP has been slow to do so. Making maps available helps farmers use their land for collateral purposes and in doing so improves their access to credit.

4.4 The non-farm sector

4.29 **Agricultural performance alone cannot explain regional differences in poverty rates and changes in poverty rates.** Improvements in agricultural performance during the last decade has raised farm incomes and led to a reduction in poverty among cultivators in all regions. The difference in poverty trends across all four regions hinges on an understanding of the trends in poverty among casual workers and to some degree the self-employed in the non-agricultural sector. Although poverty declined among these groups in the Central and Southern regions, it stagnated in the West and in the East.

4.30 The Western region has been the springboard for a green revolution in cereal production in India. Agriculture in this region ranks higher for most indicators –- higher usage of modern inputs, higher crop yields and a higher degree of diversification into production of high value crops, including cash crops. The Central region, which closely resembles the Eastern region in agricultural development, experienced fast decline in poverty including among casual workers. In comparison, poverty reduction among all groups in the Eastern region was much slower, especially among non-farm households. These regional differences in the pace of poverty reduction are in sharp contrast to the gains in agricultural development (e.g. spread of irrigation) in all regions. Thus far, the evidence suggests that development in the non-farm sector played an important role in the rate of progress in the reduction of poverty.

4.31 In all regions, the majority of the rural labor force continues to be employed in agriculture. However, the share of agriculture in total rural employment has declined from 74 percent in 1994 to 62 percent in 2005. All regions experienced an increase in employment diversification into non-farm activities (Table 4.13), but there were regional differences in employment distribution between farm and non-farm activities. In the Central and Southern regions, about 30 percent of the male labor force was employed in non-agriculture. In the Eastern and Western regions, it was about 40 percent.

Table 4.13: India Uttar Pradesh Employment shares across regions in 1994 and 2005

	Male		Female	
	1994	2005	1994	2005
Uttar Pradesh				
Agriculture	0.74	0.62	0.86	0.81
Non Agriculture	0.26	0.38	0.14	0.19
Western Region				
Agriculture	0.73	0.60	0.78	0.67
Non Agriculture	0.27	0.40	0.22	0.33
Central Region				
Agriculture	0.80	0.70	0.82	0.80
Non Agriculture	0.20	0.30	0.18	0.20
Eastern Region				
Agriculture	0.71	0.59	0.87	0.84
Non Agriculture	0.29	0.41	0.13	0.16
Southern Region				
Agriculture	0.80	0.71	0.93	0.84
Non Agriculture	0.20	0.29	0.07	0.16

4.32 Non-farm casual work pays a higher daily wage than farm casual labor. However, when the supply of workers in non-agricultural casual occupations went up between 1994 and 2005, their wages grew slower than their counterparts in agricultural occupations. As an increasing share of the labor force sought employment in non-farm activities, the wage gap between farm and non-farm casual workers narrowed considerably -- from 36 percent in 1994 to 16 percent in 2005. The gap between casual agricultural and non-farm daily wages has shrunk in all regions with one exception – the South. During this period, daily wages from casual non-farm work stagnated in the Western region. As workers moved away from agriculture and as the supply of labor outstripped the demand for casual nonfarm workers, their wages went up only slightly. This stagnation contributed to the lack of progress in reducing poverty there.

4.33 **Overall, however, the poor and disadvantaged are likely to benefit indirectly from the expansion in non-farm employment because of its effects on agricultural wages.** Based on state

level data from India for 1984-2005, Lanjouw and Murgai (2008) attributed an expansion of non-farm employment to a rise in agricultural wages. Their econometric estimates show that rising agricultural wages significantly reduce poverty, but that non-farm employment is not independently associated with this reduction. By tightening the labor market, non-farm activities help push up agricultural wages. The poor benefit indirectly even though they have little or no education, belong to socially-disadvantaged groups and are unable to access better-paying jobs.

4.34 **Nonfarm employment and farm wages are linked to urban performance.** Non-farm employment can help reduce the labor burden on agriculture. Migration, including commuting of workers to urban areas can tighten the rural labor market by raising farm and non-farm wages. A number of econometric studies in Nepal and Bangladesh have demonstrated that better-paid non-farm activities cluster in urban areas (Fafchamps and Shilpi, 2003 & 2005; Deichmann, Shilpi and Vakis, 2008). A district's population density and rate of urbanization increases the odds of self-employment in non-farm activities, particularly as the share goes up. Similar to other countries, rural non-farm activities in UP are likely to thrive in areas with better infrastructure (e.g. electricity, telecommunication) and access to urban centers (roads).

Table 4.14: Mean daily wages of male workers in rural Uttar Pradesh

	1994	2005	percent change	1994	2005	percent change
Uttar Pradesh	**Casual**			**Regular**		
Agriculture	21.8	27.9	*28%*	n/a	n/a	*n/a*
Manufacturing	28.5	31.3	*10%*	50.5	45.5	*-10%*
Trade	29.6	28.3	*-4%*	23.6	34.5	*46%*
Services	30.7	33	*7%*	70.5	100.6	*43%*
All	29.7	32.4	*9%*	65.2	73.2	*12%*
Western						
Agriculture	28.4	31.2	*10%*	n/a	n/a	*n/a*
Manufacturing	34.4	34.7	*1%*	40.3	46.3	*15%*
Trade	37.8	32.6	*-14%*	25.1	39	*55%*
Services	36.5	37	*1%*	72.5	99.9	*38%*
All	35.5	36	*1%*	63.7	67.5	*6%*
Central						
Agriculture	18	23.4	30%			
Manufacturing	27.5	33	20%	38.1	50.8	*33%*
Trade	n/a	n/a	*n/a*	22.5	30.3	*35%*
Services	26.5	31.1	17%	59.2	98.6	*67%*
All	27	31.6	17%	55.8	74.8	*34%*
Eastern						
Agriculture	19.2	27	*41%*	n/a	n/a	*n/a*
Manufacturing	22.1	27.9	*26%*	63.1	36.2	*-43%*
Trade	21.7	26.8	*24%*	22.1	31.2	*41%*
Services	29.9	31.9	*7%*	75	101.6	*35%*
All	26.2	30.7	*17%*	71.1	79.8	*12%*
Southern						
Agriculture	15.5	25.7	*66%*	n/a	n/a	*n/a*
Services	14.5	28.2	*94%*	56.2	104.2	*85%*
All	14.5	28.2	*94%*	56.2	104.2	*85%*

Source: Employment schedule of NSS 1993-94 and 2004-2005

4.35 **Is growth of non-farm employment always pro-poor?** The answer depends on factors that drive non-farm growth. The most prevalent view among development practitioners is that agricultural productivity growth primarily drives growth of rural non-farm activities (Mellor, 1976; Haggblade,

Hazell and Reardon, 2006). According to this view, various production, consumption and labor market linkages, tie together the development of nonfarm and farm sectors. These linkages in turn have a multiplier effect on productivity growth in agriculture. According to this view, non-farm employment can swell in the absence of growth in agriculture due to a push factor. However, such an increase in non-farm employment does not necessarily lead to a reduction in poverty. An alternative viewpoint about rural India, expressed in a paper by Foster and Rosenzweig (2004), argues that low rural wages may act as a catalyst to stimulate the emergence of productive non-farm manufacturing enterprises -- often with urban bases -- in rural areas. These authors believe that agricultural productivity growth has a positive influence only on non-tradeable nonfarm activities such as services. In contrast, when tradeable nonfarm activities, such as small manufacturing, move into areas with lower wages, they have a negative impact on agricultural productivity growth. This particular pattern of non-farm growth contributed significantly to reducing spatial wage inequality and rural poverty in India, according to Foster and Rosenzweig (2004), Based on recent literature, a third view is that urban demand exerts a distinct influence on the types of non-farm activities that take place in rural areas (Renkow, 2006). Empirical evidence from Nepal and Bangladesh shows that both high return wage work and self- employment in nonfarm activities are heavily concentrated in close proximity to large urban centers (Fafchamps and Shilpi, 2003; Deichmann et al, 2008).

4.36 A growing urban sector has a dual impact – it stimulates non-farm activities in rural areas in close proximity to it and also attracts workers into urban areas. Both of these factors lead to an increase in rural wages and hence a decrease in rural poverty. What factors played a key role in UP during the last decade? There is no single answer to this question. Factors driving growth in rural non-farm employment have varied by region. In the Western region, for example, a lack of progress in the wages of casual workers may stem from weak urban performance. Agriculture there ranks highest in productivity and this sector also experienced healthy growth. In the Central region, a booming urban sector, combined with agricultural growth in rural areas, led to an increase in casual non-farm wages; as a result, poverty in rural areas declined. The Eastern region experienced a lower rate of urbanization perhaps due in part to poorer infrastructure. Consequently, the growth in non-farm casual wages was modest. Meanwhile in the Southern region, agricultural growth and migration of workers to other regions were the primary drivers of growth in non-farm employment and wages.

4.37 Looking forward, there is an urgent need to undertake a rural investment climate analysis in UP to identify the critical constraints to expansion of non-farm activities outside metropolitan areas. Rural investment climate surveys in Bangladesh, Pakistan and Sri Lanka demonstrate that firms outside metropolitan areas face different constraints from urban firms. In all three surveys, the top four impediments to the launch of non-farm enterprises were access to and the cost of financing, transportation, access to and the reliability of the electrical supply and low demand. The investment climate survey in UP (2006) covered only urban firms. These firms considered access to reliable power at a reasonable cost as the top inhibitor to investment and growth of productivity. Constraints faced by the rural firms may or may not be the same.

4.5 Conclusions and policy implications

4.38 Agriculture's contribution to UP's economy will decline with economic development and over time an increasing share of labor will move out of this sector. This structural transformation is already underway. Agriculture's contribution to state GDP declined to 37 percent in 1994-95 and to 30 percent in 2004-2005. Non-farm employment is becoming more important to the livelihood of rural people. Yet almost two-thirds of UP's labor force remains tied to agriculture. Ensuring sustainable pro-poor growth there will require:

- intensification, diversification and growth in agricultural productivity;
- removal of constraints on the rural investment climate to stimulate growth of better-paid non-farm activities;

- investment in human and other capital of poorer rural households to enhance their mobility across occupations and across locations (migration).

4.39 There are regional differences in the distribution and incidence of the rural poor, particularly their potential for agricultural growth. Such differences call for a ***regionally differentiated strategy*** based on the specific need of the region.

4.40 The ***Eastern*** **region** represents about 43 percent of the total rural population and 54 percent of the rural poor. This region is less urban and has insufficient access to larger markets. Farming and non-farm development here require improvements in connectivity. Yields for major crops are lower than in the Western region. Land is tied to cereal production even though returns from other crops -- vegetables, sugarcane and fruits -- are much higher. Agricultural growth will depend on the ability to reduce the gap in yield for cereal crops (wheat and paddy) and to diversify into cash crops that command a higher return.

4.41 A substantial proportion of the rural poor (25 percent) reside in the relatively prosperous ***Western region.*** This region enjoys better access to markets and higher agricultural productivity compared to the rest of UP. The strategy for pro-poor rural growth in this region will have to focus (i) on enhancing the capability of poorer households to participate in better-paid activities, and (ii) to improve the investment climate for non-farm growth. In agriculture, the scarcity of land and water heightens the importance of diversification to higher-value products. Consumer demand, which is changing due to a rise in incomes, will provide huge opportunities for producers in Western Uttar Pradesh to diversify into higher-value products, including fruits, vegetables, livestock, aquaculture, and associated livestock feeds and forages. Increasingly liberal export markets will also be a boon for this diversification. As incomes go up, the demand for processed products will increase along with it. This situation presents new opportunities for agro-processing and related services.

4.42 The ***Central region*** houses another 16 percent of the rural poor. The rural labor market here has shown signs of tightening as urban expansion siphoned off labor from the countryside. The region will have to ensure the sustainability of non-farm growth in urban areas while supporting the expansion of non-farm activities in rural areas. Agriculture here closely resembles that in the Eastern region. The increasing demands of urban metropolises present huge opportunities for agricultural diversification.

4.43 The ***Southern region*** remains one of UP's most sparsely populated. Improvements in farming income have led to a substantial decline in rural poverty here. Given its limited agricultural potential, this region will have to focus on investing in human capital to improve the mobility of its people. In the short run, the region can also explore ways to develop agriculture (crops and livestock). The latter are more suitable to its agro-climatic conditions.

4.44 Fostering the addition of ***agricultural intensification, diversification and value in*** Western, Eastern and Central UP requires a change in policies. The goal would be (i) to ensure incentives favor diversification and sustainable agricultural practices and (ii) foster new institutions to meet the modern marketing needs of higher-value products. The following public sector institutional changes, reforms, and investments are key to this new environment:

- Continue to liberalize policies for agricultural marketing and trade (e.g., remove movement and storage restrictions, except during emergencies; draft appropriate rules under the amended Agricultural Produce Market Act).
- Expand agricultural risk management mechanisms, such as negotiable warehouse receipts, forward and futures contracts, and crop insurance. Develop financial systems for savings, capital redistribution, and risk management.

- Encourage investment in infrastructure for markets (e.g., market yards, cold chains, port infrastructure) and agricultural services (e.g., agricultural research, extension, and market intelligence and information systems).
- Institute land tenancy reform and administration to ensure efficient use of land and to allow farmers to use land as collateral for loans.
- Support capacity building for businesses to comply with market grades and standards and for public agencies to regulate and certify food quality and safety.
- Strengthen agricultural research and technology transfer systems. With land and water becoming scarce, diversification and productivity growth will become even more critical.

4.45 ***Access to markets*** in UP has to be improved for agricultural diversification and the promotion of non-farm activities. This should be a high priority in the Eastern region which lags behind the Western and Central regions in transport infrastructure and physical facilities in the market place. Support will also be needed for institutional innovations that facilitate coordination along the supply chain. These include contract farming, farmers' and traders' associations and out-grower schemes. These schemes occur when an agribusiness arranges with smallholders in the surrounding area to complement its supplies. Regulation and monitoring also require capacity building; they are crucial institutional elements for agricultural markets to function well. It may also be necessary to develop official standards and functioning market information systems.

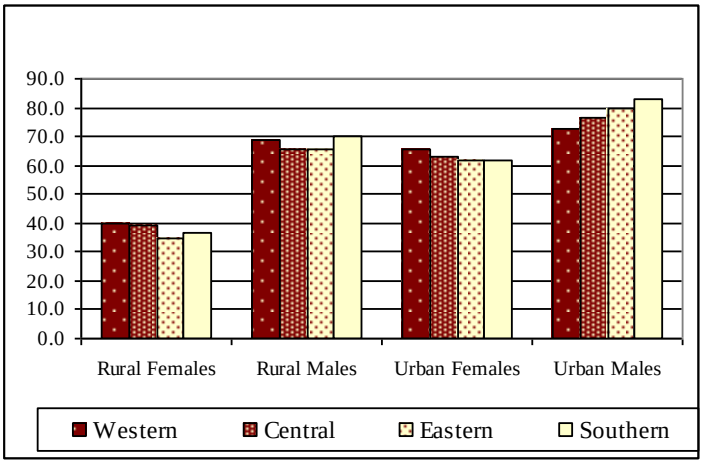
4.46 ***Removal of other rural investment climate constraints*** will be essential to nurture rural entrepreneurship and to attract non-farm enterprises in rural areas. The same is true of improved access to markets and improvements in the rural labor force's human capital. Investment climate surveys in other South Asian countries indicate that rural enterprises frequently experience different constraints from their urban counterparts. The results from these surveys suggest transportation and communication, access to finance and unreliable electrical supplies are a problem for rural enterprises. However, the relative importance of these constraints for each region is unknown. There is an urgent need for a rural investment climate survey in UP.

CHAPTER 5: EDUCATIONAL ACHIEVEMENTS AND CHALLENGES

5.1 Adult literacy

5.1 Educational outcomes in UP have been below India's average for decades. Between 1991 and 2001 the gap started closing. During that period, literacy increased from 40.7 to 57.4 percent. This was the largest decadal increase since the 1970s and a faster rate of increase than for India as a whole. Female literacy increased faster than males. However, a gap between the two sexes remains. In 2001, male literacy was at 70.2 percent and female literacy at 43 percent. The literacy rates for males and females were considerably higher in urban areas. Therefore, the gender gap was smaller there. On a regional basis, literacy varied from a low of 34.4 percent for rural females in the Eastern region to a high of 82.9 percent among urban males in the Southern region (figure 5.1).

Figure 5.1: Literary rates in Uttar Pradesh, 2001



5.2 In rural areas, the majority (over 50 percent) of the adult population is illiterate. The second largest group has a primary education level. In 2005, 57 percent of the rural adult population was illiterate, compared to 31 percent in urban areas (table 5.1). In rural areas, the percent of illiteracy in the overall population is highest in the Eastern region, so is the proportion of those with a secondary education. In urban areas, the Western region has an overrepresentation of illiterate. (Chapter 3 presents evidence that migration flows might be responsible for this pattern). Individuals with a secondary education are overrepresented in the Central region; this reflects the concentration of salaried jobs in the metropolis of Lucknow-Kanpur. The level of education and wealth are related, but the relationship is considerably stronger in urban as compared to rural areas (table 5.1).

Table 5.1: Distribution of adult population by education level in Uttar Pradesh, 2005

	Illit.	Below prim.	Prim./ Middle	Sec. +	Total
		Rural			
Western	54	5	25	15	100
Central	57	6	24	12	100
East	59	7	18	16	100
South	55	7	26	12	100
Poorest quit.	69	6	19	7	100
Richest quit.	41	6	25	28	100
All	57	6	22	15	100
		Urban			
Western	35	8	25	32	100
Central	25	6	21	48	100
East	28	9	21	42	100
South	32	10	28	31	100
Poorest quit.	56	11	22	10	100
Richest quit.	11	6	16	67	100
All	31	8	24	37	100

5.3 **The share of illiterate young adults (15-21 years old) declined from 40 to 25 percent between 1994 and 2005.** Improvements came from both rural and urban areas. In rural areas the share of illiteracy declined from 45 percent to 28 percent (by 38 percent) and in urban areas from 24 percent to 17 percent (by 29 percent), table 5.2. In rural areas, considerable improvement occurred in raising the share of young adults who have a primary and secondary education. The share of youth with a primary education increased from 34 percent to 42 percent. Those with a secondary education rose from 14 to 20 percent. Rural areas of the Western and Eastern regions saw increases in the proportion of young adults in both education categories. In 2005 about 40 percent of young adults in

these two regions had received a primary education and 20 – 25 percent had a secondary education.[35] In the Southern region, there was a large increase in the proportion of young adults with a primary education, but no progress in the percentage of youth with a secondary education.

5.4 **Improvements in the educational attainments of young adults have occurred across all income and social groups.** In rural areas, the decline in the share of illiteracy among young adults came from an increase in the share of those with primary and secondary education levels. For the poor, the improvements were concentrated in the primary grades, for the wealthy in secondary education (table 5.2). *The SC/ST group experienced rates of improvement in all education groups and at a faster rate than the majority population.* In rural areas, the SC/ST group reached near parity in the proportion of those with a primary education. When it comes to secondary education, a considerable lag exists between SC/ST and the majority (table 5.2).

Table 5.2: Distribution of young adults (age 15-21) by the highest level of education in Uttar Pradesh (in percent)

	1994				2005			
	Illiterate	Below primary	Primary/ Middle	Above Sec.	Illiterate	Below primary	Primary/ Middle	Above Sec.
Rural								
Western	44.6	6.3	35.8	13.3	28.9	7.1	42.8	21.2
Central	46.5	6.4	33.2	13.9	31	10.3	42.7	16
Eastern	43.5	8.5	31.1	16.9	25.9	8	40	26.2
Southern	44	4.9	39.7	11.4	23.5	9.4	56.9	10.2
Poorest quintile	59.4	6	26.1	8.5	40.1	11.7	38.9	9.3
Richest quintile	27	6.4	40.5	26.1	19.9	3.8	37.1	39.1
SC/ST	60	6.4	25.9	7.7	32.3	8.7	45.5	13.5
Other	39.8	7.3	36.1	16.8	26.2	7.9	41.1	24.8
Total Rural	44.5	7.1	33.7	14.7	27.7	8.1	42.2	21.9
Urban								
Western	31.6	6.5	30.2	31.8	22	6.6	39.8	31.7
Central	13.6	18.9	26.9	40.7	10.6	6.6	36.3	46.4
Eastern	18.7	8.6	38.9	33.9	11.6	10.3	35.3	42.8
Southern	24.6	5.2	49	21.2	16.2	9.3	49.8	24.7
Poorest quintile	49.3	11.7	29.3	9.8	30.8	17.6	42.7	9
Richest quintile	5.9	3.5	29	61.6	2.5	1.7	20.7	75.1
SC/ST	38.2	9.6	32.3	19.9	18.3	8.5	46.7	26.5
Other	22.4	9.6	32.6	35.4	17	7.3	37.6	38
Total Urban	24.3	9.6	32.5	33.6	17.2	7.5	38.7	36.7
Total UP	40	7.6	33.5		25.4	8	41.4	

Note: The shares across education groups add up to 100, which was omitted for presentation purposes.

5.2 Education outcomes of children

5.5 **Between 1994 and 2005, rural areas witnessed an increase in enrollment of 6 to 13 year olds. Enrollment of young girls (6 to 10 years of age) increased by 70 percent, boys' enrollment increased by approximately 20 percent. Still, in rural areas, boys' enrollment was uniformly higher than girls age 6-10 and 11-13.** In 1994, about 70 percent of 6-10 year old boys were in school compared to roughly 50 percent of girls (table 5.3). Gender differences in enrollment in rural

[35] These two regions had the highest proportion of the workforce in non-agricultural self-employment, a major shift which occurred during this decade. These young adults aspire to salaried jobs. While there has been a large increase in the number of salaried jobs in the Western region, the Eastern region has increased concentration of self-employment jobs.

areas were even higher for the older age groups. There was a modest rate of increase in boys' enrollment and a large increase in girls' enrolment over the decade. Girls' enrollment came close to boys among the youngest age group (6 to 10 year olds). It was 86 percent for boys and 81 percent for girls. Still, girls' enrollment lags behinds boys in the 11-13 age group (86 percent for boys and 70 percent for girls).

5.6 **In urban and rural areas, parity exists for the enrollment of 6-10 year old boys.** In fact, enrollment of rural boys in this age category is slightly higher than that of their urban counterparts (86 percent versus 84 percent). There are still differences in urban and rural enrollment for girls and for 11-13 year old boys. Urban areas are doing better than rural areas, (tables 5.3 and 5.4).

5.7 **In urban areas, girls' enrollment overtook boys among the 6 to 10 and 11 to 13 year old age groups thereby reducing the gender gap.** Urban areas made a modest progress in improving the enrollment of 6 to 10 year old boys. Between 1994 and 2005, their enrollment increased from 79 percent to 84 percent, table 5.4. Enrollment of urban girls increased faster than urban boys (from 70 to 84 percent), but at a slower rate than their rural counterparts. Girls' enrollment in urban areas is driven by trends in the Western and Central regions but not in the Eastern region.

5.8 **Improvements in the Central and Southern regions have been greater than improvements in the other two regions corresponding with poverty reduction trends there**. In 2005, there was little variation in the enrollment of boys living in the state's four rural regions. This masks a rapid increase of more than 40 percent in the Central region for young boys and a rapid increase in the Southern region among the older group. Among girls, enrollment is somewhat uniform for the younger age group, but it varies from a low of 65 percent in the Southern region to a high of 73 percent in the Eastern region for 11-13 year olds. Enrollment rates for girls age 11-13 lag in the Southern region. And yet, enrollment of 6-10 year olds and 11-13 year olds doubled, which represents a remarkable increase over the decade.

5.9 Across the state there is less variation in urban areas for the enrollment of young boys or girls compared to rural areas. In urban UP, improvements in poverty correlate with improvements in enrollment. For example, urban areas of Western UP witnessed little progress in enrollment, just as this region had little progress in the reduction in poverty. In contrast, the Central and particularly the Southern region made good progress in improving school enrollment for children.

5.10 **In rural UP overall and in rural areas across the four regions, the rate of increase in the enrollment of the SC/ST population was considerably higher than the general population for nearly all age and gender groups. As a result, the enrolments of SC/ST and the general population are close to parity.** By 2005, there was little difference in the enrollment of SC/ST and the general population of boys for 6-10 year olds and 11-13 year olds in rural areas, although the SC/ST was at a slight disadvantage (table 5.3). For girls, there was near parity in enrollment among the younger group. However, for 11-13 year old girls in the SC/ST group, their enrollment remained below that of the general population even though their enrollment rate doubled -- from less than 30 percent to more than 60 percent. Large enrollment gap between the SC/ST and majority remains among 11-13 year old girls in the Southern region 43 percent for SC/ST versus 72 percent for majority girls).

5.11 **In urban areas, similar to trends in rural areas, the improvements in SC/ST enrollment outpaced that of the general population for 6 to 10 year olds and 11 to 13 year olds. However, it did not increase enough to reach parity with the majority population.** SC/ST enrollment in urban areas is below that of the majority group (table 5.4). Possibly, these trends could be explained by the concentration of government SC/ST schooling incentives on rural, rather than urban areas. Across regions, the SC/ST are disadvantaged in the Western and Eastern regions for all age and gender groups, while in the other regions patterns are mixed.

Table 5.3: School attendance of 6-10 and 11-13 year olds in Uttar Pradesh by region and background characteristics, 1994-2005, rural areas

	1994				2005			
	Boys		Girls		Boys		Girls	
	6-10	11-13	6-10	11-13	6-10	11-13	6-10	11-13
Western								
SC/ST	69.8	66.1	39.0	30.0	85.4	86.7	86.4	62.4
Other	74.5	78.0	53.5	49.8	86.8	86.0	79.9	68.2
Total western	73.6	75.7	50.6	46.4	86.5	86.2	81.7	67.1
Central								
SC/ST	53.0	54.7	35.4	37.9	81.0	83.8	84.1	58.6
Other	64.8	69.5	53.6	50.3	90.1	82.4	80.3	77.8
Total central	61.4	65.7	48.4	47.8	87.2	82.7	81.3	72.3
Eastern								
SC/ST	63.1	65.5	30.3	26.4	83.4	85.4	76.8	69.1
Other	74.8	81.4	52.3	48.7	84.6	88.0	81.9	75.0
Total Eastern	71.7	77.2	46.2	43.1	84.3	87.4	80.5	73.5
Southern								
SC/ST	74.3	59.2	24.3	31.2	88.5	82.3	91.5	42.6
Other	66.5	69.6	45.8	33.2	82.8	90.4	71.6	71.9
Total Southern	68.3	66.6	40.8	32.8	84.1	88.8	75.0	65.2
Poorest quintile	57.6	58.1	33.6	31.9	79.9	81.0	73.8	63.8
Q 2	66.6	68.6	40.6	36.3	85.8	80.9	79.5	66.2
Q 3	76.8	78.7	50.4	45.5	86.8	89.5	81.7	68.8
Q 4	81.6	82.4	62.4	51.7	90.3	89.1	88.8	79.1
Richest quintile	81.1	88.0	70.6	67.3	91.3	95.0	94.1	83.2
SC/ST	63.3	63.2	33.3	29.6	83.7	85.4	81.8	63.6
Other	72.6	77.3	52.6	48.7	86.3	86.3	80.5	72.5
Total Rural	70.3	73.9	47.8	44.6	85.6	86.1	80.8	70.4

5.12 **Despite considerable improvements in enrollment among the poorest groups, economic disadvantage manifests itself in lower rates of enrollment for low-income children.** In rural UP in 2005, enrollment of children from the wealthier households was about 30 percent higher for girls and about 15 percent higher for boys. The gap in enrollment based on wealth was greater in urban areas. The gap in enrollment there was over 40 percent for girls and younger boys and almost 80 percent for 11-13 year old boys. These outcomes reflect a dramatic closing of the wealth gap in enrollment between 1994 and 2005 for all, except for urban boys 11-13 years old. *For older boys, the wealth gap has actually increased. This reflects a decline in enrollment among 11-13 year old boys in the two lowest quintiles* (table 5.3). The wealth gap was more striking in urban UP. Enrollment rates among the wealthiest group were higher there than in rural areas. In fact, they were nearly universal. This gap in enrollment between the wealthy and the poor occurred among girls as well.

Table 5.4: School attendance of 6-10 and 11-13 year olds in Uttar Pradesh by region and background characteristics, 1994-2005, urban areas

	1994				2005			
	Boys		Girls		Boys		Girls	
	6-10	11-13	6-10	11-13	6-10	11-13	6-10	11-13
SC/ST	75.1	83.0	63.5	47.9	59.1	74.7	80.9	68.2
Other	76.9	80.0	66.0	67.4	82.2	71.9	81.6	82.4
Total western	76.7	80.3	65.7	65.2	79.7	72.2	81.5	81.0
SC/ST	61.2	64.4	72.2	41.1	65.3	88.5	92.2	97.8
Other	93.2	79.0	84.6	82.0	92.2	90.0	90.4	92.5
Total central	85.8	77.0	82.4	73.7	87.9	89.8	90.5	93.3
SC/ST	65.3	45.1	48.7	70.8	85.8	65.2	64.5	60.9
Other	81.0	79.2	75.3	74.8	86.5	91.8	87.1	83.6
Total Eastern	79.5	75.9	71.9	74.3	86.4	88.7	83.9	81.0
SC/ST	78.0	74.5	60.1	66.7	93.6	98.3	90.6	90.9
Other	78.3	74.5	66.3	62.3	86.1	82.4	92.6	78.6
Total Southern	78.3	74.5	64.9	63.0	88.8	87.1	91.9	84.8
Poorest quintile	56.4	62.3	46.6	36.2	69.4	56.7	68.2	68.0
Q 2	73.6	70.6	65.6	59.7	81.8	59.7	80.3	74.0
Q 3	88.4	85.5	71.4	78.3	82.1	86.5	86.6	77.0
Q 4	93.2	84.7	89.9	84.8	92.7	92.3	89.3	96.4
Richest quintile	97.5	93.7	89.7	94.1	96.5	99.9	98.5	99.4
SC/ST	69.7	70.8	62.1	53.0	72.6	78.3	79.5	77.2
Other	80.8	79.3	71.5	71.6	85.4	80.0	84.7	84.5
Total Urban	79.1	78.3	70.2	68.9	83.5	79.8	84.1	83.5

5.3 School participation of youth (14-15 year olds)

5.13 **In rural areas, following increases over the last decade, about 70 percent of 14-15 year old boys and about 60 percent of girls in the same age group were in school in 2005.[36] In urban areas, enrollment among urban boys stagnated at about 65 percent, while girls' enrollment increased. This shift led to gender parity in enrollment in urban areas.** Enrollment of older boys in rural areas increased from 59 to 71 percent; it stagnated at around 65 percent in urban areas (table 5.4). Enrollment of older girls in rural areas doubled; it went from 28 percent to 57 percent. Enrollment among urban girls increased from 54 percent to 67 percent. Among urban boys, enrollment stagnated across all regions and income groups. The increase in enrollment by urban girls and the stagnation in boys' enrollment led to gender parity among 14-15 year olds in urban areas.

5.14 **In urban areas, the stagnation in enrollment of 14-15 year old boys occurred at the same time that youths needed to supplement household income. Their employment rate went up slightly.** In urban areas, there was an increase in failure to attend school by 14-15 year old boys because they had to supplement their family's income. Their non-attendance rate rose from 38 to 48 percent. (In contrast, in rural areas, the proportion of those who don't attend school for this reason declined from 45 percent in 1999 to 39 percent in 2005). This is consistent with the increase in work participation among urban youth, which rose from 21 to 24 percent. There was also an increase in the proportion of urban youth who reported working as their secondary occupation. That figure rose from

[36] DISE data shows that between 2001 and 2008 16,000 of new primary schools and 26,000 of upper primary schools have been opened in previously underserved locations.

two to five percent. In contrast, in rural areas, work participation by the same group declined (see Chapter 3).

Table 5.5: School attendance of youth (14-15 year olds) in Uttar Pradesh by region and background characteristics, 1994-2005.

	Rural				Urban			
	1994		2005		1994		2005	
	boys	girls	boys	girls	boys	girls	boys	girls
Western								
SC/ST	45.9	15.7	56.6	48.9	58.0	60.7	72.3	52.4
Other	58.6	32.7	77.8	56.7	65.9	43.8	60.0	64.3
Total western	55.5	29.9	72.2	54.7	65.0	45.4	60.8	62.8
Central								
SC/ST	48.1	13.2	58.8	43.3	35.1	41.8	63.4	63.4
Other	56.8	28.9	63.3	55.1	75.8	70.9	66.9	84.3
Total central	54.7	24.8	62.2	52.0	71.3	66.1	66.5	82.1
Eastern								
SC/ST	58.3	9.7	70.3	53.9	11.5	7.3	69.9	44.2
Other	67.2	33.3	74.5	62.7	70.8	68.5	71.9	66.7
Total Eastern	65.0	28.1	73.5	60.7	67.3	62.4	71.7	64.4
Southern								
SC/ST	37.6	23.7	55.5	27.7	100.0	58.9	79.5	55.3
Other	60.2	7.6	81.9	53.5	73.8	58.4	82.5	55.1
Total Southern	52.9	10.3	77.1	48.1	77.2	58.4	81.6	55.2
Poorest quintile	43.7	16.5	53.2	51.7	39.7	18.7	48.1	47.8
Q 2	49.6	21.9	66.8	43.0	54.0	37.2	33.0	36.7
Q 3	67.3	27.3	71.4	59.4	69.9	49.4	60.6	63.5
Q 4	66.5	29.4	78.3	63.7	80.4	83.6	72.6	76.5
Richest quintile	70.2	46.7	89.1	70.2	89.9	86.8	98.8	97.7
SC/ST	50.3	12.6	62.7	49.2	49.1	45.6	71.0	53.0
Other	61.7	31.5	74.0	59.0	69.7	55.0	64.4	68.9
Total for sector	58.9	27.6	71.1	56.7	67.4	53.8	65.0	66.9

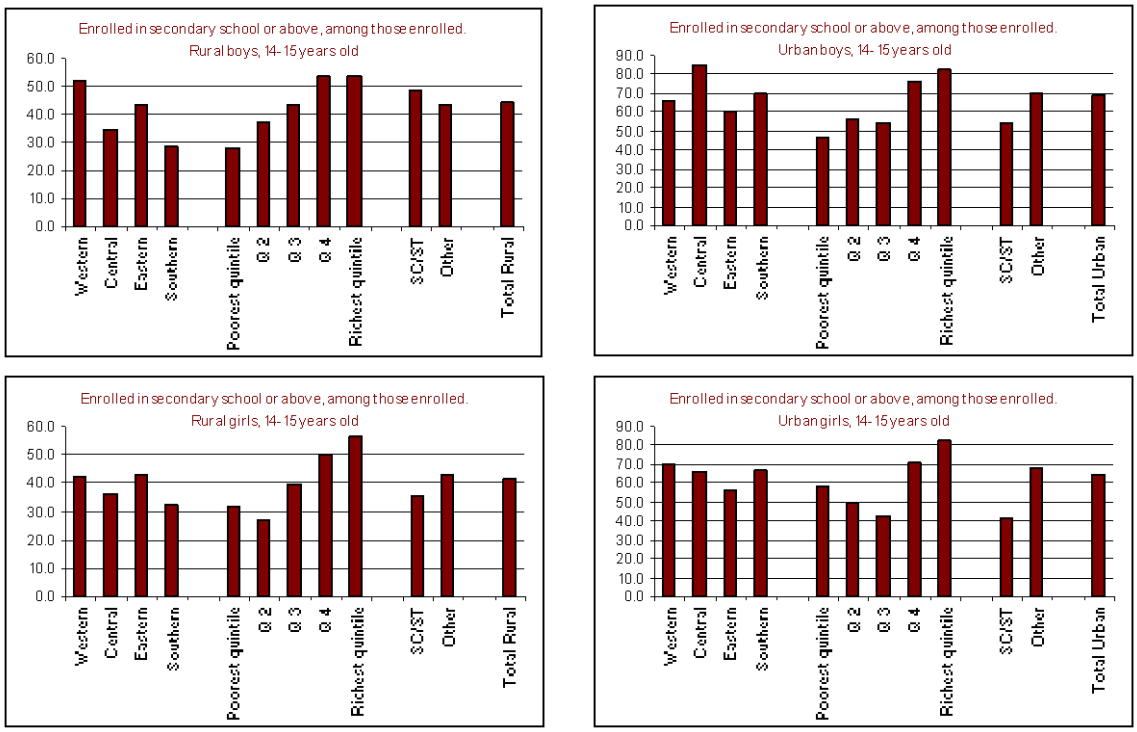
5.15 Given the stagnation in casual wages in urban areas and the slow reduction in poverty there, it is not surprising that youths have joined the labor force and have given up their education. Their households need their income to maintain their standard of living. This strategy, although understandable, will hamper their future earning capacity. Creating more flexible schooling arrangements for this group is one possible remedy that would require a change in public policy. (Chapter 3 presents more analysis of LFP of children and youth.)

5.16 Evidence from other sources suggests that income is an important factor in a child's participation in school (GoUP HD report 2003, NFHS III 2007, PROBE team 1999). Jenkins and Barr (2006) cite these reasons for non-attendance among the SC population.

5.17 While increasing numbers of youth attend school, they are not progressing to the age-appropriate education level. In rural areas in 2005, less than one-half of 14-15 year olds who were in school attended secondary school, the other half were in primary or middle school. The situation was better in urban areas. And yet, only about three-fifths of the same group was in secondary schools; the rest were in primary and middle school (figure 5.2). Income and residential sector are the predictors of a youth's being in an age-appropriate grade level. There is little difference for boys and girls. For example, a 14-15 year old rural boy from the bottom income quintile has one half of the probability of a rural boy from the top income quintile to be in an age-appropriate grade (30 percent *vis*. 55 percent). A rural girl from the top income quintile has the same probability of being in an age-appropriate

grade as an urban girl from the bottom income quintile (around 58 percent, figure 5.2). Between 1994 and 2005, enrollment among 14-15 year old boys and girls expanded, but the percentage of those who were in the appropriate grade for their age declined. This state of affairs was present across all regions and income groups. The trend was just the opposite in urban areas. There the likelihood of being in the correct grade increased for boys and girls.

Figure 5.2: Enrolled in secondary school or above, among 14-15 years old in Uttar Pradesh, by background characteristics, 2005 (in percent)



5.4 Private Schooling[37]

5.18 **Private schooling continued to expand in UP. It accounted for a large part of the increase in enrollment. Between 2000 and 2005, enrollment in private schools doubled for boys and girls age 6 to 10 and 11-13 and it nearly tripled for 14-15 year olds.** In 2005, more than 30 percent of all children in three age categories attended private school. Enrollment in private school is higher in urban as compared to rural areas. In rural areas, older children are more likely to be in private school. In urban areas younger children are more likely to be in private school. There is a higher proportion of boys in private schools in rural areas at all ages. There is no difference in gender-specific enrollment in private schools in urban areas (figure 5.5).

[37]A number of other sources reported that the number of private schools has increased throughout India, especially in rural areas (De, Noronha and Samson, 2002). This was in spite of the high cost of private schooling (PROBE team 1999, Ramachandran 2004c). In urban areas, data from NCERT in 1986 and 1998 show that privatization of schools has been increasing rapidly. Students are enrolling in private schools in increasing numbers, particularly those that are without government aid (De et al. 2002).

5.19 Private schooling at the primary level increased during 2000s. At the secondary level, private education exploded. It went from 14 percent to 60 percent of the total enrollment in rural areas and from 28 percent to 62 percent in urban areas (figure 5.4 and 5.5). In rural areas in 2005, private schools still represented a small share (28 percent) of total enrollment at the primary level. That figure was substantially larger in urban areas (69 percent in 2005), figure 5.4 and 5.5. While enrollment in private primary schools increased in 2000s, a dramatic expansion took place at the upper primary and secondary levels. In rural areas, the share of total enrollment experienced by private schools in the upper primary grades increased from 19 percent to 43 percent and from 14 to 60 percent of all enrollments in secondary grades (figure 5.8). The highest private enrollment in rural areas is in the wealthiest Western region, the lowest in the poor Southern region. In urban areas, private school enrollment was already higher in 2000; therefore, the increase was not as dramatic as in rural areas. Still, in the upper primary grades, private school enrollment increased from 47 percent to 72 percent and from 28 percent to 62 percent in secondary grades. In urban areas, the Western region has the biggest share of private school enrollment in primary and upper primary grades. In secondary grades, the Central region has the highest share of private education.

Figure 5.3: Enrollment in private schools in Uttar Pradesh 2000-2005 (percent)

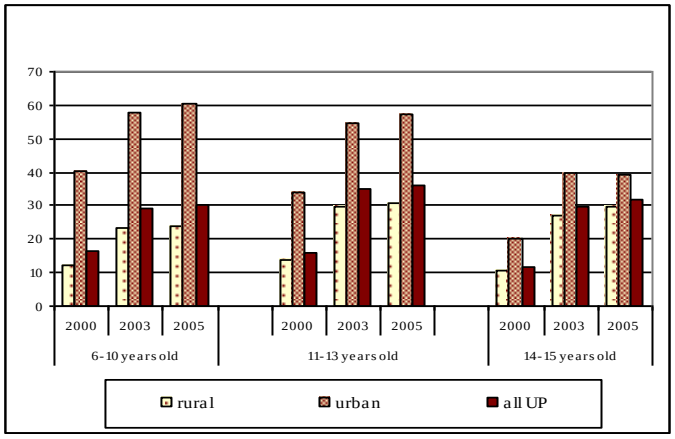


Figure 5.4: Enrollment in private schools in Uttar Pradesh, (as a percent of the total enrollment), rural areas, 2000-2005

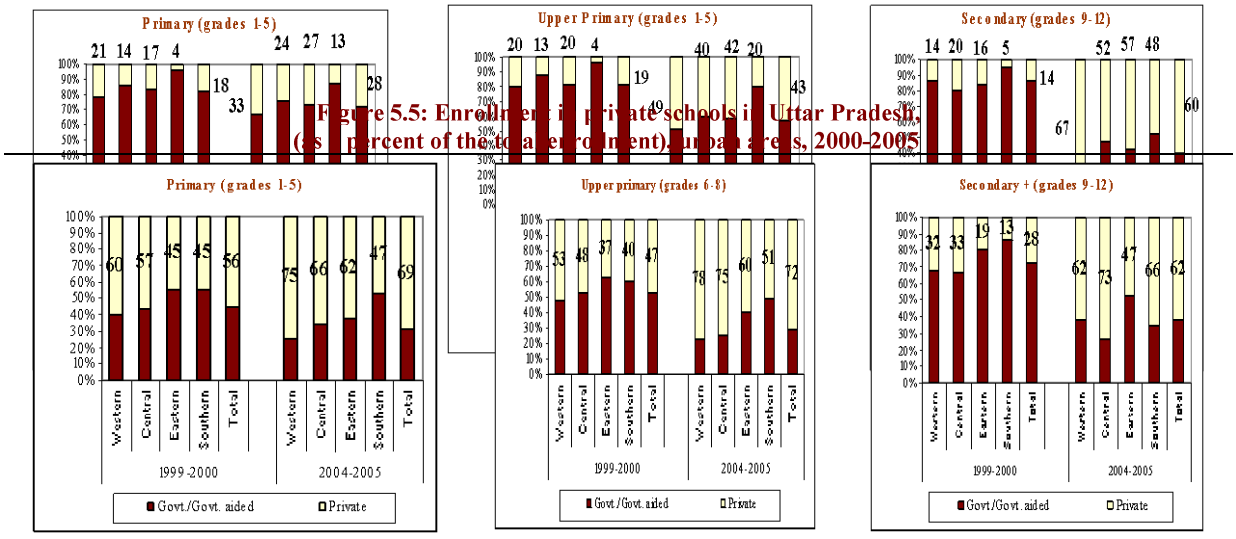
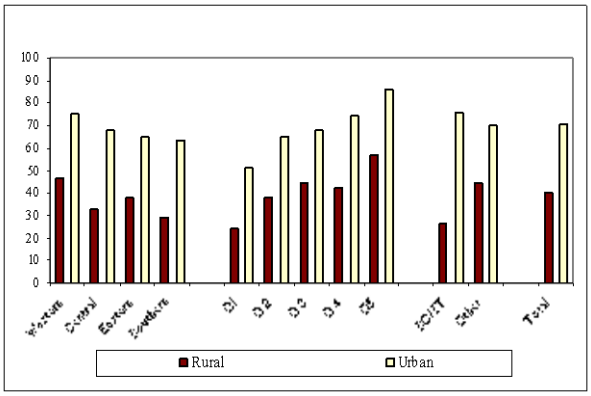


Figure 5.5: Enrollment in private schools in Uttar Pradesh, (as a percent of the total enrollment), urban areas, 2000-2005

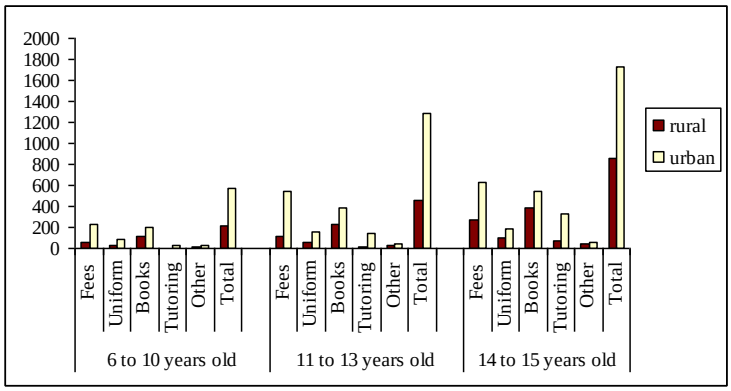
5.20 **Enrollment in private schools is associated with socio-economic status, although the poorer groups have also joined private schools.** Private school attendance has increased overall, including the poorest groups in rural and urban areas. Figure 5.9 presents private school enrollment as a share of total enrollment for 11-13 year old boys based on their background characteristics in 2005.

Figure 5.6: India Uttar Pradesh, a share of private enrollment among 11-13 years old boys, 2005



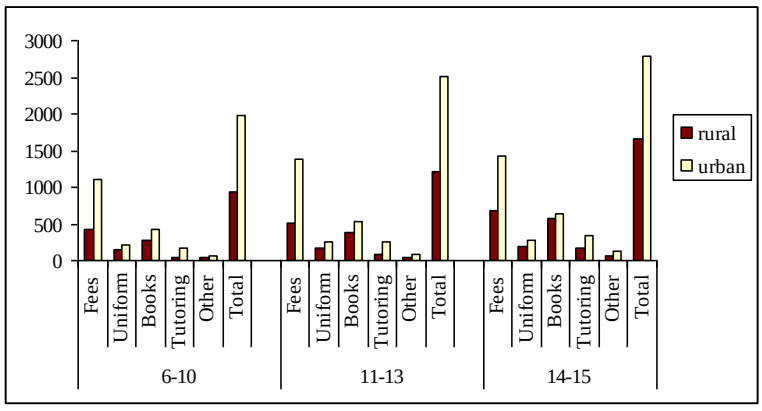
5.21 Overall, private enrollment in the wealthiest Western region is above average. In the poorest Southern and Eastern regions, they are lower than average. These patterns are generally true for all age-gender groups. At the household level, private school enrollment tends to increase with wealth. For example, in rural areas, 11-13 year old boys in the lowest PCE quintile have a 25 percent chance of attending private school and a 50 percent chance in urban areas. Boys in the top quintile have a 55 percent chance of attending private school in rural areas and an 85 percent chance in urban areas. De et al. (2002) and PROBE team (1999) confirm that enrollment in private school is considered a sign of social privilege. Overall, when it comes to private school attendance, the gap between rich and poor was less among 14-15 year olds and those in rural areas.

Figure 5.7: India Uttar Pradesh, average per pupil expenditures on various items in public schools, 2003



5.22 Generally, across all regions and age groups, a lower proportion of SC/ST boys and girls were enrolled in private school. This was particularly true of girls. However, in urban areas, private school enrollment among the SC/ST population of 11-13 year old boys was as high as 76 percent compared to the general population (70 percent), see figure 5.6. Private school enrollment dropped significantly to 26 percent among 14-15 year old SC/ST boys. The difference was particularly striking among 14-15 year old boys in urban areas; 37 percent of SC/ST was in private school compared to 66 percent of the general population. This gap is lowest in urban areas of the Western region.

Figure 5.8: India Uttar Pradesh, average per pupil expenditures on various items in private schools, 2003



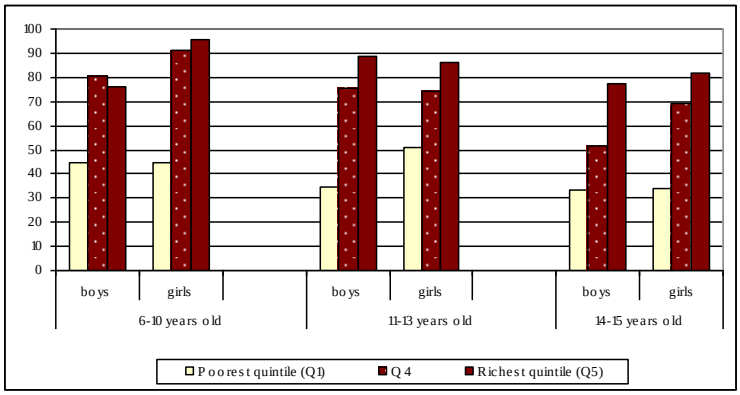
5.23 **Expansion in private education occurred despite its high private cost. The annual household expenditure for private school in rural areas was Rs 1,137 per child (on average it was 3.3 times higher than public school). In urban areas, it was Rs. 2,275 or 2.1 times higher**

than public school.[38] The average household expenditure for public and private school increases with the age of the child. Public school expenditures represent 1.7 (3.7) percent of household expenditures in rural (urban) areas. Private school expenditures represent 4.6 (7.2) percent, on average, in rural and urban areas. There is little variation in education expenditures for private school across regions. In rural areas, there is little variation in total expenditures for education across income groups for public and private school. In urban areas, richer households incur substantially higher expenditures for public and private school than poorer households. There is no difference in patterns or amounts of household expenditures for girls and boys in public or private school.

5.24 **In private education, school fees represent the greatest single private expense.** Private school fees increased for 11-13 year old children, but stayed flat for 14-15 year olds in urban areas. In rural areas, fees increased uniformly at all four education levels. In public schools in rural areas, books represented the highest category of expenditure for three age groups. School fees and expenses for uniforms were next. (figure 5.8). In urban areas, school fees and books are approximately the same.[39]

5.25 **The urban middle class and upper-classes have effectively opted out of the public education system.** Among the wealthiest 40 percent of households, 90 percent of them have enrolled their 6-10 year old children in private school. This was especially true of girls in this age group (figure 5.9). Evidence from diverse cultures shows that the middle class is more capable than the poor to exert pressure on authorities to improve the delivery of services. Worldwide, the most successful interventions have integrated the poor and the middle class in the same facilities. It is therefore a worrisome development that UP's urban middle class has effectively opted out of the public education system and left the poor in "poor" facilities. One intervention for the GoUP to consider is providing vouchers so that the poor can attend the same facilities as the middle class.[40] That would be in addition to improving the quality of public schools.

Figure 5.9: Private enrollment as a share of the total enrollment, by income level in Uttar Pradesh, urban areas, 2005



5.26 **Is it time to regulate private schools?**[41] Economic theory suggests there are three rationales for regulation: (i) ensuring a quality standard, (ii) ensuring competitive pricing and (iii) ensuring that prices reflect quality. Depending on the structure of the market and households preferences, regulation might help when the person "buying education" is different from the person "consuming education, or when information about quality is not readily available or when monopolistic practices

[38] In 2003, total household expenditures per child for 6-13 year olds in public school were Rs 340 in rural and Rs.1,060 in urban areas.

[39] Households also use private tutoring. Tutoring is more common at older ages (14-15) for boys and in urban areas. Private tutoring is strongly associated with income. The amount spent on private tutoring by those who avail themselves of these services is comparable (but higher) than the average total expenditure for education in public schools.

[40] An additional argument in favor of the voucher system is that in a medium run it may lead to substantial fiscal savings for the government. Although private schools entail higher private costs, they do not necessarily entail higher social costs. Throughout India, teachers' salaries in the public schools are considerably higher than those in the private schools (see Glinskaya and Lokshin (2007) and Howes and Murgai (2004)). The voucher system could lead to a lower average cost of education. Please note: on average, private schools may cost less than public schools, and yet, in certain regions or areas within villages, the marginal cost of private schooling may be higher. Assessing the costs and comparative advantages of public vs. private education warrants further study.

[41] We thank Jishnu Das for helping us to work out these points.

prevail. These questions are the subject of an empirical investigation which would ascertain whether the structure of the education market in UP is such that issues (i) – (iii) present a problem. Evidence from Punjab, Pakistan (see Andrabi et al. "Pakistan, Leaning and Educational Achievements in Punjab Schools (LEAPS): Insights to inform the education policy debate") suggest that the inherent ability of parents to choose their children's schools has more of an impact than the bureaucracy can achieve with its safeguards for educational quality (box 5.1). The study advances the argument that regulation might be premature at the early stages of the development of private education. With that in mind, it is important for UP to start purposeful data collection to ascertain the structure of the education marketplace and household preferences.

Box 5.1: Is it time to regulate the private sector?
Evidence from Leaning and Educational Achievements in Punjab Schools (LEAPS)

Economic theory suggests that there are three rationales for regulation: (i) ensuring a quality standard, (ii) ensuring competitive pricing and (iii) ensuring that prices reflect quality.

The first rationale for regulation is to ensure that every school meets a minimum quality standard. But, the bulk of the poorly performing schools are *government schools*. While top government schools are only slightly worse than top private schools, the performance of the worst government schools is much worse that that of the worst private schools. The same goes for infrastructure—of the 100 schools with the worst infrastructure, 98 are in the public sector. This is particularly a problem because parents invest more in children they think are more intelligent (e.g., they select private schools). Children perceived as "less intelligent," who are overwhelmingly enrolled in government schools, may not be receiving an education that meets a basic minimal standard.

The second rationale for regulation is to address pricing inefficiencies arising from monopolistic behavior. Typically, every country looks at such issues and advocates alternatives. Since private schools overwhelmingly locate in schooling clusters, they *cannot* behave as monopolies. The direct competition from other schools keeps their prices low. Indeed, the average profit of a rural private school in Punjab is approximately the salary of one male teacher.

The third often-used rationale for regulation is that consumers are unable to evaluate the quality of the product they receive, and that it is cheaper to regulate quality rather than provide information. As data show, the average household is actually fairly good at distinguishing schools that perform well from those that perform poorly. Unlike the private sector where prices signal quality so that schools with higher test scores charge higher fees, in the government sector, all schools are free. Therefore, parents may find it harder to evaluate their relative performance. Once again the standard rationales for regulation suggest that it is schools in the government rather than the private sector that deserve closer attention. Furthermore, if there is a set of parents who do not know much about schools, providing information itself is a feasible alternative. Not only does this enable parents to make better decisions, but it can also lead to greater competition across schools leading to better outcomes. A pilot study shows that providing information about school test scores in the village *does* lead to improvements in learning and that these improvements are higher for initially poorly performing children. Fixing the underlying failure of information may be easier than imposing additional regulatory structure from above.

Of the three rationales for regulation—ensuring a quality standard, ensuring competitive pricing and ensuring that prices reflect quality — schools in the government sector are more likely candidates for regulation than those in the private sector. But government schools are already regulated. It appears the inherent ability of parents to choose schools is better than the safeguards in educational quality the bureaucracy can achieve. Given these data, the issue of regulation of a new activity may be premature.

from Andrabi et al. 2007 "Pakistan, Leaning and Educational Achievements in Punjab Schools (LEAPS): Insights to inform the education policy debate".

5.5 Quality of schooling

5.27 Improving the attendance and graduation rates of children is only part of the educational process. The ultimate goal -- to impart children with knowledge – is not easy to measure and quantify. This section identifies other proximate indicators to assess how well the teaching process is working. These indicators have come from various special purpose surveys (box 5.2 and box 5.3, next page) and include (i) teacher attendance or absenteeism rates, (ii) the amount of time that teachers actually spend teaching and (iii) children's scores in various proficiencies.

5.28 **Teacher attendance in UP seems to have improved during the early 2000s, but still a quarter of all rural schools doesn't have all teachers present.** Evidence from four studies showed improvements in teacher attendance in UP's government schools (table 5.6). About 75 percent of teachers were in their classrooms in early 2000. This number had increased to about 92 percent by mid-2000. Slightly more than one-half of the schools had all teachers present in 2005. By 2007, that

figure had increased to 75 percent. Both statistics are comparable to other states where the surveys took place (AP and MP) and for India as a whole.

Box 5.2: Annual Status of Education (ASER) survey in Uttar Pradesh

Annual Status of Education (ASER) survey has been implemented by Pratham. Pratham is based on a triangular partnership: the government, the corporate sector and citizens. In each city, corporate leaders have taken the lead, the government has responded by opening its school and sharing its facilities. Community volunteers, mostly young enthusiastic women from slums, have implemented the Pratham programs. Since inception, the goal has been to ensure that "every child is in school and is learning well." To date Pratham implemented three ASER surveys in 2005, 2006 and 2007. Here are the characteristics of the ASER samples and methodology.

ASER 2006	ASER 2007
Based on a nationwide, district disaggregated - household survey.	Sampled over 16,000 villages all across rural India. The selection was based on Probability Proportional to Size (PPS) Sampling technique.
15,610 villages from 549 districts out of about 587	Covered over 700,000 children and over 13,000 schools.
318,000 households; 750,000 children age 3-16; 500,000 women	Selected 30 villages per district and 20 households per village (600 households per district)

During ASER 2005, one government primary school was visited in each sampled village. This was not done in ASER 2006 but was done again in ASER 2007. The 2007 ASER survey started identifying whether the sampled child was enrolled in the school that was visited. The sampling strategy was to generate a representative picture of each district. The responses then were aggregated and weighted for the state and for India as a whole. The villages were randomly selected based on the village directory for the 2001 Census. ASER 2006 retained 20 villages from 2005 and added 10 new villages. ASER 2007 randomly dropped 10 villages from ASER 2005, kept 10 villages from 2006 and added 10 more villages from the census village directory. The 10 new villages were chosen using PPS. The 20 old villages and the 10 new villages represent a "panel" of villages. This panel, in turn, generates a more precise estimate of change. ASER tested children in basic competences in languages and math. They collected background information on schools, teachers, children and their parents.

Table 5.6: India, the extent of teacher attendance/absenteeism, Uttar Pradesh and selected states

		India	AP	MP	UP
Teacher Attendance Rate					
World Bank (2002)		-	75	84	75
Annual State of Education in India (ASER)	2005	75	77	76	79
	2007				92
Independent Study commissioned by MHRD, (2006)		-	79	67	78
Teacher's Time-on-Task study (2006-07)		-	83	82	85
Percent of schools with all teachers present					
Annual State of Education in India (ASER)	2005	51	47	58	56
	2007				75
Teacher's Time-on-Task study (2006-07)		-	53	62	58

Sources: The World Bank (2002);
ASER by PRATHAM , see Box 5.2 and http://www.pratham.org/
MHRD (2006) adopted from D. Sankar "Unraveling Teacher's Time on Task: Evidence from three Indian States."

5.29 **While teacher's absences are detrimental to learning, children who skip class are a problem too.** In 2007, the average attendance rate for children enrolled in primary school was around 66 percent. About 20 percent of schools had an attendance rate of less than 50 percent. Slightly more than one-third of all schools had an attendance rate that exceeded 75 percent for all children who were enrolled. Between 2005 and 2007, these three measures improved slightly.

Table 5.7: Children's attendance in grades 1-8 in Uttar Pradesh (percent of children attending)

	2005	2007
enrolled children attending (average)	63	66
schools with less than 50 percent enrolled children attending	23.5	20
schools with 75 percent and more enrolled children attending	33.7	37.8

Source: ASER 2005 and 2007

5.30 **Evidence shows that schools experience a considerable loss of instructional time. That is because teachers are deputized for the work of other departments, various non-academic activities, including administrative duties, such as the mid-day meal program, enrollment, child census, etc.** In the classroom, teachers engage students about 80 percent of the time. According to the *Teacher's Time-on-Task* study, classroom teaching accounted for 56 percent of the academic year. That is lower than AP which was 69 percent, but higher than MP, which was 51 percent. Experienced teachers tend to spend less time on teaching and more on administration. Part of the reason why the quality of private schools is perceived to be higher is that teachers in private school spend more time on academic duties (table 5.8).

Table 5.8: India, Uttar Pradesh: time use in the classroom, by school type

	Government	Private
Allocated time	100	100
Available time	97	99
On duty time	93	96
Phy. presence time	88	95
Academic time	82	91

Source: "Teacher's Time on Task" study (2006)

5.31 **Basic competencies of students in UP are low but improving.** According to the ASER data, UP's Western region has the highest leaning outcomes of all four regions although the regional differences are not large. On average, about 67 percent of children in grades 1-2 were able to read letters and words in their own language compared to 68.5 percent in the Western region. Meanwhile, on average in all regions, about 65.7 percent of children recognized numbers compared to 68.8 percent of children in the Western region. The Western region scored a greater advantage in various competences in English (table 5.9). The Central region lagged, especially in subtraction, for grades 3-5.

5.32 Between 2006 and 2007, there were some improvements in all performance indicators, except subtraction. The greatest improvement occurred in the Eastern region, which had the lowest scores in 2006. In 2007, it converged with the other regions on basic skills, such as reading letters, recognizing numbers and reading "level 1" text. Across all four regions, the greatest improvement was in the percent of children who recognized numbers.

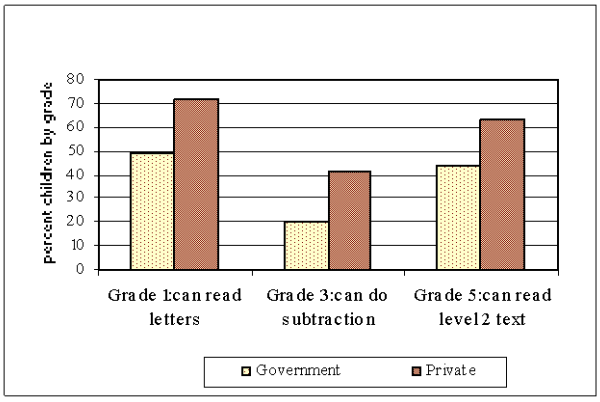
Table 5.9: Uttar Pradesh: performance of regions by percent of children who can do the following

	Grades 1-2		Grades 3-5		Grades 1-2	Grades 3-5
	read letters and words in own language	recognize numbers	read "level 1" text in own language	do subtraction	read letters or more in English	read sentences in English
				2007		
Central	64.9	66.1	41.9	32.1	41	7.5
Eastern	67.6	64.4	54.5	41.1	41.4	11.1
Southern	68.6	64	47.7	45.2	37.9	7.3
Western	68.5	68.8	53.2	47.5	52.3	13.3
Total	67.2	65.7	52.2	42.8	44.3	11.1
				change in percentage points between 2006-2007		
Central	5	23	0	-7	n/a	n/a
Eastern	13	24	1	-6	n/a	n/a
Southern	4	18	-4	-2	n/a	n/a
Western	4	18	-2	-5	n/a	n/a
Total	9	22	1	-4	n/a	n/a

Source: compiled from district-level data presented in ASER 2007

5.33 **All learning outcomes in private schools are higher compared with public schools.** The gap is particularly large for subtraction. While this indicates private schools might be providing a better education, the population of children attending private schools could also be different. For example, their home learning environment could be different from children who go to public school. Children attending private schools come from wealthier households (see above). This correlates with better learning outcomes (see below).

Figure 5.10: India Uttar Pradesh, selected learning achievement in public and private schools



5.34 The "**Teacher Accountability and School Outcomes" study shows more negative results for student achievements**[42]. In language comprehension, the average score for grade 2 was 20 percent. In grade 4, it increased to 27 percent for UP compared to 33 percent for MP and an even higher percentage than that for Karnataka. In math, on average, the correct score for grade 2 was 13 percent and in grade 4 it was 23 percent compared to 29 percent for MP. This picture is fairly stark. Nearly 67-78 percent of children in grade 4 cannot read a simple sentence or perform simple arithmetic. In addition, these results show that the gains in learning have been small from one grade to the next.

Box 5.3: Teacher Accountability and School Outcomes: Impact of Information Campaigns in Two Indian States

The study was conducted as a randomized controlled trial in 400 *gram panchayats* (GPs). The purpose was to estimate the impact of an information campaign on student achievements. The campaign informed parents and community members about the detailed roles and responsibilities of the village education committees, rules for selection of VEC members, organization and funding of school accounts, where to complain about school related problems and benefits that students in primary grades are entitled to, such as a cash stipend, textbooks, mid-day meal, school uniforms etc.

The baseline survey was conducted in UP, MP and Karnataka between February-April 2006. The information campaign was carried out from September to November 2006. Follow-up surveys were administered between February-April 2007.

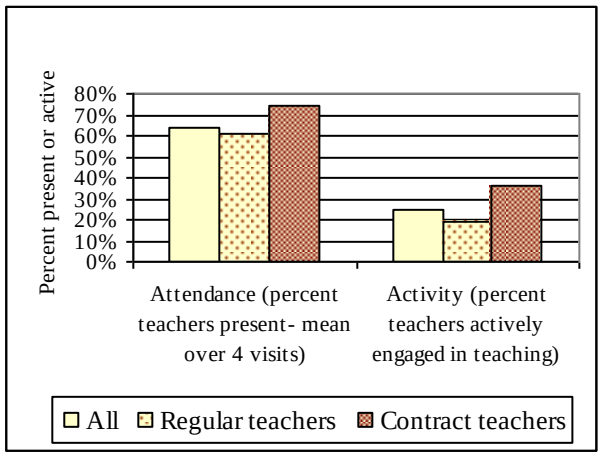
5.35 While school instruction is important, children also learn from their families. The "Teacher Accountability and School Outcomes" study collected various individual and school-level information about the impact of home environment.

5.36 **School and teacher characteristics correlate with test scores.** The teacher-pupil ratio is positively and significantly correlated with hindi and math test scores in all grades. An extra teacher is associated with an increase in scores of three percentage points. The teacher activity variable (i.e., the fraction of teachers engaged in a school activity averaged over four visits) is positively and significantly correlated with hindi and math test scores in all grades. If the percentage of teachers actively engaged in teaching increased by about 30 percentage points (the average activity is 25 percent), scores would go up by about four percentage points. If 80 percent of the teachers were to become actively engaged in teaching, language and math scores would be higher by seven and eight percentage points, respectively. Controlling for activity, teachers' attendance is not significant in most regressions. Most other characteristics of teachers and the school are insignificant. In-service training seems to have no correlation with test scores -- except for grade two math scores where it is negatively correlated. This may reflect the time teachers spend away from school. In-service training in most states occurs during the school day. That means participating teachers have to be away for training.

[42] This section draws heavily on Pandey P.el.al, "Teacher Accountability and School Outcomes: Impact of Information Campaigns in Two Indian States" conducted in UP, MP and Karnataka in 2006 and 2007, see Box 5.3.

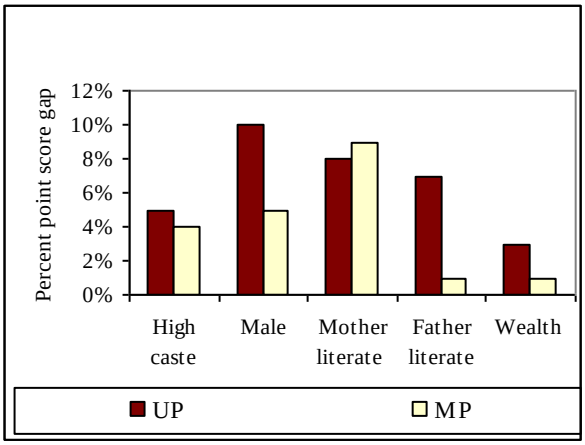
5.37 The school variable which is consistent and significantly correlated with learning achievement is teacher engagement in teaching. Average teacher attendance is low and teacher engagement in teaching is even lower. On average, 25 percent of teachers in UP were present and actively engaged in teaching; this is similar to MP's 30 percent. If about half of all teachers were engaged in teaching, math and language scores for the three grades would be higher by 17-31 percent. One might expect an increase in teacher activity to be associated with a greater increase in scores than these findings. One explanation may be the teacher activity variable may not be a precise measure of the teacher's effort. Another more important reason: teachers do not seem effective in classrooms even if their attendance and engagement go up.

Figure 5.11: India, Uttar Pradesh, teacher effort



5.38 There are indications that contract teachers (*shiksha mitra*) have a significantly higher attendance and level of activity compared to regular teachers, on average. Contract teachers differ from regular teachers in that they tend to be younger, better educated, female, with fewer years of experience and much less likely to have received any pre-service training. This difference in attendance and activity remains significant even after controlling for teachers' and school characteristics. Those teachers who are likely to be present more often are contract teachers and those without a college or a graduate degree. Teachers who are more likely to be active i.e., present and engaged in teaching, are contract teachers, those without a college or a graduate degree, who are younger and female. Contract teachers' attendance is higher by 10 percentage points than regular teachers; their activity is seven percentage points higher. Both these differences are significant at *p* values below 5 percent.

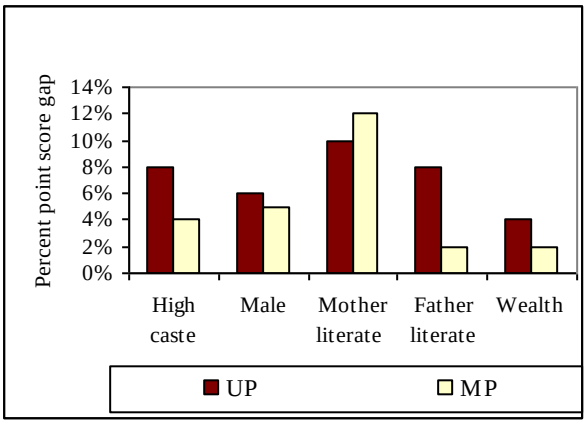
Figure 5.12: India, Class IV Math score gap by student characteristics in Uttar Pradesh



5.39 **While school and teacher characteristics are important in determining student's outcomes, family background is also correlated with test scores.** A number of student characteristics are significant and sizeable in test score regressions (figures 5.12 and 5.13). Older students and boys do better. An increase in age by one year increases scores by two percentage points. Boys score six percentage points higher than girls. Those from a high caste (i.e. neither OBC nor SC/ST) score five to eight percentage points higher. Those whose wealth is above the median score three to four percentage points higher. Those with a literate mother have an 8 to 10 percentage point higher score and those with a literate father have a 7 to 8 percentage point higher score. The results are similar for grades two and three.

5.40 **Students' characteristics tend to be correlated with test scores much more in UP compared to MP.** These findings mean that UP school systems are less likely to mitigate the disadvantages of students from less wealthy backgrounds. On the language test, high caste children do significantly better in UP but not in MP. In the math test, high caste children do significantly better in UP and MP. Children from wealthier families perform significantly better in UP.

Figure 5.13: Class IV Language score gap by student characteristics in Uttar Pradesh



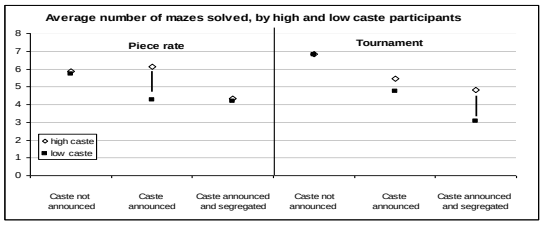
5.41 **What are the mechanisms by which caste influences test scores?** An experiment in Uttar Pradesh finds that making salient the membership of an individual in a high or low caste can change his behavior even when that information is irrelevant to "payoffs". In the experiment, publicly revealing the caste of children can create a caste gap in achievement (Box 5.4). Results of this experiment seem to indicate that being in a member of a low caste group affects economic outcomes in customary day-to-day contexts, through modified behavior of low caste individuals. Thus the adverse effects of a discriminatory regime may have long, lingering effects.

Box 5.4: Discrimination, social identity, and durable inequalities: Experimental evidence from Uttar Pradesh

Experimental research from central, rural Uttar Pradesh examines whether caste matters for achievement in learning and performing a simple task—solving mazes. In the experiment, 11-12 year old boys (6th and 7th graders) drawn from the extreme ends of the caste hierarchy were asked to solve mazes, with payment either for the number of mazes solved (*piece rate treatment)* or for the child who did the best in his session (*tournament treatment)*. Six boys - three low caste and three high caste - participated in each session. The boys did not know each other. Under some treatments, the game was run with no announcement of caste identity, while in others, the caste and the villages of the children were announced. In the first case - with no announcement of caste- there was no difference in performance between the low caste and high caste subjects. In contrast, when caste identity was announced, a significant caste gap emerged. In the piece rate treatment, the average number of mazes solved by the low caste declined by 20 percent, and the average number of mazes solved by the high caste rose slightly but not significantly. These result are robust to controls for the children's class—parents' education, occupation, and land. Thus, the effect of revealing caste is not due to a "poor versus rich" effect.

The finding that revealing caste caused a significant decrease in the performance of low caste subjects, compared to that in the anonymous condition, could possibly reflect intimidation of the low caste subjects by the high caste subjects, rather than an effect of social identity per se. To check this, a third condition was implemented that was identical to the caste announced condition, except that the sessions comprised low caste only or high caste only. As shown in the figure, there was no improvement in the average performance of the low caste participants as a result of segregation. This supports the conclusion that it is expectations associated with social identity that drive the caste gap when caste is announced.

A surprising result uncovered in this condition is that segregation significantly lowers average high caste performance in the piece rate treatment. There are several interpretations. Finding themselves in a session with only high caste individuals—an event that could not plausibly be accidental—could be perceived as a kind of recognition of their caste status, which might deflect their attention from the meritocratic incentives for performance. Segregation might also eliminate the high caste individuals' incentive to excel in order to distinguish themselves from their low caste peers.



Note. Vertical lines indicated significant caste differences in performance.

Source: Hoff and Pandey, "Discrimination, Social Identity, and Durable Inequalities," *American Economic Review Papers and Proceedings*, May 2006, pp. 206-11. Hoff and Pandey, "Belief Systems and Durable Inequalities, An experimental investigation of Indian caste," Policy Research Working Paper 3351, June 2004.

CHAPTER 6: HEALTH OUTCOMES AND HEALTH CARE UTILIZATION

6.1 Introduction and summary

6.1 Health outcomes in UP improved in the past decade, but, in general, these achievements are below the national average. Similar to trends in economic indicators, greater strides occurred in rural areas, but the outcomes there were below those in urban areas. Variations in health outcomes exist across regions and socio-economic groups. Being, poor, rural, and illiterate are all associated with poorer health outcomes and less use of appropriate health services. Although members of low socio-economic groups are consistently worse off, there is not a consistent regional pattern for major health care indicators. The highest rates of childhood malnutrition are in the Central region, but the severest cases are in the Western region. In general, the Southern region has better indicators for nutrition; however, anemia there is relatively high. Immunization rates vary by vaccine, although full vaccination is worst in the Southern region. Broadly aggregated, poor-performing districts are clustered in the north-central area of the state; these figures are consistent with low rates of literacy and education for females.

6.2 The majority of health care in Uttar Pradesh comes from the private sector. Nearly 90 percent of rural and urban residents utilize the private sector for outpatient care compared to 78 percent in rural and 81 percent in urban areas nationally. Likewise, 74 percent of rural and 68 percent of urban residents frequent private hospitals compared to 59 percent of rural residents and 63 percent of urban residents nationally. Use of public facilities is highest in the Southern region and lowest in the West.

6.3 The priority should be to reduce infant, child, and maternal mortality, the incidence of communicable diseases and to improve reproductive health. The achievement of these goals will require improved essential health care services, such as coverage for immunization, family planning, and institutional (or safe) deliveries, early recognition and prompt and effective treatment of life threatening illnesses, especially acute respiratory infections (ARI), diarrhea, malaria and TB, and access to reliable basic health care, as well as health advocacy for increased knowledge and understanding of appropriate health behavior. It is also necessary to increase investment in nutrition, education, water and sanitation and to improve regulation of the iodine content in salt.

6.2 Trends in Health Outcomes

6.4 Health outcomes show improvements, but are generally worse than the national average and improving at a slower rate than the trends for India as a whole. Life expectancy in UP is 59.1 years compared with the national average of 62.5 years (table 6.1). While women generally live longer than men in India, rural women in Uttar Pradesh do not; they can expect to live a year less than their male counterparts. Urban women live longer than their male counterparts, but the difference is not as large as the average for India. Improvements in life expectancy have been greater in rural areas where they keep pace with improvements in national life expectancy. Overall, rural residents gained 3.8 years with women making greater gains (4.4 years) than men (3.5 years) between 1988-92 and 2000. Urban residents fared worse; their gains were below the national average. Overall, urban life expectancy grew by three years as compared with 3.8 years nationally. As in rural areas, female life expectancy (3.1 years) grew more than male life expectancy (2.7 years), table 6.1

Table 6.1: Life Expectancy at birth in Uttar Pradesh

	Uttar Pradesh			India		
	1988-92	2000	change (years)	1988-92	2000	change (years)
Total	55.4	59.1	3.7	58.7	62.5	3.8
Urban	60.1	63.1	3.0	64.1	67.9	3.8
Rural	54.4	58.2	3.8	57.4	61.2	3.8
Males	56.1	59.4	3.3	58.6	61.6	3.0
Urban	59.7	62.4	2.7	62.8	66.3	3.5
Rural	55.4	58.9	3.5	57.2	60.3	3.1
Females	54.5	58.5	4.0	59	63.3	4.3
Urban	60.6	63.7	3.1	65.5	69.2	3.7
Rural	53.2	57.6	4.4	57.4	61.8	4.4

Source: SRS 2002 and abridged life tables

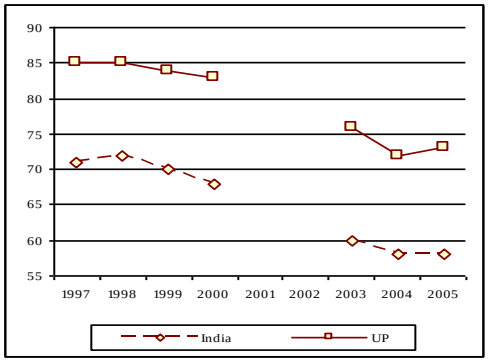
6.5 **Due to trends in rural areas, the Infant Mortality Rate (IMR) declined, but it is still well above the national average.** The NFHS-III estimate was 73 per 1,000 live births compared to 57 nationally (table 6.2). In UP, the urban IMR (64) is substantially better than the rural IMR (75) and mirrors national patterns. Rural IMR declined, but urban IMR stagnated. Poor maternal nutrition, low birth-weight, poor infant nutrition, and post-birth infectious diseases are the main proximate causes of neonatal deaths (nearly two-third of infant deaths occur in the first month, and the rest in the 1 month-1 year period). About half of the deaths in children age one to four are due to acute respiratory infections (ARI), anemia, diarrhea, dysentery, malaria, and other infectious and parasitic diseases.

Table 6.2: Infant Mortality rate in Uttar Pradesh - 1999-2006 (1000 live births)

	Uttar Pradesh			India		
	Urban	Rural	Total	Urban	Rural	Total
1999	63	94	89	47	73	68
2005	64	75	73	42	62	57

Source: NFHS-2 and 3

Figure 6.1: Infant mortality in India and Uttar Pradesh, 1997-2005



6.6 As a long-term trend, the IMR rate in UP appears stagnant or worsening as it is in India as a whole. As yet, it is unclear whether this recent increase constitutes a reversal of a long-term trend (figure 6.1).

6.7 **Maternal mortality is high but declining.** SRS reports that UP's Maternal Mortality Ratio (MMR) fell from 606 in 1998-1999, to 539 in 1999-2001, to 517 in 2001-2003. These numbers are well above the national averages of 398, 327, and 301, respectively, and they are not on track to meet the MDG of 100 by 2015. Additionally, the declines in UP are smaller than what is occurring in the country overall. SRS reports a decrease of 24 percent in MMR for the country. In UP, from 1997-2003, MMR declined by just under 15 percent.[43]

Table 6.3: Maternal Mortality in Uttar Pradesh

	1998-1999	1999-2001	2001-2003	change 1998-2003
India	398	327	301	24.4
Uttar Pradesh	606	539	517	14.7

Source: SRS 2006

6.8 Nutrition, reproductive health, and morbidity indicators hover just under the national average; however, fertility indicators are much higher than average. Anameia rates in women are slightly lower than the national average. Nevertheless, more women in UP than nationally have a low Body Mass Index (BMI). BMI is defined as under 18.5 kg/m^2 (a measure of undernutrition). In 1998, 49 percent of women were reported anemic and the number grew to 51 percent in 2005 (NFHS-2 and NFHS-3). At the same time, only 47 percent of households use adequately iodized salt (UP Department of Planning 2005), which is supposed to help women who are anemic. In 2005-06, the Total Fertility Rate (TFR) was 3.82, which represents a decline from 4.06 in 1998-99, compared to 2.68 (declining from 2.85) nationally.[44]

6.9 Generally, rural areas have lower outcomes as compared to urban areas. Anemia among women is highest in the Eastern region; the Southern region has the highest incidence of low BMI. The highest rate of TB infection is in the Central region; problems with reproductive health occur in the Western region and malaria is most prevalent in the Southern region. Health outcomes are generally lower for SC/ST groups, particularly TB. TB is 50 percent more common among the SC/ST than in the majority (or "other") castes, table 6.4.Wealth and education are associated with higher health outcomes.

[43] The direct causes of maternal mortality are related to hemorrhage and sepsis or toxemia as well as proteinuria and hypertensive disorders or abortive outcomes. The indirect causes of the high number of maternal deaths in UP stem from anameia, lack of access to appropriate peri-natal care, lack of understanding of the risks associated with pregnancy and the resultant inability to prepare for them. These are particularly severe among the poor.

[44] Bihar is the only state in India with a higher TFR.

6.10 In UP, the prevalence of TB and malaria exceeds the national average (based on NFHS-2, table 6.4).[45] Malaria rates have declined over the last several years, but are cyclical. The last major outbreak was in 1996-1997.

Table 6.4: Nutrition, reproductive health, and morbidity indicators by background characteristics in Uttar Pradesh (in percent), 1998-99

		women with anemia*	BMI <18.5 kg/m^2	reproductive problem	suffering from TB**	prevalence of malaria ***
All India		51.8	35.8	39.2	544	4.0
UP		48.8	35.1	37.5	552	3.5
Residence	Urban	45.5	23.7	36.6	499	1.5
	Rural	49.6	38	41	566	4.1
Sector	Western	37.3	30.5	48.3	554	4.6
	Central	52.9	39.3	22.9	746	2.7
	Eastern	58.3	36.2	34.1	465	2.6
	Southern	39.3	41.6	40.7	518	6.6
Social Group	ST/SC	55.4	44.4	35.1	799	4.6
	OBC	57.1	40.9	34.1	375	3.7
	Other	48.1	40	37.4	507	4.6
Wealth quintile	Poorest	41.2	21.2	40.2	474	1.9
	2nd					
	3rd	52.5	39.7	35.4	673	3.6
	4th	52.8	35.7	34.6	450	3.4
	Wealthiest	43.9	30.6	37.7	580	3.8
Education	None	50.8	38.9	37	563	3.5
	Primary	46.6	34.7	40.8	681	3.2
	Secondary	47.8	26.7	39.6	509	4.1
	Higher	36.3	15.3	31.7	397	2.8

Source: NFHS-2.
Note: *age 15-49; ** number per 100,000 population; *** last four months

6.11 **Reproductive health indicators improved between 1999 and 2006.** The percentage of women receiving at least one ante-natal check up nearly doubled, and the percentage of those who delivered in institutions increased by almost 50 percent (table 6.5). The use of contraceptive methods also went up as did the number of births attended by trained professionals, but these improvements were less than those of pre-natal care and hospital deliveries. Use of contraception is an important tool in the fight to reduce infant and maternal mortality. Increasing the interval between births and decreasing the total number of children bodes well for the survival of mother and child. The main form of contraception used in all regions is female sterilization (about 59 percent of those who use modern contraception choose this method). Condoms are next (the choice of nearly 30 percent of contraceptive users).[46] Those who choose female sterilization are often not made aware of other options. Just 19 percent of those sterilized were told of other methods of contraception (RCH-II). Without offering more than one option, it is unlikely that the use of contraceptives will increase

[45]These estimates seem quite low. On an annual basis, TB new smear positive cases are estimated to be around 95 per 100,000 population. A national program that targets detection and treatment began in 1997, but the new sputum positive (S+) case detection rate hovers around 55 percent. Evidence suggests that case detection is falling (tbcindia.com).

[46] Use of male sterilization is almost non-existent, but in medical terms it is considered safer than female sterilization. In UP male sterilization decreased; it went from 0.4 percent in NFHS-2 to 0.2 percent in NFHS-3.

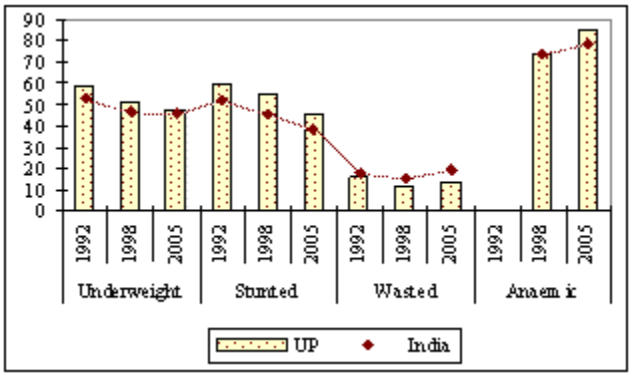
dramatically. Between 1999 and 2006, use of pills also increased from 1.2 percent to 1.7 percent of married women age 15-49. According to NFHS-3, the unmet need for the spacing of births dropped from 11.8 percent to 9.3 percent; the unmeet need for limiting births declined from 13.6 percent to 12.6 percent.

Table 6.5: Uttar Pradesh, Selected reproductive health indicators 1999 and 2006

	NFHS-2 (1998-99)	NFHS-3 (2005-06)
Percentage of pregnant women receiving at least one ante-natal check up	34.5	67.3
Percentage of deliveries in institutions	15.2	22
Percentage of births attended by a doctor, nurse or ANM or other health worker	21.8	29.2
Percentage of married women using any modern contraceptive method	20.8	29.3

6.12 **While fewer children in UP were wasted than nationally, more were stunted or underweight. The percentage of the population with anaemia grew.** Under-nutrition is improving, but the number of acutely hungry (wasted) children and those with anaemia increased from 1998. The prevalence of anaemia among children grew from 73.8 percent to an astounding 85.1 percent (figure 6.2).

Figure 6.2: India and Uttar Pradesh key nutritional indicators for children (under age 3) 1992-2006



Note: percent Underweight = percent Weight for age <– 2SD; percent Stunted = percent Height for age <– 2SD; Wasted = percent Weight for Height < –2SD. Anaemia age 6-35 months (not measured 1992).
Source: NFHS 1, 2, and 3, 1992-1993, 1998-1999, and 2005-2006.

6.13 The recent campaign for polio immunization (pulse polio) has shown that a concerted effort to increase immunization rates can happen in a short period of time. Receipt of the three recommended doses of polio went from 41.3 percent in 1998-1999 to 87.5 percent in 2005, after making only modest gains from 1992.

6.14 It should be noted that the polio vaccine is an oral dose that does not require an injection. That makes it less reliant on needle and syringe supplies and easier for less-skilled health workers to administer the vaccine. Immunization rates for polio have vastly increased. And yet, immunization rates for other diseases have shown only modest gains and DPT vaccinations may have declined (table 6.6). RCH-II data shows a slightly higher rate of those who are fully immunized as 28.1 percent in 2004. Due to the different sampling strategies and different variable definitions, it is difficult to draw comparisons between NHFS and RCH data. Nevertheless, both data sets are widely used to measure health outcomes in India.

Table 6.6: Immunization rate trends in Uttar Pradesh

	BCG	3+ DPT	3+ Polio	Measles	Fully Immunized
1991-92	48.9	34.1	37.1	26.3	19.8
1998-99	56.5	32.7	41.3	33.5	20.2
2005-06	61	30	87.5	37.5	22.9

Source: NFHS I, II and III.

6.15 **Uttar Pradesh is one of 12 states where leprosy is present at endemic levels.** Over the past eight years or so, a major effort occurred to eradicate leprosy, but there are still several districts where

it exceeds 5/10,000 (NCMH 2005). National programs in TB control, malaria control, HIV/AIDS and the Infectious Disease Vector Control Program are helping to track, prevent, and reduce the incidence of those diseases. The TB rate is declining, but not changing dramatically. In addition, there continues to be seasonal surges in water and vector-borne diseases.

6.16 **The sex ratio has improved since 1991 when it was 876. Now the 0-6 sex ratio is 916, which is down from 927 in 1991.** The sex ratio is commonly watched in India as an indicator of gender equity. A "normal" sex ratio at birth should be in the range of 971 to 935 girls per 1000 boys. The sex ratio in Uttar Pradesh is 898, which is below the national average of 933. Even though a national law makes sex determination tests a criminal offense, there is a popular impression that families still obtain sex determination tests, and then terminate female fetuses. Sex disparities are also evident in health service outcomes where boys are slightly more likely to get vaccinated than girls. Even after controlling for region, sector, caste, standard of living, mother and father's literacy and mother's age, boys are about 20 percent more likely to be vaccinated.

6.17 **Communicable diseases are still a major public health problem among adults.** Due to unhygienic practices, there is a seasonal surge in infectious diseases such as gastroenteritis, typhoid, and hepatitis. The rainy season floods help contaminate water supplies and facilitate the spread of water-borne diseases. About 56 percent of ailments of short duration were due to infectious and parasitic diseases; 92 percent of rural hospitalizations were also (based on 1995-96 NSS round 52). A proximate cause for the prevalence of communicable diseases is the infrequent use of proper sanitation facilities in rural UP. In 2003, less than 10 percent of rural inhabitants had flush latrines or septic tanks in their houses. Connection to drains is more common; 63 percent of rural residents' dwellings have a connection to an open or a closed drain (Chapter 2). The situation is better in urban areas, but there is a big gap between the poor and non-poor in access to proper sanitation facilities (Chapter 2).

6.3 Regional disparities in utilization of health care[47]

6.18 **Health service utilization varies across UP. No one region outperforms the rest.** Utilization of reproductive health care services has a direct relationship to maternal and child health. They could be considered an approximation of health outcomes which vary by district. On average in UP, 73 percent of children receive medical treatment for diarrhea; the district averages vary from 48 percent to 95 percent. Overall, 74 percent sought treatment for acute respiratory diseases (ARI), while district rates vary from 48 percent to 94 percent. While there is wide variation by district, no consistent pattern of regional performance emerges. For example, Kaushambi district (Eastern region) ranks near the bottom for nearly every considered indicator, but is in the middle for the percentage of children with ARI who sought treatment from a medical facility (figure 6.3). Lucknow (in the Central region) has the best overall indicators, but is ranked number one only for the percentage of women who received three pre-natal visits (figure 6.3). Ballia (in the Eastern region), another top performer, has a moderate ranking for treatment of ARI and use of modern contraception. Chandauli (in the Eastern region) ranks near 10 out of 72 for many indicators, but is in the 40s for antenatal care. Districts that do well on one indicator often score below average on others. On a few indicators, the very worst or the very best tend to come from the same region. For example, the highest rates of medical treatment of diarrhea and pneumonia are in the Western region; the lowest use of modern contraception occurs in the Eastern region.

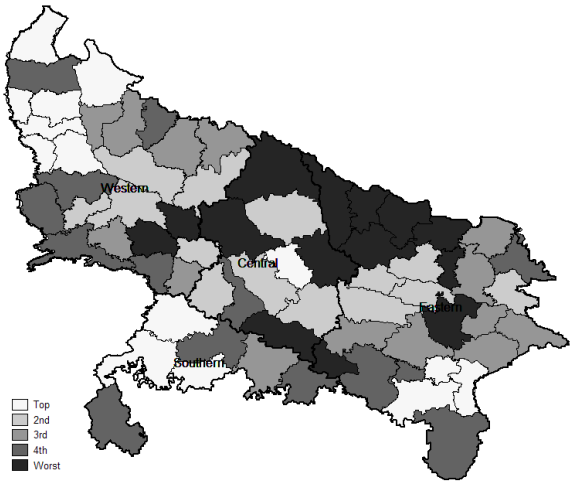
6.19 It is possible to create a simple average "overall" performance by district by using the following indicators, namely percent of fully immunized children, the prevalence of treatment of ARI, use of modern contraception, use of antenatal care, extent of tetanus toxoid vaccination among pregnant women and the extent of facility delivery. The next step is to rank the districts by coverage level and then average them. According to this method, Lucknow (Central region), Jhansi (Southern

[47] This section is based on RCH-II data for 2004.

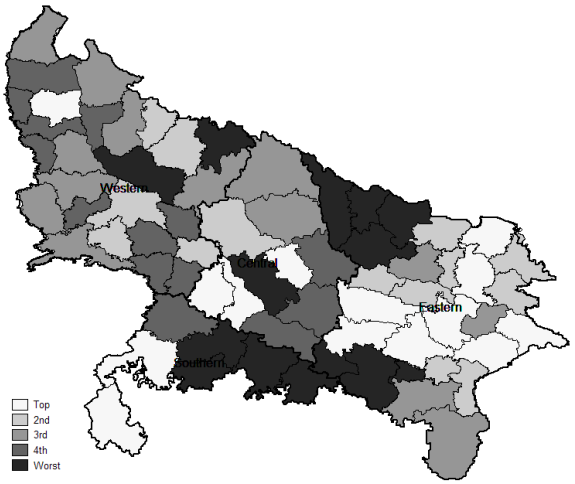
region), and Gautam Buddha Nagar (Western region) lead the rankings. Ballia (eastern), Kanpur Nagar (central), Chandauli (eastern), Ghaziabad (western), and Gorakhpur (Eastern) are also in the top. At the other end, Kaushambi (Eastern), Budaun (Western), and Balrampur (Eastern) are the worst performers. Banda (Southern), Etah, Chitrakoot, Kannauj, and Shrawasti are also poor performers.

Figure 6.3: Distribution of health service outcomes by district in Uttar Pradesh (based on 2004 RCH-II, ranking by average value, quintiles of districts)

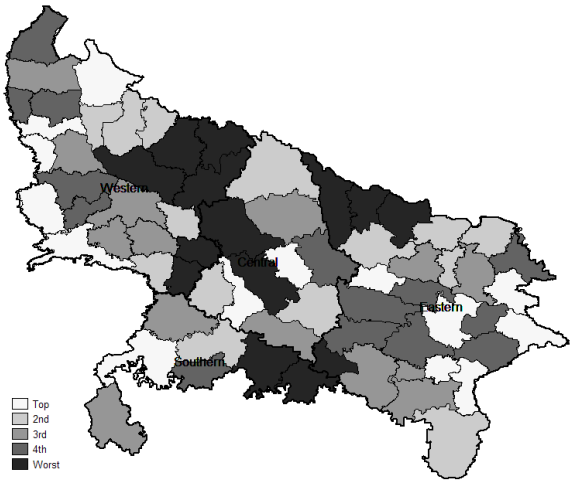
USE OF MODERN CONTRACEPTION



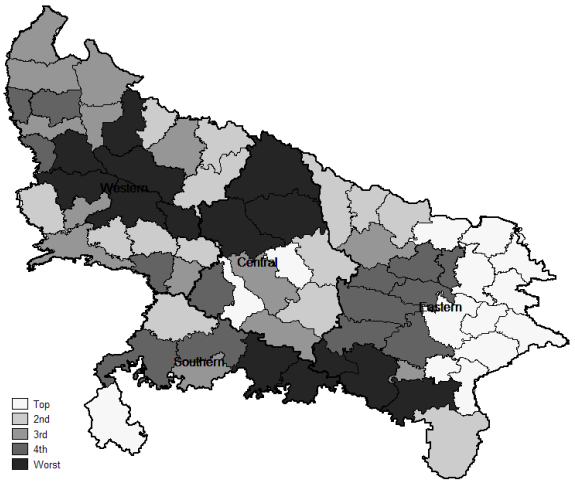
USE OF ANTE-NATAL CARE



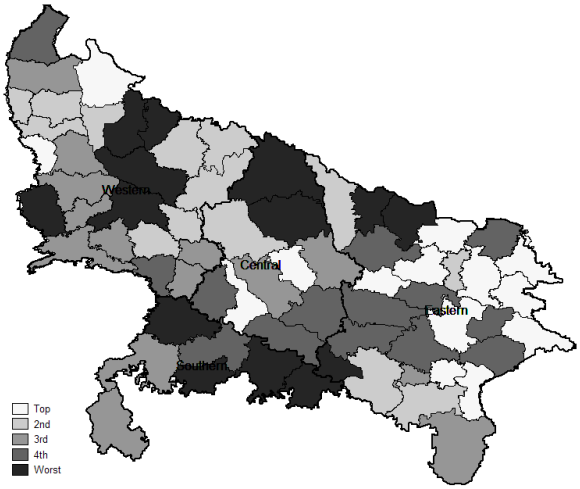
FACILITY DELIVERIES



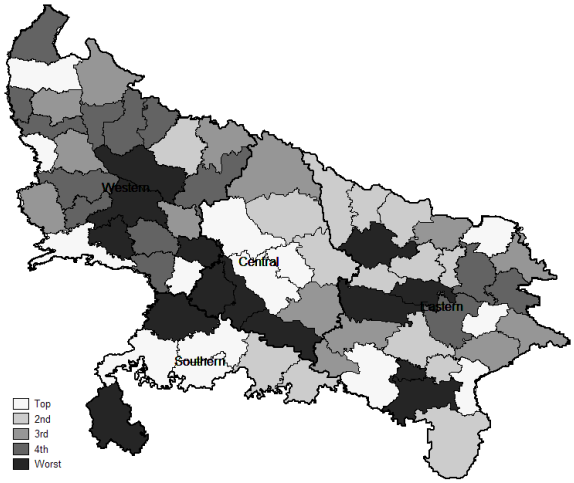
TETANUS TOXOID VACCINATION (1+)



FULLY IMMUNIZED CHILDREN



MEDICAL TREATMENT OF ACUTE RESPIRATORY INFECTION



6.4 Determinants of health service indicators

6.20 **Both supply and demand side characteristics affect utilization of health care.** Improvements in health outcomes in Uttar Pradesh can be affected by supply and demand. Certainly accessibility and the quality of health services are critical. Demand is equally important. Increasing utilization of health services must include an increase in demand. This is especially relevant for preventive services and peri-natal services including delivery. A large number of women do not seek ante-natal care or deliver in a facility or have a health worker attend the birth because they feel these steps are unnecessary. When people are sick, some of them either don't get treated or don't utilize the public sector because they have little faith in the care or are not satisfied with the treatment.

6.21 **On the demand side, the strongest predictors of child health service indicators (vaccination, treatment of ARI, vitamin A supplementation) are an increase in the standard of living and the literacy of the mother.** The correlates of health service utilization in a regression framework show that as the standard of living goes up, so does the use of services (table 6.8). There are some exceptions. Those with a higher standard of living are more likely to discard the first breast milk. Medical treatment of pneumonia is not correlated with the patient's standard of living. Muslims tend to use the following service indicators: modern contraception, antenatal care, tetanus toxoid vaccination, facility deliveries, trained birth attendants, vaccinations, and vitamin A supplementation – except for medical treatment of diarrhea. Also, discarding the first breast milk and medical treatment of pneumonia do not seem to be influenced by religion. Literacy significantly and positively affects the use of services and lowers the practice of discarding the first breast milk.

6.22 Living in the southern region predicts lower immunization probability when compared with other regions. Treatment of diarrhea is positively affected by a higher standard of living, belonging to a religion other than Muslim and older mothers. The latter two are the strongest predictors. Treatment of pneumonia, on the other hand, is primarily tied to where one lives—western or southern region and urban residence. The woman's literacy has a greater impact than her husband's for nearly every indicator except contraceptive use. For this reason it is important to educate men as well as women about the benefits of contraception. A large number of women report "other" reasons for not using contraception (48 percent). That makes it difficult to draw real conclusions as to why contraceptive use is so low in Uttar Pradesh. Most of the rest cite health reasons (13 percent), but a few women report that their husband is opposed to using contraception (6.8 percent). A smaller number reported a "lack of knowledge" for not using contraception (3.8 percent). Lack of awareness can be remedied with better education campaigns.

6.23 Self-reported demand-side indicators confirm that many people choose not to go to a public facility because of the high cost and their own financial constraints. In rural areas, the second most common reason for not seeking treatment is the lack of a nearby facility. This is not a problem in urban areas of UP.

Table 6.7: Reasons for not seeking treatment in a public health facility in Uttar Pradesh (2004)

	Urban	Rural	Total
No facility	-	21.7	19.1
Lack of confidence	0.9	5.5	4.9
Long wait	3.8	0.8	1.2
Financial reasons	31.2	31.1	31.1
Not serious	51.6	31.7	34.0
Other	12.6	9.3	9.7

Source: NSS 60th round

Table 6.8: The determinants of health care utilization, logistic regression results, based on RCH-II in Uttar Pradesh

	Modern Use	TT2	ANC	3+ ANC	Facility delivery	TBA	Squeezed breast milk	Treated diarrhea	Treated ARI	Aware of HIV/AIDS
	A	B	C	D	E	F	G	H	I	J
Region (Western)										
Central	-0.224***	0.137 **	0.439***	0.295***	0.080	0.330**	0.192**	0.108	-0.562***	0.177***
Eastern	-0.021	0.725***	0.094*	0.168***	0.257***	0.847***	-0.781***	-0.087	-0.522***	0.599***
Southern	0.661***	0.017	-0.174**	-0.170*	-0.057	0.678***	0.437***	-0.455*	0.106	-0.151*
Residence										
Urban	0.244***	0.330***	0.414***	0.434***	0.613***	0.774***	0.094	0.214	0.430**	0.773***
Religion (Hindu)										
Muslim	-0.547***	-0.294***	-0.326***	-0.105*	-0.293***	-0.351***	-0.084	0.444**	0.117	0.215***
Other	0.321**	0.575	0.624	0.925***	0.592**	0.227	-0.083	1.706		0.812***
Standard of Living Index (Low)										
Medium	0.342***	0.418***	0.361***	0.354***	0.480***	0.458***	-0.119**	0.459**	-0.154	0.866***
High	0.657***	1.138***	1.048***	1.047***	1.443***	0.864***	-0.454***	1.000***	0.298	1.765***
Literacy										
Woman literate	0.295***	0.755***	0.731***	0.609***	0.704***	0.673***	-0.134***	-0.167	-0.057	1.614***
Husband Literate	0.305***	0.440***	0.362***	0.367***	0.329***	0.164**	-0.075*	0.080	0.039	0.371***
Social Group (scheduled caste/tribe)										
OBC	0.179***	0.050	-0.064	-0.061	0.201***	0.084	0.170***	-0.315*	0.259	-0.058
Other	0.263***	0.222***	0.062	0.165***	0.484***	0.271***	0.043	-0.345	0.195	0.387***
Woman's age (15-19)										
20-29	1.494***	-0.054	-0.189***	-0.069	-0.148**	-0.099	-0.250***	-0.735***	-0.049	0.359***
30-39	2.417***	-0.292***	-0.411***	-0.195***	-0.273***	-0.295***	-0.288***	-0.905***	-0.272	0.154***
40-44	2.177***	-0.605***	-0.702***	-0.376***	-0.094	-0.756***	-0.428***	-0.491	-0.231	-0.037
Constant	-2.998***	-0.547***	-0.247***	-2.083***	-2.564***	-3.592***	1.565***	3.045***	2.370***	-3.213***
N (number of observations	56616	56616	30914	30984	30983	30994	24401	29829	4268	3239

Note: Omitted group is in parentheses; Significant at *** p < 0.01, ** p < 0.05, * p < 0.10 level

Note2: Panel A- modern use of contraceptives; panel B- two or more tetanus toxoid vaccination received by pregnant women; panel C-1 o to 3 visits to antenatal care provider; panel D-more than 3 visits to antenatal care provider; panel E-delivery in a facility; panel F-; panel G-squeezed breast milk given to an infant; panel H-a child with diarrhea had received medical treatment; panel I-a child with acute respiratory infection received medical treatment; panel J- a respondent hear or knows about HIV/AIDS;

6.24 In general, supply-side determinants of health and health service indicators are related to the quality of care offered by the provider, the facility, the services themselves and the availability of medication. In UP, many primary health centers (PHC) and sub-centers lack basic supplies. Vacancies and absenteeism are a significant problem, especially in rural areas (see more on this next section below). According to RCH-II, 17 percent of PHCs have adequate infrastructure, 53 percent have adequate staff, 20 percent have adequate supplies, 29 percent have adequate equipment, 12 percent have adequate training and 22 percent have an essential obstetric care kit. "Adequate" is defined as having at least 60 percent of the required inputs (table 6.8). Furthermore, MOHFW reports that only four percent of PHCs have a telephone. Among sub-centers, 59 percent lack their own water supply, 75 percent lack electricity and 56 percent lack an all-weather motorable approach.

6.25 Vacancies are still a problem. A large number of CHCs and PHCs operate without an adequate number of doctors or other medical staff. In the public sector, qualified human resources are insufficient and poorly distributed. Absenteeism is quite high, particularly in remote and poor areas. Even when they have an official position, doctors and ANMs are frequently absent from their posts. The World Development Report 2004 reported absenteeism rates in primary care

centers were equal to 42 percent, about the same as the national average[48]. Absenteeism is higher for doctors (46.2 percent) than other workers (41.8 percent) (Radwan 2005).

Table 6.9: Percentage of PHCs adequately equipped in Uttar Pradesh

	Uttar Pradesh	India
Infrastructure[A]	17.2	31.8
Staff[B]	52.8	43.6
Supply[A]	19.5	39.9
Equipment[A]	28.6	41.4
Training[A]	12.4	19.9
EO Care Kit[C]	22.06	32.2

Note: [A]Having at least 60 percent of critical inputs. [B]Having at least 60 percent of staff . [C]Essential Obstetric Care Kit.
Source: RCH-II Facility Survey 2002-2003

6.26 As a result of all these weaknesses, public primary health care (subcentres, PHCs, and CHCs) is underutilized. It leaves individuals in rural areas with no services, or compels them to seek care from private providers who are frequently unqualified, or refer themselves directly to higher level facilities in urban areas when their condition is severe and they can afford to pay. CHCs have extremely low occupancy rates, some approaching zero. All but the most successful hospitals have low occupancy rates (see below).

6.5 Health service providers

6.27 Health care in Uttar Pradesh occurs in the public and the private sector. According to the latest available data, the public health care system consists of about 20,521 sub-centers (SCs), 3,660 Primary Health Centers (PHCs), 386 Community Health Centers (CHCs) (MOHFW 2006), 53 district hospitals and 13 combined hospitals (UP Department of Planning 2005). There are 2,200 state-supported Ayurvedic dispensaries and 1,342 homeopathic dispensaries. There are also a number of Indian System of Medicine (ISM) hospitals and dispensaries: 1,768 Ayurvedic hospitals and 340 dispensaries, 204 Unani hospitals and 49 dispensaries, and one homeopathic hospital and 1482 dispensaries. (ISM practitioners are called AYUSH practitioners.[49]**)** The public sector delivers both inpatient and outpatient services for curative and preventive care as well as reproductive health care.

6.28 Private institutions serve many of the same functions. An estimated 34,985 private health establishments render health care in UP. Just over 60 percent of them are located in urban areas (NSS 57th round). Approximately 4,913 are private district-level hospitals/nursing homes (UP Department of Planning 2005). In total, there were about 266,222 registered providers in private practice with no employees and some with at least one regular employee, including hospitals and dispensaries). Of these, 214,127 were allopathic, 27,042 ayurvedic, 5,192 unani, and 19,861 homeopathic (NSS 57th round). There are many practitioners of traditional medicine and not-fully qualified providers administering allopathic treatment, including rural medical practitioners and drug sellers, as well as many traditional birth attendants.

[48] Absenteeism is measured as the percentage of staff that are supposed to be present but are not on the day of an unannounced visit. It includes staff whose absence is "excused" and "not excused." (WDR, 2004, p. 24).
[49] AYUSH stands for the Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), which is a department of ISM in the Ministry of Health & Family Welfare. A significant number of AYUSH practitioners are located in rural areas. 93% of state-supported homeopathic dispensaries are located in rural areas.

6.29 The vast majority of health expenditures in UP are from out-of-pocket payments. Based on 2001-02 National Health Accounts (NHA) estimates, public health expenditures were Rs. 14.1 billion (Rs. 84 per capita). At Rs. 174 billion (Rs. 1,040 per capita) private expenditures far exceeded that. Public expenditure is only about 7.5 percent of total health expenditures. [50]Use of private sector health services is extremely high in UP; that includes rural areas (see below).

Table 6.10: Per capita spending on health in Uttar Pradesh 2001-2002

	Per capita expenditure (Rs)
Central	28
State	56
Out of Pocket	1,040

Source: National Health Accounts

6.30 Survey-based estimates of private health expenditures are slightly lower than NHA estimates. According to the NSS 60th round, households spent approximately Rs. 823 per capita for outpatient and inpatient treatment. These figures do not include preventive care such as family planning, which may explain why the NHA figures are higher.

6.31 **Private sector providers dominate outpatient and inpatient services**. About 60 percent of all inpatient and 80 percent of all outpatient visits in UP are with private providers. The Western region has the highest share of private care for inpatient and outpatient treatment; the Southern has the lowest (table 6.11). Rural areas have a higher share of private visits compared with urban areas in inpatient visits. Outpatient visits are about the same in urban and rural areas. There is no difference in the rate of utilization of public and private providers based on literacy, but the SC/ST population is less likely to use private providers for inpatient visits. Use of the private health sector is strongly related to wealth for inpatient and outpatient visits. Wealthier households are more likely to use private services. The poor favor public facilities over private facilities more than the rich. Based on the higher number of inpatient stays among the wealthy, hospitals are still primarily used by the rich. The cost of hospitalization is high, even in public hospitals, which discourages the poor from using them.[51]

[50]Additional private sources of financing are user-fees in secondary and tertiary public health care facilities. User fees in public institutions are minimal, under 5 Rupees. There are, however, additional charges for other services such as lab tests, diagnostics, procedures, and rooms. No information is available on informal charges. Social insurance and community financing are negligible. Social insurance accounts for 2.36 percent of the total health budget for the country. Although no information on health insurance in Uttar Pradesh is available, presumably its share is even less. The Employee State Insurance Corporation covers 453,000 (just over one-quarter of one percent of the population) employees in 16,186 factories/establishments. It has a network of hospitals and dispensaries run by the Director, ESI Scheme, Government of Uttar Pradesh.

[51]Expenditures for public hospitals consume a lion's share of total public expenditures. For example, in 2004-2005, 55 percent of the actual expenditures under "Medical and Public Health," went to "urban health services," primarily hospitals. In fact, 48 percent of the expenditures under Medical and Public Health went to hospitals. The outlays for 2006-2007 declined by 32 percent, but actual expenditures do not always match budgeted outlays. In this way, disproportionate funding of hospitals exacerbates the differences in health care between the rich and the poor. Additionally, because most public hospitals are located in urban areas, they are less accessible to the rural poor.

Table 6.11: Utilization shares of public and private sectors by residence and socio-economic status, in Uttar Pradesh - 2004

		Inpatient Visits (last year)		Outpatient Visits (last 15 days)		
		per 1000 population	Private Share	per 1000 population	Share Treated	Private Share*
Region	Western	17.1	80.7	137.6	87.4	91.3
	Central	16.2	67.9	119.8	69.3	84.6
	Eastern	12.4	68.5	65.9	75.8	88.4
	Southern	17.6	44.6	99.8	58.6	76.1
Residence	Rural	13.3	73.7	102.5	76.9	89.6
	Urban	22.1	68.2	111.6	88	87.1
Literacy	Illiterate	14.4	71.7	125.7	78	89.7
	Literate	15.9	72.3	81	81.5	87.6
Social Group	SC/ST	11.3	65.2	98.1	76.9	87.9
	OBC	14.2	74.6	97.2	79.3	90.7
	Other	21.2	72.5	125.8	81.3	86.8
Wealth Quintile	Poorest	7.3	63.7	76.8	70.5	84.7
	2nd	11.5	71.1	94.6	72.9	90.6
	3rd	13.2	67.3	111.4	78.3	90.3
	4th	16.2	72.8	119.5	79.7	91.3
	Wealthiest	28.3	76.7	145.1	87.5	87.4
All UP		15.1	72.2	104.4	79.3	88.9
All India		27.1	59.8	96.1	84.3	78.5

Source: NSS 60th Round

*Share public/private for ailments is a percentage of treated ailments

6.32 **Health care utilization is closely related to an increase in wealth.** The Western region is tied with the Southern region for the greatest number of inpatient visits and the highest number of outpatient visits. The Eastern region has the lowest rate of inpatient and outpatient visits. Hospitalization rates for the poorest quintile are one-quarter the rate of the wealthiest. Use of outpatient visits by the poorest is one-half that of the wealthiest. The poor are also less likely to be treated during outpatient visits. The Western region had the lowest level of non-treatment; the Southern region had the highest (table 6.11). Rural areas have fewer inpatient visits per 1000 population but about the same number of outpatient visits.

6.33 For major health concerns, people need to go to the nearest district hospital, which is usually several hours away from where they live. Only the better off can afford to travel. Still, a large percentage find or borrow the money to go to a private hospital. In urban areas where hospital-based services are more readily available, utilization rates are higher, but the trend is similarly skewed toward the private sector. On the other hand, perhaps due to the higher quality of care available in urban areas, a greater percentage of urban residents use the public sector for both inpatient and outpatient care than rural residents.

Table 6.12: Average cost of medical care (in Rs.) and the share of utilization (percent), Uttar Pradesh, 2004

		Hospitalizations			Outpatient Care		
		public	private	utilization of private sector	public	private	utilization of private sector
Residence	Rural	6519	9350	73.7	62	348	89.6
	Urban	4371	10600	68.1	95	326	87.1
Region	Western	6510	10900	80.7	32	313	91.3
	Central	5147	8338	67.9	79	514	84.6
	Eastern	6246	8742	68.4	136	289	88.4
	Southern	4068	9929	44.6	74	280	76.1
Wealth quintile	Poorest	4221	6891	62.7	57	244	85.8
	2nd	4558	7216	71.1	96	257	89
	3rd	4624	8785	68.7	25	247	88.6
	4th	8473	9254	76.6	81	501	92
	Wealthiest	7425	14000	77.2	97	463	88.9
All UP		5817	9700	72	67	342	88.9
All India		3076	7238	59.8	41	282	78.5

Note: Direct medical costs do not include indirect costs such as transportation, room and board during treatment.
Source: NSS 60th round survey (2004), author's calculations

6.34 The cost of health care utilization for both inpatient and outpatient visits is higher in private facilities than the public sector. The average cost of outpatient care in the public sector was Rs. 42 in rural areas and Rs. 48 in urban areas. The private sector was substantially more at Rs. 322 in rural areas and Rs. 308 in urban areas. The average cost of hospitalization in rural areas was Rs. 6,519 in the public sector and Rs. 4,371 in the private sector. In urban areas, private sector costs exceeded public sector costs (Rs. 10,600 and Rs. 9,350 respectively). The highest cost of outpatient visits among public facilities is in the Eastern region and the highest private outpatient costs are in the Central region. The Western region costs the most for hospitalization among public and private facilities. Medical expenditures increase with wealth.

Table 6.13: Change in the share of utilization of private facilities in Uttar Pradesh 1996 – 2004 (percent)

	Inpatient	Outpatient
UP Rural	35.1	-7.2
UP Urban	11.2	-6.6
All UP	28.2	-7.4
All India	6	-3.7

Source: 1996 NSS 52nd and 2004 60th rounds

6.35 There is evidence of an increase in use of the private sector for hospitalization and a decrease in the use of the private sector for outpatient care. These trends are present in India and in UP and tend to be more prevalent in rural areas.

6.36 **Local participation for improving health.** One reason the quality of services at public facilities is low is that there is little accountability. Doctors who perform poorly or do not show up at all are not sanctioned. Transfers and promotions are frequently not due to performance, but to connections. Getting local communities to expect doctors to be accountable may improve performance. Local governing bodies can monitor doctors' performance, find them when they don't come to work, and report poor performance to the appropriate authorities. But local participation must be tied to consequences of poor performance. Finding an appropriate sanction is key -- one that doesn't hurt the communities by leaving them with a bad doctor or worse, no doctor.

6.37 Decentralizing management of hospitals could bring greater local control and improve the ability of facilities to adapt to local needs. Accredited Social Health Activists (ASHA) are community members that have been selected and trained to provide reproductive health services and education and to connect communities with the public health sector. ASHA could improve

local participation by creating a closer relationship between the community and health care providers.

6.38 Some of these ideas appear in GoI's National Rural Health Mission (NRHM). NRHM funds are allocated to develop and train Accredited Social Health Activists (ASHA) as well as to educate, motivate, and communicate with the village and the Auxiliary Nurse Midwives (ANM). ASHAs will come from the community and form a link between community members and health providers, especially the ANM and perhaps the Anganwadi workers. Anganwadi workers also play an important role in the community. Anganwadi workers spend time in the community to help improve childhood nutrition through food supplements and monitoring of children's growth. Having members of the community fill these roles links the two and gives the workers an opportunity to gain standing in their community.

6.39 Community involvement can also improve knowledge. By becoming more involved in monitoring health providers, community members will learn about the importance of different health services as well as why quacks are dangerous. In monitoring local providers, community members may be more inclined to utilize their services and providers may be less inclined to charge informal fees.

6.6. Finding a way forward

6.40 Improving the health system of Uttar Pradesh is a big task. To make significant changes in overall health outcomes, the focus must be on services in rural areas. By ensuring that poor, remote, rural populations and other neglected groups have access to adequate services, the state will be able to achieve its policy goals for health and population. The elements of the strategy to reach these goals are below.

6.41 Reorient the public sector toward a results-based system. Assess the current status of MDG and other important health indicators by district or when possible by block. Use the information to set priorities.

- Create a system to collect and share information on a regular basis.
- Set targets and introduce regular monitoring of key health services and outcome indicators.
- Disaggregate targets at the district and facility levels so that poor performance can be identified and addressed. Don't accept reasons why certain facilities or districts aren't performing; demand answers as to how they can improve.
- Monitor the targets for the poor and underserved populations separately.
- Increase the use of computers to collect and report data at all levels.
- Expand the availability of telecommunication. Use it to improve communication between lower level health facilities and higher level health facilities for diagnostic purposes, reporting/monitoring, and notification in emergencies or other medical needs.
- Reward good performance. Reward well-performing districts and facilities with less oversight and more autonomy. Offer poor-performing districts management support and oversight.
- Allocate resources (financial and human) based on need instead of norms.

6.42 Create a human resources strategy.

- Determine what human resources are required to achieve priority outcomes and progress toward the MDG
- Create a strategy to fill required positions, such as:

  - Think creatively— by partnering with the non-public sector, for example—to fill in the gaps in health staffing.
  - Enforce the transfer policy of doctors and make it transparent.
  - Scale up allopathic training of AYUSH and less-than-fully-qualified practitioners to create a cadre of health professionals who are less qualified than MBBS doctors and who might be more willing to serve in rural areas.
  - Use other qualified personnel for lower-level health tasks (ASHA, less-than-fully-qualified practitioners).
  - Partner with the private sector to increase opportunities to obtain a medical degree. Offer a scholarship, usable in private institutions, to students who commit to working in the public sector for a specified period of time after they graduate.
  - Create a specialty in Rural Health that trains doctors in skills that are necessary in remote areas and which affords those doctors "specialist" status.
  - Create a specialty in Public Health for strategy development, planning, management, and leadership; make training a requirement for certain posts (i.e., state-level directorate program managers).
  - Tap non-MBBS personnel to fill program management positions so that doctors can focus on their clinical duties.
- Implement an accountability mechanism involving local communities (Panchayat Raj Institutions)

6.43 Increase health sector spending and target the poor

- Perform a needs and feasibility assessment to determine where additional investment in infrastructure and human resources would be most useful.
  - Identify and map where facilities, roads and settlements/likely users are located and determine where services are lacking.
  - Determine whether upgrading or expansion is feasible and whether filling vacancies is possible.
- Work with the finance department to ensure continued funding for key health priorities.
- Allocate funding disproportionately in favor of rural areas.

Instead of relying on transportation and communication sectors, consider allocating a portion of the funds to improve roads and telecommunication. These changes will directly affect access to health services in remote areas.

6.44 Account for and utilize the private sector in strategic planning

- Include details in the private health provider registration system, such as their qualifications and the services they offer. Collect this data to ensure all providers are registered.
- Collect information on where private facilities/providers are located. Include these locations in the map of service providers previously mentioned.
- Take the private sector into account when assessing the need for services and equipment.
- Begin discussions with representatives of the private sector to determine which services they could provide for public sector patients. Focus on those services whose start up are costly or requires a significant capital investment, but will serve a small number of patients or that are currently under-utilized in the private sector (e.g. MRI, radiation therapy).

- Investigate the possibility of scaling up the use of NGOs to reach more remote areas. Allow for the possibility that NGOs may need technical assistance in gaining the capacity to provide health services and in learning good management, accounting, and record-keeping skills.

6.45 Work with other departments to address inter-sectoral problems affecting population health such as:

- Malnutrition of children and women
- Pollution and sanitation
- Safe drinking water
- Transportation: increasing road access in remote areas and increasing road safety
- Access to telecommunications

CHAPTER 7: PERFORMANCE OF SOCIAL SAFETY NET PROGRAMS [52]

7.1 Introduction

7.1 The Government of India has a long history of implementing a variety of anti-poverty programs to improve the welfare of poor people through redistribution or risk mitigation. Many of the programs are the responsibility of both the Central government and the State government, but funding (generally around three-fourths) is largely from the Center. This chapter analyzes a number of anti-poverty programs for targeting effectiveness and improvement of household welfare. The criteria for program selection are based on the importance of the program in the government budget and on whether household level data were available to evaluate performance.[53] The results contained herein follow a four-way categorization of social assistance programs suggested by Holzmann and Jørgensen (2000), (box 7.1). [54]

Box 7.1: Typology of social assistance programs in Uttar Pradesh

I) Policies and programs which seek to minimize ex ante the risks that households and groups face and their exposure to shocks. These are not covered in this report because of data constraints.

II) Programs meant to help households mitigate risks by facilitating income smoothing during an episode of unemployment, in response to a medical catastrophe or across the life cycle. Programs active in UP that broadly fit this category include Jawahar Gram Samridhi Yojana (JGSY) and Sampoorna Grameen Rozgar Yojana (SGRY), which are covered in this report. Such programs as health insurance, welfare funds, and NGO local micro-insurance schemes also fall into this category, but are not covered in this report because coverage is scant and because of data constraints.

III Programs which promote movement out of poverty, e.g., through investment in human capital formation or efforts to promote sustainable livelihoods above the subsistence level. Programs that broadly fit this category and are active in UP include school scholarships, mid-day meals, Integrated Child Development Services (ICDS). Swarnajayanti Gram Swarozgar Yojana (SGSY) also falls into this category but is not analyzed in this report because of data constraints.

IV) Programs which provide direct support to the chronically poor but without an objective of lifting households out of poverty. These programs have an additional objective of mitigating the severity of current poverty in a way that will not perpetuate poverty in the long run (such as withdrawal of children from school or providing inadequate nutrition to infants). Programs that broadly fit this category include the Targeted Public Distribution System (TPDS), National Old Age Pension (NOAP), disability pensions, widows' pension, and maternal benefits.

7.2 Programs to mitigate risks by facilitating income smoothing

7.2 Programs designed to mitigate risks faced by households in need of income smoothing include those that address events such as lean season unemployment, health shocks, life-cycle events. UP has implemented public works programs with the broad objective of providing employment and improving community infrastructure in rural areas. Until recently, the largest such programs were the Jawahar Gram Samridhi Yojana (JGSY) and Sampoorna Grameen Rozgar Yojana (SGRY).[55] In September 2005, the National Rural Employment Guarantee Act (NREG) became law. The act essentially guarantees at least 100 days of paid work per year to every volunteer. NREG initially focused on the poorest 200 districts in India, many of them located in UP. It will eventually expand to all districts in the country. So far, the introduction of the NREG in UP has been quite gradual; as of now, not all districts are covered.

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[52] This chapter heavily draws on Ajwad (2007).

[53] The primary sources for these analyses are PSMS-I and II data for 1999-2000 and 2002-03 as well as the 61st round of the National Sample Survey (NSS).

[54] See Holzmann and Jørgensen (2000). The pillars of SRM can also be compared to terminology widely used in India. The most commonly used concepts are the "promotional" and "protective" effect on livelihood; they stem from Dreze and Sen (1989). Guhan (1994) adds a third concept, "preventative." While often blurred in practice, these terms have distinct features: "promotional" measures aim to improve incomes, both in the short to medium term (through livelihood interventions) and in the long run (through human capital interventions); "preventative" measures seek to avert deprivation prospectively; and "protective" measures provide relief against deprivation *ex post* to the extent that the other two sets of measures fail to do so.

[55] Here we combine these two public works programs and refer to them as SGRY.

7.3 **The SGRY and NREG are self-targeted, with preference given to women, SC/STs and the disabled.** SGRY wages are paid in cash and with grain. The cash component is shared between the center and the state in the ratio of 75:25; the food component is borne entirely by the center. The wage rate must be at least the state's minimum wage and with no gender disparity in wages.

7.4 **A very small proportion of households in Uttar Pradesh has access to and avails themselves of public works programs**. In 2005, 1.4 percent of rural households in UP had at least one member engaged in public works for 60 or more days in the prior year. In 2003 and 2000, the proportion of households with a public works participant (not necessarily with at least 60 days) was 1.6 percent and 1.3 percent of all rural households, respectively.

7.5 **Public works coverage is higher in the Central and Eastern region for SC/STs and OBCs, for poorer households, and for men**. Among all rural households in 2005, 2 percent and 1.6 percent of those in the Central and Eastern regions benefited from public works schemes; in comparison, only 0.7 of all households in the Western region received these benefits. In 2005, SC/STs and OBCs, who represent 75 percent of all households in UP, made up more than 95 percent of all public works beneficiaries. This state of affairs may reflect the emphasis that public works programs place on targeting the SC/ST population. Thus, 2.7 percent of SC/ST households have at least one beneficiary. Across other backward castes and across non-backward castes, 1 percent and 0.2 percent of households have at least one public works beneficiary, respectively. About 1.8 percent of households in the poorest quintile have at least one beneficiary of public works; in the richest quintile, one percent of households have at least one beneficiary. Although one-third of employment opportunities go to women, the number of women benefiting from this program is negligible.

Table 7.1: Uttar Pradesh, Households engaged in public works in the 12 months preceding the survey (percent)

		among all households			among BPL card holders	
		1999-2000	2002-03	2005	1999-2000	2002-03
Western	ST/SC	0.8	1.7	1.7	2.5	2.7
	OBC	0.3	0.6	0.3	0.8	0.0
	Other	0	0.1	0.7	0.0	0.0
	TotalWestern	0.3	0.7	0.7	1.2	1.1
Central	ST/SC	2.7	3.5	3.2	2.7	7.7
	OBC	1.1	1.6	0.7	0.4	2.5
	Other	0.5	0.7	3.4	0.0	2.2
	Total Central	1.5	2.1	2	1.4	4.9
Eastern	ST/SC	1.3	4.2	3.4	2.1	5.8
	OBC	0.4	1.8	1.3	1.2	3.2
	Other	0.3	0.3	0	0.0	1.0
	Total Eastern	0.7	2.2	1.6	1.6	4.1
Southern	ST/SC	0.9	1.1	3.5	1.7	2.0
	OBC	2	1.1	0.5	2.8	3.7
	Other	0	0	0	0	0
	Total Southern	1.3	0.9	1.2	1.8	2.6
Quintiles	Poorest quintile	1.7	2.4	1.8	1.8	3.2
	Q 2	1	1.6	1.4	1.3	3.9
	Q 3	1.5	1.4	1.2	4.6	3.5
	Q 4	1.3	1.8	1.4	1.8	4.9
	Richest quintile	1	0.9	1	3.2	2.9
Total rural UP		1.3	1.6	1.4	2.3	3.7

7.6 In 2005, households availed themselves of one-tenth of the total number of days of employment they are eligible for under the program. These numbers represent an increase.[56] The SGRY scheme was intended to offer a maximum of 100 days of work to a maximum of two members per household. Among households with at least one public works beneficiary, the median number of days of work was eight days for males. The range was four days in the Western region and as many as 15 days in the Southern region.

7.7 In 2003, 85 percent of respondents reported that the wages they received for participating in public works programs were lower than the stipulated Rs. 60 per day. The median for the sample of public works beneficiaries was Rs. 40.[57]

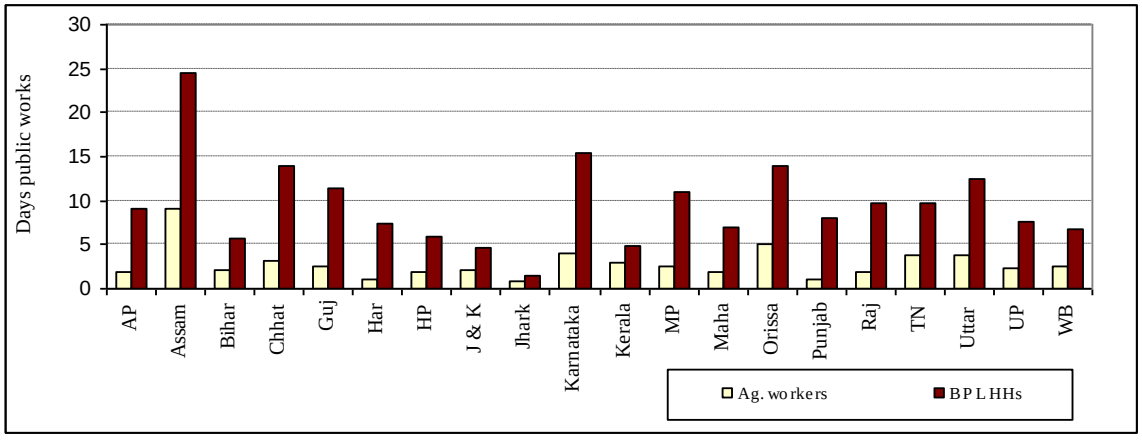
7.8 **Administrative data and NSS household data reveal a significant disparity in public works utilization rates**. Administrative data suggest that 31.3 million man-days of work were generated in 2001-02[58]. The 2002-03 data suggest that less than three million man-days were generated. Although the data sources are from two different years, the disparity is quite large. Low participation in public works within UP is consistent with the findings of other Indian states. UP spends little of its central allocations for public works. For instance, UP used 44 percent of the funds GoI allocated for public works employment and less than 20 percent of its allocation for food grain. The latter was one of the lowest among the Indian states.

Box 7.2: The surveys indicate possible explanations for the low coverage by public works programs

Planning Commission (2002a) suggests that it is possible that the discrepancy is due to the fictitious muster rolls created at the local level to justify receipt of Central and State funds for SGRY projects. If that is the case, there are several possible explanations, but more evidence is needed to reach a conclusion. These reasons could include padding muster rolls with names to ensure that the labor-capital ratio is maintained* or to ensure that targeted groups (SC/STs, women, disabled) appear to be represented. There may also be other local factors. Past studies suggest that corruption is not confined to a particular level of government. Rather it is embedded in several areas so that funds from illegal activities end up in the hands of government representatives, contractors, and politicians.

*For instance, Deshingkar, P. and Johnson, C. and Farrington, J. 2005. (2005) documented irregularities in the implementation of public works programs in six villages of Andhra Pradesh. One finding was that labor-displacing machinery (Poclaines, earth-displacing machinery) was used and the owner received a rental fee for it.

Figure 7.1: SGRY workdays per agricultural worker and per BPL cardholder by state, 2003-04



Source: O'Keefe (2005)

[56] In 2005, households had to be employed in public works for at least 60 days to be considered a beneficiary.
[57] Part of the payment to workers can be in the form of grain. NSS data for UP preclude an analysis of this variable because of the scant number of observations.
[58] Ministry of Rural Development (2003).

7.3 Programs to promote movement out of poverty

7.9 The school scholarship, mid-day meals and Integrated Child Development Services (ICDS) programs promote the movement of households out of poverty by augmenting investment in human capital.

School Scholarship Program

7.10 **The purpose of the school scholarship program is to boost enrollment, attendance and school retention**. When the program was initiated, the intended beneficiaries were all SC/ST children, plus up to three OBC children at each school who were below the poverty line. Since mid-2004 the program was broadened to include all OBCs.[59] Student beneficiaries are eligible to receive Rs. 300 per year if they maintain an attendance rate of 80 percent. About five percent of pupils in private school were also scholarship recipients.

7.11 More than one-quarter (27 percent) of all children received a scholarship to attend school. This program reached a higher proportion of poor and SC/ST households. In rural areas, for example, 37 percent of pupils from the poorest quintile received a scholarship, while only 18 percent of pupils from the richest households did so. Similarly, more than 60 percent of all SC/STs currently attending government schools receive a scholarship. In comparison, 13.1 percent of other backward castes and fewer than 10 percent of non-backward castes received scholarships. There is no apparent inequity between boys and girls -- 27.2 percent of boys and 27.4 percent of girls received scholarships in rural areas.

Table 7.2: Proportion of children who received a scholarship 12 months prior to the survey in Uttar Pradesh

		rural			urban		
		male	female	all	male	female	all
Western	ST/SC	63.2	59	61.3	29.4	42.6	36.0
	OBC	14.3	9.8	12.2	22.5	15.6	19.1
	Other	10.7	15.1	12.7	6.8	7.3	7.1
	Total Western	28.0	24.3	26.3	19.1	16.9	18.0
Central	ST/SC	60.2	68.3	63.8	44.5	12.2	27.9
	OBC	17.5	18.2	17.9	18.4	13.4	16.3
	Other	14.0	10.8	12.2	7.9	5.0	6.3
	Total Central	35.8	37.4	36.4	18.9	9.6	14.3
Eastern	ST/SC	54.4	65.9	59.6	16.1	38.6	27.4
	OBC	9.7	10.8	10.2	9.0	14.3	11.4
	Other	7.0	8.3	7.6	2.8	11.8	6.9
	Total Eastern	23.7	28.5	25.9	7.5	16.7	11.7
Southern	ST/SC	77.6	79.5	78.2	55.5	38	47.2
	OBC	19.1	24.3	21.5	24.9	5.5	13.2
	Other	9.0	1.8	4.7	18.3	13.8	15.9
	Total Southern	42.4	32.7	38.1	26.1	13.9	19.2
Wealth group	Poorest quintile	34.6	39.7	37.1	16.6	32.4	24.6
	Q 2	33	27.7	30.7	16.0	14.8	15.5
	Q 3	26.5	28.9	27.5	29.4	16.3	23.2
	Q 4	25.0	24.5	24.8	8.4	3.5	5.9
	Richest quintile	19.1	17.2	18.2	6.9	5.1	5.9
	Total	28.5	29.1	28.7	16.2	15.4	15.8

[59] The rest of this section is based on 2005 NSS. Hence, at the time, the grain was intended for SC/STs and a small number of OBC.

7.12 There is considerable geographic variation in the proportion of scholarship recipients. Rural households and those in the central and Southern regions benefited the most. Considering that all SC/STs are entitled to scholarships, there needs to be significant improvement in coverage if the remaining 40 percent of enrolled SC/STs, who represent approximately two million pupils, are to benefit from this program. Inclusion errors are also a problem. Almost 10 percent of pupils from non-backward castes, around 0.4 million, received the stipend.[60]

7.13 Although most households received the official program allocation of Rs. 300 per child, the transfer has had just a small impact on household welfare. Among households at the 20th percentile, the monthly scholarship represented approximately 1.34 percent of that household's total per capita expenditure. The best measure may be the child's school attendance.

7.14 After holding other factors constant, the following are significant determinants of school scholarships in UP (Probit Model). (i) Caste – The targeted groups, namely SC/STs and OBCs, are 56 percent and 6 percent more likely to receive a scholarship than pupils from non-backward castes. (ii) Geography – Residents of the Eastern and Western regions of UP are 19 percent and 14 percent less likely to receive a scholarship than pupils in the Southern region. (iii) Gender – Statistically, girls are less likely to receive school scholarships, but the magnitude of the impact is very small (2 percent). (iv) Household welfare – The probability of participation declines as household welfare increases. When a discrete variable is used to capture the wealth of households, the program appears progressive. That is, poorer households (those in quintiles 1, 2 and 3) are significantly more likely to receive a scholarship than the richest household quintiles. For example, households in quintile 1 are seven percent more likely to receive a scholarship than those in quintile 5. (v) Parental education – Children whose head of household has more than six years of education are more likely to receive a scholarship than households where the head has less education than that. (vi) Household size matters – larger households are less likely to receive a scholarship than smaller households, but the magnitude of the impact is small. (vii) Religion matters – Muslims are 32 percent more likely to receive a scholarship than Hindu pupils.

Mid-day meals

7.15 In 1995, the Central government instituted a program, "National Programme for Nutrition Support to Primary Education," to provide cooked food to children in classes 1-5 in government primary schools, primary schools aided by the government and primary schools run by local bodies. The rationale was that school meals advance elementary education and children's nutrition. In late 2001, the Supreme Court of India directed all State governments to introduce cooked mid-day meals in primary schools instead of dry rations. The program is being implemented as a centrally sponsored scheme (CSS) through the Department of Education and Panchayats and Nagarpalikas. Central assistance for this program covers free grains and a transportation subsidy for shipping the grains to schools. Several studies have shown that the mid-day meals program has had a positive impact on increasing enrollment, especially among girls (Druze and Goal 2003, Khera 2002).

7.16 UP's program began by distributing grain rations to children who attended school; more recently, the program has changed to cooked food. PSMS-I and II collected data to establish the demographics of children who received this aid, namely grains and cooked food in 2000 and 2003, respectively. In 2005, Schedule 1 of 61st NSS sample collected data at the household level on participation in the mid-day meals program, but it did not allow for a direct comparison over

[60] The NSS does not allow the computation of inclusion/exclusion errors among pupils from Other Backward Castes.

time. The following section presents information from PSMS-I and II and NSS 61 without making a strong direct comparison of the changes that occurred between 2003 and 2005.

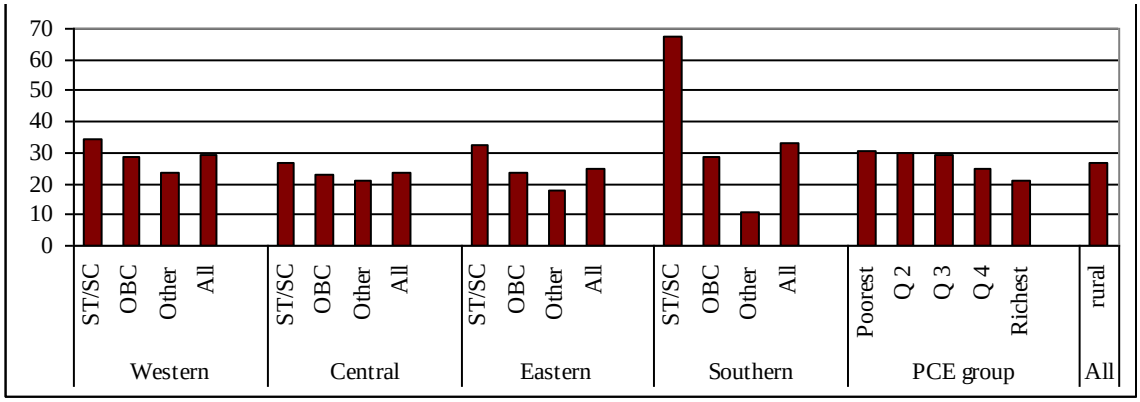
Table 7.3: Schools in which the children who attended received a mid-day meal or grain ration, by age group and gender in Uttar Pradesh, in percent, 2003

	boys			girls		
	6-10	11-13	14-15	6-10	11-13	14-15
Rural						
Western	59	36	15	47	39	15
Central	68	39	19	70	45	26
Eastern	59	28	9	52	36	19
Southern	74	40	5	77	35	5
Poorest quintile	59	41	21	58	46	30
Q 2	62	33	14	47	40	16
Q 3	57	36	14	57	43	22
Q 4	64	30	10	60	32	16
Richest quintile	67	25	4	54	29	8
Total rural	61	34	12	55	39	18
Urban						
Western	30	6	2	34	8	4
Central	43	4	5	24	8	0
Eastern	33	6	0	32	20	5
Southern	21	0	0	6	5	0
Poorest quintile	38	8	5	37	17	1
Q 2	30	9	6	37	15	12
Q 3	31	5	0	25	2	3
Q 4	34	0	0	14	12	0
Richest quintile	12	6	0	0	0	0
Total urban	33	6	2	31	11	3
Total UP	59	31	11	53	35	14
Among all children:						
Rural	32	16	4	30	17	4
Urban	6	1	1	6	3	1
All UP	28	14	3	26	14	3

7.17 Between 2000 and 2003, the program expanded from covering less than one percent of the school population to benefiting more than 50 percent of 6-10 year olds and more than 30 percent of 11-13 year olds enrolled in school. For the most part, grain rations went to children in rural areas. 61 percent of 6-10 year old boys and 55 percent of girls who attended school received either wheat or rice. Among boys, participation in the program tends to decline with age; just the opposite is true of girls. In urban areas, 33 percent of 6-10 year old boys and 31 percent of girls received grains from school. The proportion of children in the younger age group who received wheat or rice varied from a high of 74 percent in the rural Southern region to a low of 21 percent in urban areas in the same region. Poorer households were only slightly more likely to receive grain than non-poor households.

7.18 **In 2005, the mid-day meal program covered 27 percent of all rural households with children aged six to ten.** The pattern was similar to the distribution of grain. The rural Southern region had the highest coverage, followed by the Western region. SC/ST groups were more likely to receive mid-day meals, especially in the Southern region. Like the grain ration program, poorer households were only slightly more likely to benefit from the mid-day meal program (figure 7.2).

Figure 7.2: India Uttar Pradesh, Receipt of Mid-day meals, 2005, percent



Integrated Child Development Services (ICDS)

7.19 **Access to ICDS centers or Anganwadi centers is low, especially in the Western region.** Among households with a child up to the age of six, 45 percent reported that no center was available; 18 percent reported that they were unsure if such a facility was available in the village/block. Rural households reported higher access rates than urban households. In rural and urban areas, 43 percent and 10 percent of households, respectively, reported that an Anganwadi center was available in the village or block. Across UP, the least access to Anganwadi centers was reported in the Western region (22 percent) and the highest in the Southern region (55 percent). Access is higher than average among SC/STs (43 percent) and OBCs (37 percent) relative to non-backward castes (31 percent), table 7.4.

Box 7.3: The Integrated Child Development Services (ICDS) in Uttar Pradesh

ICDS has been called the largest community-based outreach system for women and children in the world (Editorial, Indian Journal of Community Medicine, 2003). ICDS is UP's main nutrition program. The ICDS, managed by the Department of Women and Child Development, has the following goals: (i) to improve the nutritional and health status of pregnant women, nursing mothers, and children 0-6 years; (ii) to improve the psychological, physical and social development of children; (iii) to reduce the incidence of mortality, morbidity, malnutrition and school drop-outs; (iv) to promote child development by better departmental coordination; and (v) to improve the ability of mothers to address the health and nutritional needs of their children (World Bank, 2001).

ICDS operates through *Anganwadi centers*. A typical package offered by Anganwadi workers includes: supplementary nutrition, immunizations, health check-ups, referral services, treatment of minor illnesses, nutrition and health education for women, and pre-school education for children ages 3-6 (Kapil, 2002). At present there are 1,51,469 approved *anganwadi* centers in 897 development blocks of UP, out of which 1,51,393 *anganwadi* centers are functioning. Another 36,790 mini/new centers are planned in the near future.

Table 7.4: Access to Anganwadi centers in the village/block of residence (2002-03)

	Within village	Not within village	Do not know
Rural	43.1	41.3	15.5
Urban	9.8	60.7	29.5
SC/ST	42.6	40.7	16.4
OBC	37.2	44.6	18.2
Non-backward caste	30.7	49.7	19.6
Western	21.7	56	22.2
Central	54.2	38	7.6
Eastern	42	39	18.8
Southern	55.4	24.9	19.7
Total	36.9	44.9	18.1

7.20 Because of increases in the Eastern and Southern regions, attendance at Anganwadi centers went up considerably in rural areas between 2000 and 2003. And yet, only four out of 100 children age 0 to 6 attend the centers. In 2000, 2.1 percent of households with children six years of age and under reported attending Anganwadi centers. By 2003 attendance had increased to 4.4 percent. Much of the increase came from the Eastern and Southern regions where attendance increased several fold. Attendance among SC/STs was higher and increased faster than for other castes. There was little difference in the attendance rates of poor and non-poor households.

7.21 **Proximity and knowledge about the Anganwadi centers is a key determinant of regular attendance.** When attendance is based only on households that have a village center and the households there know about it[61], attendance in rural areas rises to 10 percent. This was particularly true of households in the Western region (table 7.5).

Table 7.5: Children between 0 and 6 years who attend Anganwadi centers regularly (percent among all households with children 0-6 years old)

		among all		among those who know about the service
		1999-00	2002-03	2002-03
Western	ST/SC	4.9	3.6	11.8
	OBC	1.6	2.2	8.2
	Other	3.8	4.1	14
	Total Western	3.1	3	10.5
Central	ST/SC	2.6	6.4	9.7
	OBC	3.7	8.1	12.6
	Other	3.6	4.5	7.4
	Total Central	3.3	6.8	10.6
Eastern	ST/SC	1.0	5.6	12.4
	OBC	1.3	3.4	7
	Other	0.4	3.9	8
	Total Eastern	1.0	4.1	8.7
Southern	ST/SC	0.0	13.2	18
	OBC	0.0	13	17.5
	Other	5.6	0.8	1.1
	Total Southern	1	11	14.9
PCE	Poorest quintile	2	4.8	11.5
	Q 2	1.9	4.2	10.4
	Q 3	2.1	4.6	10.6
	Q 4	2.4	4.4	8.6
	Richest quintile	2	4	8.1
Total rural UP		2.1	4.4	10

[61] When households are unaware about the existence and importance of an Anganwadi center in the village, it might be because of the lack of outreach activities. But it may also indicate the centers are dysfunctional.

7.22 The ICDS program is less likely to reach children between the crucial ages of zero and three when nutritional interventions have the greatest benefit. There seems to be several reasons why ICDS centers are not attracting children from this age group. First, children in this age group are more difficult to transport to Anganwadi centers than 4-5 year olds. The mother must take time from her schedule to attend the center. Second, 4-5 year olds also receive food at these centers, which is another reason to attend. Third, the Anganwadi centers are not as well equipped for younger cohorts (many centers do not have proper weaning foods). Hence, mothers may not see a great benefit in attending the center.

Box 7.4: Malnutrition is prevalent in UP – how ICDS can help

The prevalence of underweight children in UP is among the highest in the country; 47 percent of all children under age three are underweight (NFHS-3). The consequences of under-nourishment extend beyond retardation of physical development by hampering learning and cognition. ICDS centers, also known as Anganwadi centers, can help address the multi-dimensional causes of malnutrition.

In general, evaluations of the ICDS program have been mixed. For example, Deolalikar (World Bank, 2004) estimates that, for boys, the presence of an ICDS center in the village is associated with a five percent reduction in the likelihood of being underweight. There is no significant correlation or girls. Das Gupta et al. (2004) find that ICDS has a significant positive effect on nutritional outcomes. However, when propensity score-matching techniques were used, the impact was insignificant when comparisons were made between children in the ICDS villages and children with similar characteristics in non-ICDS villages.

7.23 Households that attended Anganwadi centers reported the centers operated regularly, the service provided was useful, and food supplementation was available. Available data allows for an analysis of just a few factors related to the operation of the centers. First, more than one-half of households that attended Anganwadi centers reported the centers were open for more than 24 days in a month. Second, utilization of the centers was high. That suggests people perceived the service as valuable. Among households that attended an Anganwadi center at least once, more than one-half visited the center more than 20 days during the last month. Third, food supplements were available. More than one-half of all households using the centers reported that they received more than 20 days of food supplements in the last month. The assumption is that mothers in one community do not value these services any differently from mothers in another community. One reason why the use of ICDS services is low in some communities may be that most of these ICDS centers are in fact dysfunctional.

7.4 Programs to support the chronically poor

7.24 Programs that help mitigate the severity of current poverty so as to discourage behavior that will perpetuate it in the long run (such as withdrawal of children from school or providing inadequate nutrition to infants) fall into this category. This section focuses on the following programs: Targeted Public Distribution System (TPDS) and social assistance schemes (National Old Age Pension, Disability pension, Widow's pension, and Maternal benefits).

Targeted Public Distribution System

7.25 **Fair price shops remain an important source of food grain to Antyodya households, less so for BPL cardholders**. One-seventh of all BPL cardholders purchased food grain from a fair price shop in the 30 days preceding the survey (figure 7.3).[62] The utilization rate increased to one-third of households with an Antyodaya card. The proportion of BPL cardholders purchasing wheat and/or rice in urban areas exceeds the proportion of households in rural areas who did likewise in the 30 days preceding the survey.[63] Among Antyodaya card members, the proportion

[62] About four percent of all households in UP purchased either rice or wheat from a fair price shop 30 days prior to the survey.

[63] Historically, a key objective of the PDS system has been to purchase surplus grain from farmers in rural areas and sell it in urban areas, especially at times when urban areas face rising prices. However, recent trends have led private

of urban households purchasing rice exceeded that of rural households, but the proportion of rural Antyodaya households that purchased wheat (36 percent) was almost double that of urban Antyodaya households (17 percent).

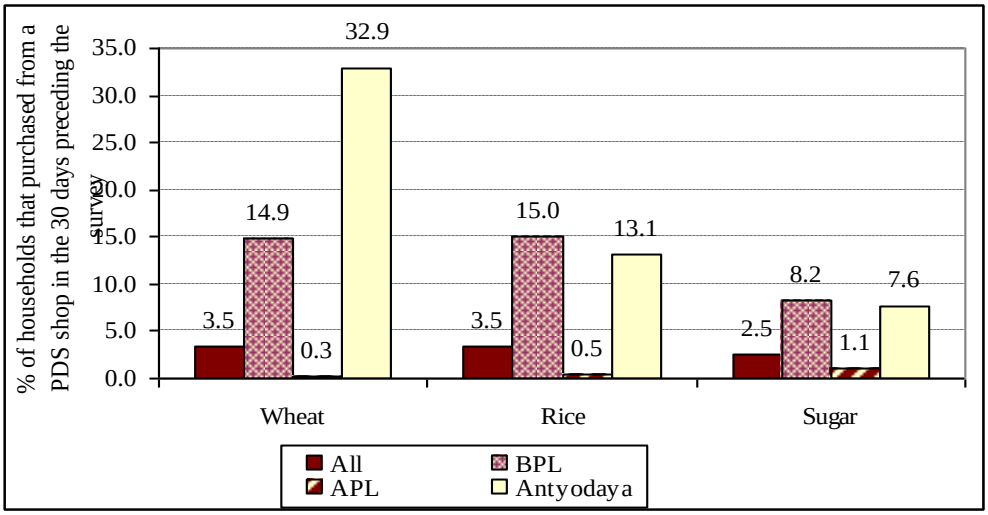
Box 7.5: Targeted Public Distribution System in Uttar Pradesh

The Targeted Public Distribution System (TPDS), the largest food security program in India, accounts for about one percent of GDP. It has undergone several transformations over the decades. In its current incarnation it provides subsidized essential goods (rice, wheat, edible oils, and kerosene) to targeted households. Under this program, ration cards are issued to those ***Below-Poverty-Line (BPL), Above-Poverty-Line (APL) and Antyodaya Anna Yojana (AAY)*** households. Today, BPL cardholders are entitled to 35 kg per family per month at a 50 percent discount. APL households are entitled to 10 kg per month at a discount of about 70 percent. Antyodaya households can purchase up to 35 kg a month for around 25 percent of the cost.

GoI allocates grain to states based on the number of people holding BPL, APL, and AAY cards and the state's off take of those items in previous years. Once these allocations are made, fair price shops sell the goods to eligible households. UP's off-take is 41 percent of BPL allocations and almost 97 percent for Antyodaya allocations (GoI for 2002-03). The off-take ratios for India as a whole are 60 percent for BPL allocations and 86 percent of AAY allocations. For APL allocations, the off-take ratio of grain in UP is less than one percent; in India as a whole the ratio is above six percent.

7.26 One of the main reasons for the low off-take between BPL and APL households is that the cost savings on grain is minimal when purchased from a fair price shop compared to the open market. (The quality of the two is about the same.) In fact, based on GoI's sampling of 18 states in 2005, UP had the smallest difference between the market and BPL price for rice and wheat. However, the price difference for grain was significant enough to encourage greater use of fair price shops (FPS) by AAY households who are among the poorest in the country.

Figure 7.3: Use of fair price shops for rice, wheat and sugar



7.27 Fair price shops are waning in importance when it comes to satisfying a household's need for grain. Nevertheless, the current increase in global food prices may spur a revival of FPSs as a source of food grain. In 1999-2000 eleven percent of all households and 27 percent of BPL cardholders purchased rice and/or wheat from a fair price shop in the 30 days preceding the survey. With current utilization rates at 4.5 percent and 16.2 percent, respectively, there is a clear

traders to play a bigger role in urban areas than in the past. As a result, the fair price shop has become more popular in rural areas. The goal was to reach economically and socially backward areas and vulnerable regions under the Revamped PDS in 1992 and then to reach the poor through the TPDS (GoI, 2000).

drop in TPDS usage for food grain. This drop also applies to sugar. Although 63 percent of BPL cardholders purchased sugar from a fair price shop in 1999-2000, only eight percent did so during 2002-03.

7.28 Key socioeconomic and regional indicators related to fair price shop usage are as follows (table 7.6). First, the proportion of SC/STs who frequent fair price shops exceeds other castes, regardless of the type of card held by the household. Second, the Southern and Western regions experience heavier usage of FPSs for BPL and AAY cards, respectively. In contrast, the Central region experiences very little usage regardless of the card. Finally, despite generally low coverage rates, inclusion errors are significant in household use of FPSs for the purchase of rice and wheat. For example, 15 percent of households in the top 40 percent of welfare distribution use FPSs regularly.

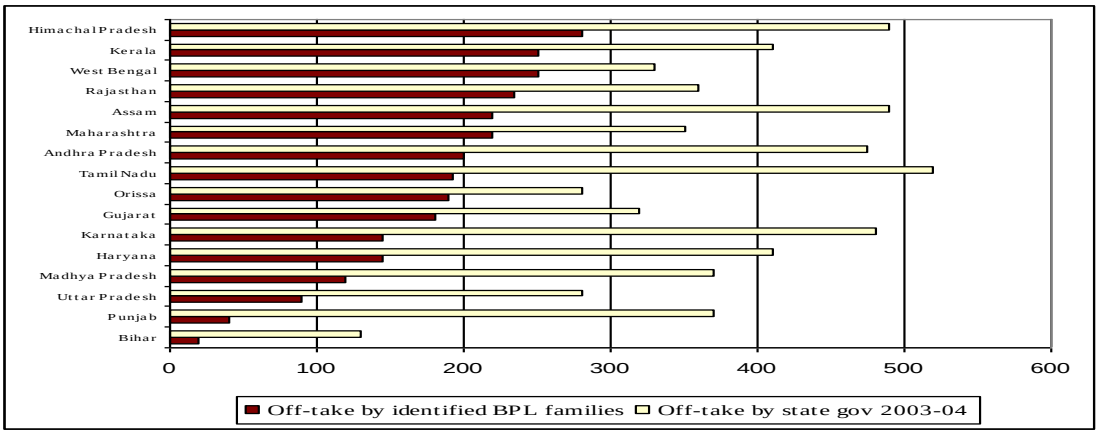
Table 7.6: Percent of households purchasing food grain from fair price shops in the 30 days preceding the survey in Uttar Pradesh

	Wheat				Rice			
	APL	BPL	AAY	Total	APL	BPL	AAY	Total
Poorest quintile	0	20	24	8	0	20	7	8
Q 2	1	13	22	4	1	14	19	4
Q 3	0	10	72	3	0	11	40	3
Q 4	0	16	52	4	0	17	13	4
Richest quintile	0	11	21	2	1	11	0	2
Rural	0	15	36	4	1	15	13	5
Urban	0	21	17	2	0	18	17	2
SC/ST	1	17	40	8	1	17	11	8
OBC	0	14	25	3	1	14	11	4
Non-backward castes	0	11	39	1	0	12	25	2
Western	0	19	66	3	0	18	11	2
Central	0	10	4	3	0	10	4	3
Eastern	0	14	34	5	0	13	18	5
Southern	1	23	57	8	3	33	0	12
Total	0	14	33	4	1	15	13	4

Source: PSMS-II

7.29 Among Indian states, the grain off-take ratios place UP in the lowest third for BPL and APL allocations. UP is in the top third for Antyodaya off-take. UP's off-take of grain from the Food Corporation of India (FCI) corresponds to 285 kg per BPL family per annum (Planning Commission, 2005). However, the off-take by households is only one-third of that, namely 93 kg per BPL family per annum. The difference in these numbers indicates that two-thirds of grain allocation to UP is not reaching the intended beneficiates. It is possible that waste, leakage of grain into the markets and to non-BPL households play a role.

Figure 7.4: Off-take by state and BPL families in Uttar Pradesh in 2003-04



Source: Planning Commission (2005).

7.30 Many households do not use fair price shops on a regular basis. However, these shops are a significant source of food grain for those that do use the stores; these households usually purchase nearly their full allocation. As a percent of total household expenditures, fair price shop expenditures for grain represent more than seven percent of household expenditures for those in the 20th percentile. Among households that purchased food grain from fair price shops, the median quantity of wheat and rice purchased in the 30 days preceding the survey was 23 kg and 12 kg, respectively. The median amount purchased varied little across geographic regions and caste.

Table 7.7: The median quantity of wheat and rice purchased by households that made a food grain purchase from a fair price shop in the 30 days preceding the survey in Uttar Pradesh

	Wheat				Rice			
	APL	BPL	AAY	Total	APL	BPL	AAY	Total
Poorest quintile	23	23	10	23	12	12	12	12
Q 2	23	20	23	22	12	10	12	11
Q 3	23	23	15	23	12	12	6	12
Q 4	23	22	10	22	5	12	12	12
Richest quintile	10	23	10	23	5	12		10
Rural	23	23	10	23	5	12	12	12
Urban	20	23	23	23	12	12	12	12
SC/ST	20	23	10	23	9	12	12	12
OBC	23	23	10	23	5	12	12	11
Non-backward castes	40	23	15	23	10	12	6	10
Western	23	23	10	22	5	12	12	10
Central	23	23	23	23	12	12	12	12
Eastern	23	22	15	22	12	12	12	12
Southern	20	20	10	20	5	8		5
Total	23	23	10	23	5	12	12	12

Source: PSMS-II

7.31 For a very large share of the population, access to fair price shops is not the problem. Access to grain is the problem. Almost 80 percent of all rural households report that there is a fair price shop within their village. Most reported that the FPS is 0.5 km from their house. Frequent shortages of food grain, sugar and edible oil have contributed to low household usage of these

products. More than two-thirds (68 percent) of all households reported that rice or wheat was not available at the nearest fair price shop in the 30 days preceding the survey.[64]

7.32 **The most significant factor affecting food grain off-take is the type of card held by the household**. This follows from the *probit* analysis of the determinants of household food grain purchases from a FPS. BPL cardholders are only slightly more likely to purchase food grain from a fair price shop compared to APL households. However, Antyodaya households are considerably more likely to make the same purchase from a fair price shop. Furthermore, after holding the type of card constant, the probability of food grain off-take increases with income. Households in the Eastern, Central and Western regions are significantly less likely to purchase food grain from a FPS than households in the Southern region. The probability of FPS purchases decreases as land holdings increase. This suggests that households with land are likely to meet food grain needs through subsistence farming. Accessibility (proximity) to FPSs increases grain off-take.

Table 7.8: Proportion of households reporting that item was NOT available at the nearest fair price shop in the 30 days prior to the survey in Uttar Pradesh

	Rice	Wheat	Sugar	Kerosene	Edible Oil
Poorest Quintile	69	69	69	5	96
Q2	72	73	71	6	96
Q3	70	69	68	6	95
Q4	68	69	71	7	95
Richest Quintile	63	62	63	7	93
Rural	67	66	67	4	95
Urban	75	75	76	16	96
SC/ST	61	61	67	5	94
OBC	70	70	69	6	96
Non-backward caste	72	71	69	9	94
Western	81	80	76	8	98
Central	58	58	60	10	86
Eastern	71	70	76	3	97
Southern	12	13	12	3	99
Total	68	68	68	6	95

Source: PSMS-II

Social Assistance Schemes

7.33 **Coverage rates are very small for the four social assistance schemes**. Overall, the old age pension, disability allowance, widow's pension, and pregnancy benefits exist in 6.0, 0.05, 4.4 and 0.10 percent of UP households, respectively[65]. Among social assistance programs, old age pensions target poor people reasonably well. The evidence is inconclusive for the other programs. In the case of widows' pensions and maternal benefits, the concentration curves of the

[64]Respondents were asked whether the item was available at the nearest TPDS and could answer 1) yes, the item was available, 2) no, the item was not available, or 3) don't know if the item is available. For the purpose of calculating the proportion of households who reported that the item was not available at the nearest fair price shop, the number is based on the people who answered 2) as a fraction of the sum of those who either answered 1) or 2). In other words, the assumption is households that know definitively about the lack or availability of goods at the fair price shop, have an interest in those goods, while those households that answered 3) did not have sufficient interest in the product to determine whether the fair price shop had it or not.

[65] Note that proportions are defined as follows: for old age pensions, the denominator is the number of households with at least one member older than 60 years; for widows, the denominator is the number of households with a widow; for pregnancy benefits, the denominator is households with at least one female aged 18-55 and children under the age of 11 months.

beneficiaries and non-beneficiaries cross; this implies that no clear welfare ranking can be made between beneficiaries and non-beneficiaries.

Box 7.6: Social Assistance Schemes in Uttar Pradesh

The National Social Assistance Scheme (NSAS), launched in August 1995 by the Department of Rural Development, has three major components. First, the old age pension goes to applicants over 65 years of age who have limited means of support. Second, persons suffering a 60 percent disability or the death of a breadwinner in a poor household also qualify for a National Family Benefit Scheme (NFBS). Finally, families below the poverty line are entitled to a Rs. 500 cash benefit for up to two live-birth pregnancies. The data indicate that benefits for old age, widows and disability pensions are each approximately Rs. 1,500 per year. Maternal benefits for pregnant mothers are approximately Rs. 500. The National Social Assistance Scheme (NSAS) was introduced in August of 1995. The scheme is sponsored and managed by the Central Ministry of Rural Development. Most states voluntarily supplement the central government's benefit.

7.34 **There is significant variation in program usage across castes and household welfare**. For instance, other non-backward castes are more likely to receive old age pensions, while widow's pensions are more likely to benefit SC/STs.[66] There is also variation in usage -- but without an obvious pattern across household welfare quintiles -- with one exception. Coverage rates for old age pensions increase as household welfare rises.

Table 7.9: Percent of population receiving social assistance benefits (during 12 months preceding the survey), 2005

		Rural			Urban		
		Old age pension	Widow's Pension	Maternal Benefits	Old age pension	Widow's Pension	Maternal Benefits
Western	ST/SC	1	12	0	15	10	1
	OBC	3	3	0	8	4	0
	Other	5	2	0	15	1	0
	Total Western	3	5	0	12	4	0
Central	ST/SC	2	4	0	32	8	0
	OBC	1	5	0	14	2	0
	Other	9	6	0	29	0	0
	Total Central	3	5	0	25	2	0
Eastern	ST/SC	3	8	0	27	0	0
	OBC	4	5	0	8	0	0
	Other	9	2	0	32	0	0
	Total Eastern	5	5	0	22	0	0
Southern	ST/SC	0	7	2	10	0	0
	OBC	1	1	0	10	0	0
	Other	10	0	0	31	0	0
	Total Southern	2	3	1	19	0	0
Wealth group	Poorest quintile	1	7	0	6	0	0
	Q 2	2	2	0	11	6	0
	Q 3	2	6	0	9	4	0
	Q 4	5	5	0	17	2	0
	Richest quintile	7	5	0	35	0	0
	Total UP	4	5	0	17	2	0

[66] This comparison assumes that each of the socio-economic groups has an equal chance to receive old age and widow's pensions.

7.4 Conclusions and Policy Implications

7.35 **Increase program coverage of the targeted population and reduce inclusion errors**. The mid-day meals program, which has the best coverage of all the programs analyzed here, covers less than one-half the targeted population. An effort must be made to increase coverage among vulnerable groups of people and to offer them the benefit of existing safety nets. There have been positive developments in that direction. For example, implementation of the National Rural Employment Guarantee Act (NREGA) has the potential to make a positive impact on 200 districts across India, including 22 districts in UP. Among other things, the NREGA is expected to help increase the number of beneficiaries and the impact of the program by raising the number of work days available to volunteers. Inclusion errors draw on program budgets and they have no impact on the target population. As a result, the number of needy households can potentially go up if the programs reduce inclusion errors. This can be accomplished with minimal impact on government budgets.

7.36 **Reduce geographic disparities in program coverage and take-up**. UP is a large state when it comes to land mass and population. Therefore, geographic disparities in program performance are to be expected. However, UP exhibits extreme geographic disparities in its public works program and targeted public distribution system. Nevertheless, with careful monitoring, the disparities can be resolved so that the delivery of services is more equitable.

7.37 **If anti-poverty programs are to help poor households, the transfer amounts may have to rise**. Social assistance programs like the NOAPs appear to affect households in a positive way, but the coverage they offer is small. Other programs, especially those with wider coverage like the school scholarship and grain distribution programs, increase household welfare by a negligible amount. The public works schemes (SGRY) have a small impact on household welfare mainly because program participants can only receive wages for a few days a year. If these programs are to have a welfare-enhancing impact on poor households, it may be necessary to increase the value of that household transfer. More work is necessary to evaluate the optimal transfer. Before that can happen, this evaluation will need to weigh the implications of an increase on government budgets and the impact on household welfare and behavior.

7.38 Many of the preceding recommendations point to further monitoring and evaluation. However, there are also several instances in which recommendations from previous studies have yet to be implemented. Regular and credible monitoring and evaluation are needed but first some problems must be ironed out. For example, muster rolls are used in monitoring the SGRY. Large discrepancies in household surveys exist as a result. This suggests the methodology for measuring program outcomes needs to improve. A related problem is that the lessons learned from previous studies have not led to sufficient reform of government programs. In other words, feedback mechanisms are not in place that would ensure the duplication of positive experiences and the elimination of negative ones. The Targeted Public Distribution System is one example. This system is one of the most widely studied programs in the world, but the lessons from those studies have yet to be implemented. Nevertheless, there are signs that the government is making some progress and some reforms. Implementation of the NREGA is relevant and a genuine sign that the government intends to improve on the existing workfare programs. However, it is too early to make a definitive assessment.

CHAPTER 8: POLITICAL ECONOMY AND INSTUTUTIONAL ISSUES IN SERVICE DELIVERY

8.1 UP has emerged from its fiscal problems and has significant space on budget for developmental spending (see Highlight 8.1). The challenge now is to translate outlays into outcomes, by addressing the constraints to effective service delivery. These constraints are largely a question of *incentives*, both economic and political. Resolving them calls for difficult reforms in *institutions*, requiring strong leadership and commitment to service delivery. The emergence of a politically stable majority government in 2007, after more than a decade and a half of short-lived regimes, has raised the hope that political economy constraints could at last be addressed. It is a major challenge, of exceptional importance given the massive size of UP, its diversity and its enormous development potential.

8.2 A useful conceptual framework for analyzing service delivery consists of an "accountability triangle" with three sets of inter-relationships between three sets of actors: (i) elected political representatives or "the state", (ii) service providers and (iii) beneficiaries or citizen clients.[67] Accountability for service delivery in the UP context has suffered in the past from weakening of all the three links in the triangle; as a result, the state suffers from what one analyst has called a ***governance trap.*** This is a kind of vicious cycle of low performance, low expectations and limited influence of the public on service providers. Deterioration in the quality of governance over a fairly long period has also led to a worsening of the image of UP, perhaps even more than justified by the actual deterioration in service delivery. Getting out of this trap poses a special challenge.

8.1 Link between elected political representatives and citizens [68]

8.3 Political scientists who work in India and specifically Uttar Pradesh believe that the main currency of political competition is the provision of direct transfers and benefits to individual households (subsidies, welfare payments, jobs), often at the expense of broad public services that benefit many (Chhibber; Varshney; Chandra; Mehta). Keefer and Khemani (2004) have recently argued that political obstacles to pursuing sound economic policies stem from imperfections in political markets. As a result, citizens or voters have little faith in the credibility of political promises about broad public services. This makes it difficult for politicians to take away jobs and transfers or to impose new taxes to create the fiscal space for financing and facilitating broad public services. Subsidies and jobs cannot be taken away because poor people think this signals a pro-rich party. User charges or community contributions towards maintenance of local assets and services are difficult to raise because people don't believe that the government will deliver the goods associated with these user charges.

8.4 At the same time, Indian citizens in general and Uttar Pradesh specifically have also become more demanding. Who wins an election appears to depend more and more on who ultimately turns out to vote on election day. The political need of the hour is to reach the potential swing voter. The identity of these voters is difficult for political parties to ascertain. They are difficult to target; they could turn out on election day and swing the vote away from the incumbent government. This political trend might be exactly what is needed to align political

[67] For a detailed discussion of the underlying conceptual framework, see World Development Report 2004: *Making Services Work for Poor People*, Oxford University Press.

[68] Draws on S. Khemani's, "Uttar Pradesh: Recognizing the Salience of Politics How can political obstacles to good service delivery policies be overcome?"

interests with development interests. All parties and candidates now need to woo that faceless, unknown, swing voter. They could reach the swing voter by broadly improving the quality of public services.

8.5 The problem is one of transition. How does a government move out of an equilibrium where it has little fiscal and policy space and reach the swing voter without alienating its core constituency? How does a government improve its credibility with citizens at large for broad public services? This chapter proposes one solution to these questions that might be worthwhile to pursue on an experimental basis. This solution is based on increasing international experience. Institutions of decentralization to local governments and participatory agencies could help improve political credibility and citizen demand for public services by specifically structuring information and awareness campaigns.

Box 8.1: Political landscape in Uttar Pradesh in mid 2000s

Politics in UP has historically been witness to three-way and sometimes four-way contests between the major contending parties, differentiated along caste lines and relying essentially on distribution of patronage. The decade of the 1980s saw the decline of the Congress Party's dominance. That signaled the end of the old coalition between the higher castes, scheduled castes and Muslims that once prevailed. Political awakening and independent mobilization of the intermediate landed strata (Yadhavs and others, collectively known as other backward classes or OBCs, championed by the Samajwadi Party that ruled during 2004-07) and the laboring class (mainly the lowest social strata known as scheduled castes, in official parlance, and *dalit*s in common parlance, championed by the Bahujan Samaj Party) gave rise to a three way division of the polity between the higher, intermediate and lower castes – championed by the BJP, SP and BSP, respectively. Such a three way polarization along caste lines led to fractional verdicts and unstable coalitions during 1990-2006.

Under the leadership of Ms. Mayawati in May 2007, BSP's absolute majority promises political stability for the first time in 15 years. Since 1993, no political party could get more than 25 or 26 per cent of UP's vote. BSP finally crossed the 30 per cent threshold with a combination of dalit, brahmin, lower OBC and Muslim support.

Electoral realities have altered the political agenda of the BSP. It is no longer a party that caters only to dalits. Rather, BSP's emphasis is on the "poor upper castes," "lower OBCs" and dalits means that it needs to attend to a larger social coalition. In effect, this also means that policy programs that reach out to a larger cross-section will have to be devised and implemented. This dualistic political thrust can receive a new name. It can be defined as a challenge of combining the politics of dignity - which has formed the core of BSP politics thus far, and the politics of development. (Ashutosh Varshney, 2008.)

The formation of a single party majority government, committed to an agenda of dignity and development, offers a window of opportunity to address problems of service delivery in UP. The political executive has serious interest in delivering something visible and palpable to a wide cross-section of the population, including the poorest. With an absolute majority of seats in the legislature, the current government has the possibility of effecting major change. However, to increase the chance of success, some critical elements in the 'accountability triangle' need to be addressed.

Problem of voter expectations and political credibility

8.6 To have a greater impact on larger numbers of people and attempt to reach that elusive swing voter, state governments have to fix broad public services pertaining to law and order, health, education, and infrastructure. The majority of citizens (Chhibber et. al.) hold state government responsible for these services. Government's dilemma is how to fix these services, and equally important, how to get credit for doing so from the voters, in the face of low awareness and participation among citizens. Providing quality services in education and health depends upon the day-to-day behavior of service providers, doctors and teachers. These service providers are far from state politicians; citizens find it difficult to credit (or blame) politicians if their children are learning (or not), are surviving health shocks (or not), and whether citizens feel secure (or not). Citizens pay more attention to the construction of schools and clinics in their village, for example, as a sign of the government's effort on their behalf, even if these buildings are subsequently empty. Government efforts to enact policies that would promote broad development outcomes in public health, for example, to reduce the incidence of disease and child

mortality, are difficult for citizens to observe. Furthermore, when actual improvements occur, it is difficult for them to credit these improvements to government performance.

8.7 For basic infrastructure services—roads, water, electricity—the problem is somewhat different. Citizens *can* observe whether the services are available and of good quality. They *can* credit (or blame) government when services are well provided (or lacking). A household survey in UP recently asked village citizens to list in order of priority what were the most pressing problems in their village for public policy to address (Banerjee et al, 2007). Roads, water, and electricity, in that order, were ranked as the top three problems by the overwhelming majority of respondents.[69] Political parties in India are indeed well aware of citizen demands. They center their electoral campaigns on the rhetoric of "*bijli, sadak, pani.*" What political parties seem to have done quite successfully is provide some basic infrastructure in the majority of villages in the country.

8.8 However, what citizens cite as continuing problems are a lack of maintenance of public assets and their very poor quality. Roads are barely navigable, water is undrinkable, and the supply of electricity is intermittent at best. Why, despite overwhelming citizen demand for these services are governments unable to direct resources and policies to redress these problems? One answer to this question is the dilemma of transitioning to a new political equilibrium.

8.2 The other two links

8.9 While the political link is the weakest in UP (as in many other places), the other two links are also weak. Heads of government did not expect to last beyond a year or two. They pursued short-term and narrow objectives, often in conflict with longer term development goals. There are some indications that incentives governing the political executive changed in 2007. A majority ruling party is able to align both short-term and medium-term objectives, and then converge to a fair degree with long-term development goals (box 8.1).

8.10 The link between the political executive and the service providers belongs in the realm of public sector management. Political developments in the past decade and a half, when regional parties championed the cause of empowering the lower and intermediate sections of society, led to a weakening of trust between political representatives and the civil service. This situation needs to be repaired. Attempts by the new government to rationalize and to increase the transparency of and regulate the process of recruitment, transfers and posting in the civil service, are first steps to fix the problem. There is still a long way to go, based on the distance between senior bureaucrats in the state secretariat and the front-line service providers in the varied and far flung regions and districts of this massive state.

8.11 Reducing crime in UP is one challenge that highlights the importance of public sector management. There appears to be a strong political incentive and commitment to tackle crime, but the task poses a major management challenge. It involves not only a strengthening of deterrents through the prosecution and conviction of big time criminals, but also changing the environment in which people resort to crime.

[69] A similar question was asked in a household survey in four states in the south of India—Karnataka, Kerala, Tamil Nadu, and Andhra Pradesh; the responses were strikingly similar. Roads, water and electricity were at the top of the list of problems. Education, health, poverty, sanitation, was barely mentioned at all. In this survey, people were also asked to identify retrospectively the most important problems of several years ago and whether anything had been done to address these problems. The rankings remained unchanged over time. People's perceptions were that no adequate action had been taken to address them.

8.12 The third link – between service providers and the intended beneficiaries of public spending programs -- suffers from an entrenched culture that information is power. Hence, the less you share, the more power you have. This is beginning to change, but slowly. One major sign of change is the enhanced degree and quality of financial information displayed on the official government website. More such measures to provide relevant information to the public are reportedly under consideration. These include the public display of fund allocations and actual expenditures outside schools and health centers as well as lists of beneficiaries of anti-poverty programs, etc.

8.13 The political environment might be conducive to improvements in service delivery and information campaigns. The lowest level of elected government can strengthen accountability linkages between politicians and citizens and service providers and citizens. However, overall improvements will require institutional changes. These may also include changes in the electoral process, which is beyond the scope of this report.[70] This report follows India DPR[71] which identified the promotion of institutional innovations in service delivery, improvements in the "unbalanced" decentralization to PRIs (see above) and the use of non-state providers in service delivery as a promising way forward. The last includes health and education as promising ways to improve service delivery. Common ways to bring about these institutional changes in India, all of which are applicable in Uttar Pradesh, include the following.

- Clearer *delegation* of responsibility of providers for outputs and outcomes—expanding from responsibility to compliance.
- An *unbundling* of the roles of government between the general *responsibility* for a sector and the *production* of the outputs—moving away from situations in which line agencies are both umpire (responsible for setting standards, creating and disseminating information, monitoring compliance, evaluation) and player (responsible for day to day management of providers).
- Greater *autonomy of* providers (both organizational and frontline) in how they achieve their goals and insulation from top down or narrowly political micro-management.
- Increased *external accountability, which* requires greater transparency and better flow of *information* and *social mobilization*/*empowerment* to make that information effective.
- Greater enforceability so that citizens and communities become the direct "clients" of service providers (both public and private) and they have a greater voice (over the responsible level of government) and choice across providers (as an effective mechanism to exercise power).

Decentralization

8.14 The UP Panchayat Raj Act of 1947, amended through the Uttar Pradesh Panchayat Laws (Amendment) Act of 1994, assigns to PRIs much of the activities required for maintenance of local assets and monitoring the quality of public services.[72] This act, in concert with other sector-specific policy initiatives, assigns to *Gram or Gaon panchayats* (GPs), directly elected village-level governments, the role of operating and maintaining local assets created under various state and centrally-sponsored schemes. Their emphasis is on rural water supply and sanitation schemes. GPs are empowered to generate local revenues for maintenance through user charges and other

[70] There is an argument that direct, rather than indirect, elections to rural local bodies at higher than village level would improve accountability; such issues are not covered by the analysis in this report.
[71] See 2006 Development Policy Review "India Inclusive Growth and Service Delivery: Building on India's Success."

[72] Information on the status of decentralization appears in a report published on the website of the national Ministry of Panchayati Raj, entitled *Status of Panchayati Raj. State Profile—Uttar Pradesh.*

voluntary contributions. They also encourage citizen participation through the creation of citizen committees or user groups. GPs are also assigned the traditional role of selecting beneficiaries of state and centrally sponsored schemes for poverty alleviation and welfare of historically-disadvantaged groups.

8.15 Decentralization in UP appears to assign to the most *local* government tasks that require day-to-day monitoring of service providers. Local governments are also expected to interface with citizens to change their behavior so that they are in sync with public interest goals. One example is public health's centrally-sponsored sanitation schemes and gaining the support of local citizens to pay for public services. If such decentralization could truly be affected, then state politicians would retain only those instruments in their domain which are easier for them to implement and take credit for. These include the provision of jobs and schemes for construction, poverty alleviation, and targeted welfare.

8.16 However, such decentralization might not come about if citizens do not hold GPs responsible for the quality of local infrastructure and the day to day monitoring of schools and health centers. If citizens continue to place the bulk of their expectations on service delivery at the door of state government, they are more likely to punish state politicians at the polls for inadequacies of service delivery rather than local politicians. This would weaken GPs' incentives to allocate budgetary resources in the best possible way in the face of competing public need. Instead, local incentives are more likely geared toward serving narrow interest groups or extracting rents. Poor quality public services will be blamed on insufficient transfer of authority over "funds, functions, and functionaries" from higher tiers of government.

Problem of partial decentralization

8.17 Because of the nature of fiscal and administrative decentralization, this is not an irrational response from citizens. State and central politicians control the bulk, if not all, fiscal resources. They have all the authority to hire and fire public providers and transfer resources to local governments in the form of "schemes." As a result, local governments have little discretionary authority to make allocations across competing needs. Local governments are not responsible for resultant trade-offs in decision-making and do not "own" the outcomes of public resource allocation. Because local governments essentially distribute benefits from separate pots of funds transferred from above, citizens have incentives to mobilize themselves to extract private benefits from these funds. Groups organize at local levels to field their candidates in exchange for targeted benefits or a share in office rents. Devarajan et al (2007) describe this phenomenon as one of "partial decentralization."

8.18 The hypothesis of partial decentralization and its concomitant clientelist local politics is that organizing citizens in narrow interest groups is at least as theoretically tenable as the alternate arguments that underlie most strategies to provide greater resources to local governments (or community-based groups). Citizens will somehow organize in the broader public interest when resources are available to locally-elected authorities than to the line ministries of the central government. This faith is especially likely to be misplaced when locally elected authorities merely distribute "goodies" financed from transfers from higher tiers of government. The latter controls all decision-making authority over the raising of revenue and policies regarding the delivery of services.

8.19 For example, one of the most important responsibilities decentralized to *gram panchayats* is beneficiary selection for poverty alleviation schemes funded by the state and central governments. Such decentralization has invariably been viewed in the literature as a good example of policy design. Solid evidence exists about the advantages that local government has in

appropriately identifying the poor or those that have faced particularly negative economic shocks (Alderman, 2002). This well specified role of local governments might further strengthen clientelist impulses at local levels --to the exclusion of proper specification of their role in general service delivery.

8.20 New evidence from Uttar Pradesh on decentralization of education provided additional evidence on the advantage of local government. Between September and December 2005, the NGO Pratham intervened in 195 of the 280 villages surveyed regarding different types of information and advocacy campaigns. These campaigns communicated to village citizens the status of their children's learning and the potential role that VECs and local governments could play in improving their children's education. The basic format of the interventions was to organize a village meeting about education and for the head of the local village government, the head teacher of the village public school and the key members of the VEC to be in attendance. At that meeting, the village community is urged to ask and receive basic information about local agencies involved in primary education. The issue raised most often in the village meetings and about which people were most animated was the government scholarship program. This program is supposed to provide cash assistance to students from SC/ST groups. SC/ST parents complained that they were not getting these scholarships. Teachers complained that parents inappropriately enrolled under-age children who can't and don't attend school just to lay claim to the scholarships. The second issue that attracted attention was the government mid-day meal program. Actual learning levels attracted the least attention. The facilitators had a difficult time steering the conversation away from scholarships and school meals and to the broader issue of learning.

8.21 Average attendance at these meetings was about 108 villagers. That seems to be a large gathering. The total village population (all ages) ranges from five hundred to five thousand (Pratham, 2006). These meetings were followed-up by small group meetings with VEC members who received pamphlets about their roles and responsibilities in education service delivery. The hypothesis behind these interventions was that once key community members were informed about the local agency, they would participate more actively to improve services. Then citizens at large would become informed and aware of it.

8.22 Three to six months after the information campaigns began, follow-up surveys occurred in the same 280 villages in March 2006. The most surprising fact to emerge was that the campaigns did not lead to any substantial improvement in citizens' lack of knowledge of VECs. Fewer than 10 percent of citizens were aware of the VECs before and after the interventions. There was no effect on public school performance or in VEC participation in school operations. This was in contrast to a dramatic increase in private efforts to improve learning among children who lagged behind in school. In those private programs, local youth volunteered to hold additional classes outside of school. Parents of illiterate children chose to participate in these classes. Consequently the children made great strides towards literacy. However, there was not even anecdotal evidence that these local volunteers were assisted in their efforts by local government structures—not the *Pradhan*, not the village public school teacher, not any member of the VEC. Indeed, according to anecdotes provided by Pratham's facilitators in the field, the public school teacher and the *Pradhan* in some villages felt threatened by the volunteer activities and the amount of attention given to learning failures in public schools.

A potential solution

8.23 The role of information and advocacy in changing the political participation of citizens and the credibility of political promises for broad public services is increasingly being explored in

policy experiments around the world. Specifically this is often in the context of improving local government.

8.24 One of the earliest examples in the developing world comes from Brazil. Tendler (1997) describes how the politics of patronage or "clientelism" in municipal governments in the state of Ceara in Brazil was tackled head-on through massive information campaigns by a state government that took office in 1987. The state government flooded the radio airwaves with messages about how infant and child mortality could be drastically reduced through particular public programs of municipal governments. It brought political pressure upon the mayors to deliver basic health services. Through a publicized recruitment effort the state also created a new class of public health workers; this effort conveyed information to communities about the valuable role these workers could play in improving public health through a community-wide effort. In only a few years, coverage of measles and polio vaccination in Ceara tripled to 90 percent of the population of children. Infant deaths fell from 102 to 65 per thousand births. The campaigns' success has been attributed to bringing a remarkable turnaround in the politics of the state—from being "clientelist" and patronage-based to becoming service-oriented (Tendler, 1997).

8.25 More recently, Brazil has been the source of another innovative experiment in reducing local political rent-seeking by generating and providing credible information to citizens. In May 2003 the national government of Brazil launched an anti-corruption program based on the random audit of municipal government expenditures by an independent public agency. Then the government released the audit findings on the internet and to media sources.[73] New evidence from more than 600 municipalities covered by the audit suggests that the disclosure of information significantly and substantially reduced the re-election rates of mayors that were found to be corrupt (Ferraz and Finan, 2006). Furthermore, this impact was significantly more pronounced in municipalities with greater access to radio stations.

8.26 A recent experiment with greater information and opportunities for participation by citizens in health services in Uganda resulted in substantial improvements in providing services in village health clinics, reductions in under-five child mortality, and weight-gains of infants (Bjorkman and Svensson, 2006). These results from Uganda contrast sharply with the experiment in Uttar Pradesh, previously described, which encouraged participation in education services through VECs. In Uganda there is evidence that publicly provided services improved and the impact on actual indicators of development was quite dramatic. In the UP experiment, there was no impact on publicly provided services. One of the striking differences in the design of the interventions in these two cases is that in UP collective action and citizen initiative were emphasized; Uganda highlighted public *providers* as responsible for quality services.

8.27 The UP-Uganda contrast is one example and a particularly striking one, from a growing body of evidence on the role of information campaigns in changing citizen expectations and participation. However, in spite of this evidence, there are significant gaps in our understanding of how these changes can be achieved to improve public resource allocation for development and allow governments to take credit for development promoting allocations. Based on the view of information as a "political market failure" and the evidence in particular from Brazil, this chapter proposes an idea specifically for Uttar Pradesh. The idea is for an information campaign that can

[73] In Portuguese, this program is called *Programa de Fiscaliza¸c˜ao a partir de Sorteios P´ublicos*, details of which are available from the following website: www.presidencia.gov.be/cgu.

improve political credibility for broad public services and thereby overcome political obstacles to development policy.

8.28 The idea is to stimulate citizen demand and their expectations of government, to strengthen citizens' trust to participate in government by their willingness to pay for services, for example, by collecting and publishing data on development outcomes at the lowest level of elected government—*gram panchayats*. Such information on development outcomes would be accompanied by information on government policies and resource allocations to address those outcomes. Fiscal grants to *gram panchayats* could be conditional upon the systematic *monitoring* of improvements in these indicators and detailed scrutiny of why, if and when improvements fail to materialize.

8.29 If information on development outcomes and state-driven public policies designed to address these outcomes are made available in a credible manner to citizens on a regular basis they can compare performance in one political jurisdiction to another. They can also monitor improvements (or lack thereof) within a jurisdiction over time. Then they are more likely to discern the role of government in promoting development and more willing to participate in and contribute to public resources for development. Such information campaigns might truly affect decentralization of day-to-day monitoring of service providers and interface with citizens to change their behavior to public interest goals, such as public health, and gain their willingness to pay for public services. State politicians could gain credit for implementing and financing an effective policy to promote the quality of public goods and services.

8.30 State administration could take such credit, for example, by promoting healthy competition between GPs to find more innovative ways of generating citizen participation and contributions to improving local services. Collection and dissemination of data on GP-level performance indicators by an independent and credible non-partisan agency would facilitate such competition and enable the state to take credit for improvements.

8.31 There is some emerging evidence that states in other parts of India are beginning to find ways to foster competition between GPs in promoting broad public services. The state of Tamil Nadu has a scheme, initiated by its Chief Minister, of grading villages and providing cash rewards to the best performers, called the *Namadu Gramam*. Villages are placed into categories 'A', 'B', or 'C', based on points received for performance along several dimensions—supply of safe drinking water, community hygiene, environmental protection, education of children, extent of community participation, and transparency in administration. The grading is done through data collected by district bureaucrats that report to the state's department of rural development.[74]

8.32 Such schemes may need to go several steps further to address the kind of political market imperfections discussed in this chapter, imperfections which constrain a state government from accomplishing and gaining credit for broad-based citizen participation in development. For example, simply rewarding the best performing villages might exacerbate regional inequalities if the poorly performing villages opt out of attempting to achieve the reward.[75] If data collection and the grading of village performance are done by state bureaucrats, the program might not be

[74]There has been no independent evaluation of this scheme. It's not clear that the data on which villages are graded are accurate, reliable, and independent of political manipulation. Yet, the scheme has generated much interest in the press. The effort is being hailed for tackling difficult issues of accountability.

[75]Barnhardt, Karlan, and Khemani (2007) provide a study which demonstrates this concern. They examined evidence of participation in a school rewards program in Karnataka. They found that only the best-performing schools were selected to participate. Poor performers were not enrolled in the program.

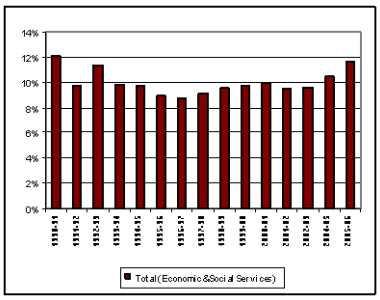
credible to all citizens. They might suspect political manipulation. That would dilute credit accruing to the state government for improvements stimulated by the scheme. Announcing rewards for the best performing villages in a media event -- without proper outreach to citizens -- would also fall short of the potential for changing citizen awareness of government policy efforts.

HIGHLIGHT 8.1. FISCAL SPACE FOR DEVELOPMENTAL SPENDING

8.1.1 The finances of the Government of Uttar Pradesh (GoUP) deteriorated throughout the 1990s because of an increase in expenditures committed to interest payments, staff salaries and pensions. A significant pay hike awarded to civil servants in 1998 pushed GoUP into a "fiscal crisis of unprecedented proportions"[76] by the turn of the century. In 1998/99, the deficit on the current account was 4.8 percent of Gross State Domestic Product (GSDP) and the overall fiscal deficit was 6.6 percent. As a result, the fiscal space available for developmental spending shrunk.

8.1.2 This crisis prompted GoUP to embrace fiscal reforms beginning in 1999. Since the passage of the Fiscal Responsibility and Budget Management Act in 2004, GoUP has complied with the stipulated deficit targets. The Government of India assisted in this reform effort by offering UP incentive grants and debt swaps from 2000-05. Today UP is one of the states that have met its target for a balance or surplus on its current account. Overall, UP reduced its fiscal deficit to below 3 percent of GSDP and the total expenditures on economic and social services as a percentage of GSDP almost recovered to their 1990-91 level (figure 8.1.1).

Figure 8.1.1: Total expenditures on economic & social services as a percent of GSDP, 1990-2006



Silent features of the GoUP budget

8.1.3 **Overall expenditures grew, but less rapidly than revenue** (Table 8.1.2). Based on the average annual improvement in the primary balance, the strength of fiscal correction during 1999-2006 was slightly below that set by the 14 major states. Nevertheless, on average, UP's revenue performance was stronger than other states, particularly poor states. Improvements in tax collections have been a major factor in bringing about these fiscal changes. At the start of the 21st century, tax evasion was rampant. So was collusion among tax officials and taxpayers whose goal was to deprive the state exchequer of its tax revenue and share "the booty among themselves." Since 2000, the most important development has been the routine monitoring of tax collections at the highest level. Regional and district officers have participated in this effort as well as tax departments. Their collaboration and monitoring has contributed to a change in the overall level of compliance with state tax laws and has reduced losses due to collusion and corruption.

Table 8.1.1: Decomposition of Fiscal Correction during 2000-06 (in percent of GSDP per year)

	State's Own Revenue	Central Resources	Expenditure Contraction *	Improvement in Primary Balance
Average 14 Major States	0.28	0.43	-0.33	0.38
Average 5 Poor States[77]	0.31	0.93	-0.76	0.48
Uttar Pradesh	0.35	0.62	-0.67 (current = -0.39; capital = -0.28)	0.31

Note: Average annual improvement in the primary fiscal balance between 1998-00 and 2005-06.
*- , if increase

8.1.4 GoUP spends around 4.2 percent of its GSDP on education, health and water and sanitation and places increasing importance on road transport. Overall spending recovered from the decline that took place in mid 1990s and now take 11.37 percent of UP GSDP which is higher

[76] Uttar Pradesh: *From Fiscal Crisis to Renewed Growth*, World Bank Report No. 18633 IN, Nov 30, 1998
[77] The five poor among the major states are Bihar, Madhya Pradesh, Orissa, Rajasthan & Uttar Pradesh.

than the average for 14 major states (table 8.1.3). Education is the largest expenditure item among all social sector expenditures. It remained constant since the early 1990s and is slightly higher than that for the 14 major states in terms of GSDP. Expenditures on health sector declined from their yearly 1990s level and now stand at .78 percept of GSDP. Water and sanitation expenditures declined as well and are now considerably lower than the average. During 2000-06 there was a major shift in favor of road transport compared to the early 1990s (table 8.1.3). This is a welcome development, as roads have been key to improving economic prosperity, according to respondents in the *Moving out of Poverty* study.

Table 8.1.2: Expenditure composition- functional (sectoral) classification, as percentage of GSDP, 1998-00 and 2004-06

	Uttar Pradesh			14 Major States (average)		
	1990-91 to 1994-95	1995-96 to 1999-00	2000-01 to 2005-06	1990-91 to 1994-95	1995-96 to 1999-00	2000-01 to 2005-06
Education	3.12	3.12	3.13	3.25	3.13	2.92
Health	1.04	0.88	0.87	0.99	0.89	0.78
Water & Sanitation	0.25	0.25	0.22	0.40	0.41	0.40
Irrigation	1.55	1.24	1.08	1.61	1.43	1.24
Roads	0.65	0.54	0.78	0.74	0.66	0.66
Other Sectors	3.93	3.19	5.29	5.22	4.27	4.42
Total (Economic & Social Services)	10.55	9.23	11.37	12.21	10.78	10.43

8.1.5 GoUP has more fiscal space for development spending today than it did five or six years ago and institutional reforms are urgently needed to improve efficient spending. As a share of total expenditures and net lending, capital spending has risen from 7.7 percent in 1998-00 to 19.7 percent in 2006/07. The combined share of salaries, pension and interest payments has significantly declined. Meanwhile, the percentage of non-salary recurring expenditures for goods and services has gone up. The aggregate fiscal improvement makes it possible to embark on an ambitious development effort in 2007-12, which coincides with the period of the Eleventh Five-Year Plan. Institutional reforms are needed to consolidate fiscal gains and address the key challenge of converting outlays to outcomes.

8.1.6 **The rapid increase in spending on roads spending needs to be accompanied by improvements in governance.** Within the category of expenditures set aside for roads, the amount spent on salaries has declined from close to 30 percent in 2001/02 to an estimated 15 percent in 2005/06. This is a welcome development. However, efficient spending is determined not only by broad economic composition but also by the quality and degree of competitiveness in the procurement process. The prevalence of monopolistic practices, including forcible prevention of new entrants in the bidding process, still exists. As a result, increased levels of spending may fail to yield a proportional increase in the quantity and quality of physical assets. Competitive bidding and the awarding of construction contracts based on merit would have a positive impact on the efficiency and quality of spending on roads and bridges in UP.

8.1.7 **Geographical targeting could improve spending effectiveness.** Given UP's size, the distribution of resources based on geography could also improve the efficiency of allocations. The Planning Department's database on the distribution of developmental resources makes it possible to monitor the geographical distribution of resources that go to the roads sector. The data for 2005/06 show considerable variation between districts in terms of per-capita resources for roads and bridges. However, there is no relationship between per-capita spending on roads and

bridges and per-capita income by district. It is possible that a significant part of the variation in spending is due to politics.

8.1.8 **Rate of completion of investment projects remains a problem**. This problem is present in many departments, but it is most acute in the Irrigation Department. The department has made some effort in recent years to speed up the completion of long pending investment projects within its portfolio. The Annual Plan of 2006-07 reports the completion of six major irrigation projects and five medium irrigation projects during the Ninth Plan (1997-2002) and the completion of eight major and two medium projects during the Tenth Plan (2002-07). Monitoring completion by the department is a welcome development. However, the Annual Plan also reports 21 new major and medium projects were introduced in 2006-07. 2006-07 is the last year of the Tenth Plan. Starting 21 new projects that year implies a large spillover into the Eleventh Plan (2007-2012). It is a sign that political bias in favor of starting new projects continues to distort resource allocation decisions in UP's irrigation sector.

8.1.9 **A quasi-fiscal deficit due to losses in the power sector is one of the biggest outstanding problems**. Power supply is a big constraint on private investment and a drain on the state's budgetary resources. Its commercial viability and the quality of the critical to the state's overall development. Supply shortages have begun to be addressed by attracting private investors to generate power and capacity. The biggest challenge remains the losses in transmission and distribution. In UP, the popular term for this is "*theft and dacoity*." Operating losses account for 1.7 percent of GSDP. Although these losses do not affect the budget deficit, they do add to the government's contingent liabilities. That's because GoUP owns these utilities. Reducing these losses poses one of the state's greatest developmental challenges.

ANNEX 1: PRECISION OF ESTIMATES OF REGIONAL HEADCOUNT POVERTY AND CHANGES OVER TIME

This annex provides estimates of standard errors for regional headcount poverty rates and their changes over time. It also provides confidence intervals for these estimates. Table A1.1 presents standard errors of changes over time by region and at the 95 percent confidence intervals, assuming normal distribution of the statistics. Regional estimates are based on the 50th and 61st Central NSS samples. There are three separate categories – UP overall, rural and urban -- and a breakdown by region within each one. Results show that in every case, changes in headcount poverty are different from zero for all four regions. As expected, estimates for urban areas and for the Southern region are less precise, compared with estimates for urban areas and for the other three regions respectively. These patterns emerge because the sub-samples contain fewer observations.

Table A1.1 Standard errors and 95 percent confidence intervals of estimates of regional changes in headcount poverty, Uttar Pradesh, 1994 - 2005

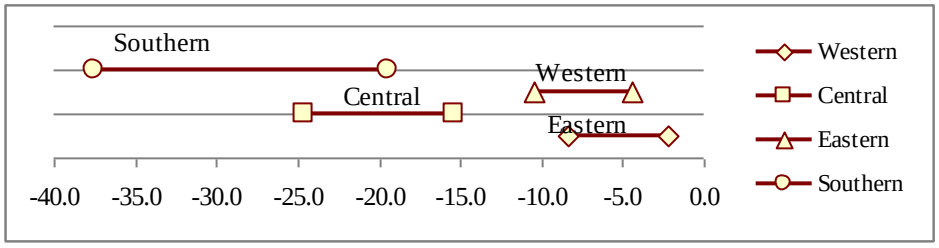
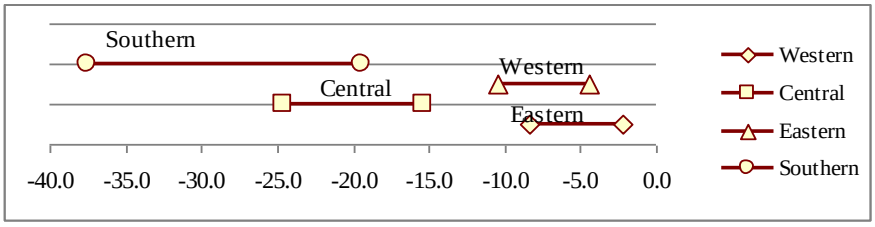
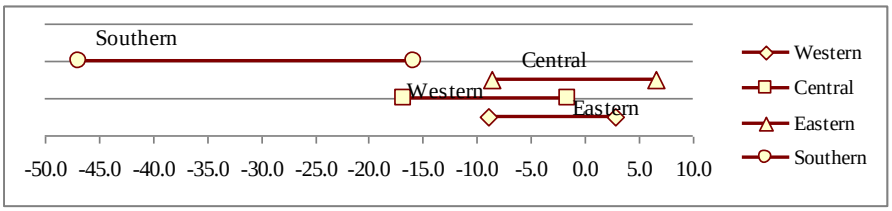
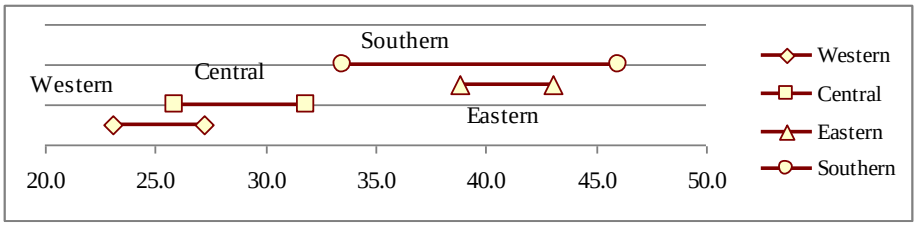
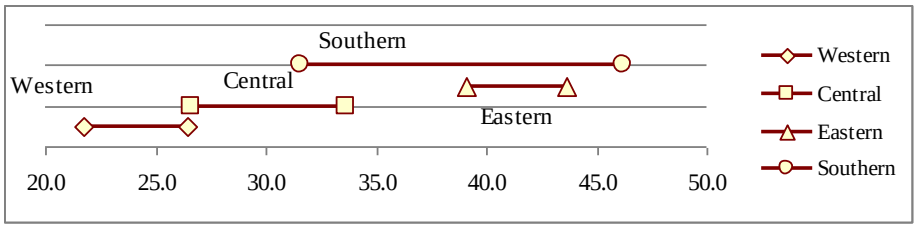
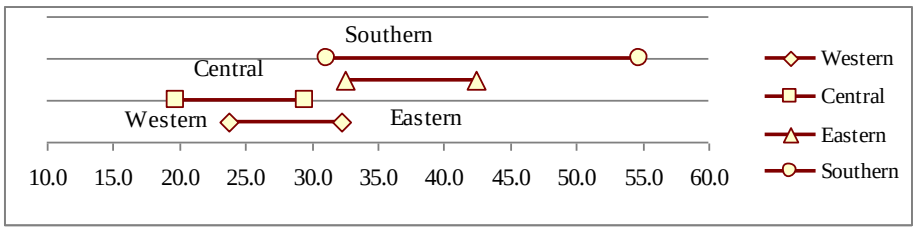
region	estimate and SE	95 percent confidence intervals
All UP		
Western	-4.7 (1.4)	
Central	-17.9 (2.0)	
Eastern	-6.6 (1.4)	
Southern	-29.1 (4.0)	
All	-9.1 (0.9)	
Rural UP		
Western	-5.3(1.6)	
Central	-20.1(2.4)	
Eastern	-7.4(1.5)	
Southern	-28.5 (4.6)	
All	-9.8(1.0)	
Urban UP		
Western	-3.1 (3.)	
Central	-9.2 (3.9)	
Eastern	-1.1 (3.9)	
Southern	-31.4(7.9)	
All	-5.9 (2.0)	

Table A1.2 contains standard errors and 95 percent confidence intervals for the headcount poverty estimates for 2005 61st NSS Central sample. For UP overall, the confidence intervals for the estimates for the Western and Central regions overlap; the confidence intervals for the

Southern and Eastern regions also overlap. This implies one cannot reject the hypothesis that headcount rates in the Western and Central regions are the same and headcount rates in the Southern and Eastern regions are also the same. For rural UP, the estimates are less precise because the sub-samples are smaller. One cannot reject the hypothesis that the following pair-wise estimates are the same: Western and Central; Central and Southern; Southern and Eastern. In urban UP, the lack of precision is even greater. An estimate of headcount poverty in the Western region is not distinguishable from that in the Central, Southern, and Eastern regions. Likewise, estimates for the Central region are not distinguishable from the Western. However, they are distinguishable from the Eastern and the Southern regions. Similarly, estimates for the Eastern region are not distinguishable from those for the Southern region.

Table A1.1 Standard errors and 95 percent confidence intervals of estimates of regional headcount poverty rates, Uttar Pradesh, 2005

region	estimate and SE	95 percent confidence intervals
All UP		
Western	25.5 (1.1)	
Central	28.8 (1.)	
Eastern	40.9 (1.1)	
Southern	39.8 (3.2)	
All	32.7 (0.7)	
Rural UP		
Western	24.1 (1.2)	
Central	30.1 (1.8)	
Eastern	41.4 (1.2)	
Southern	38.9 (3.7)	
All	33.3 (0.8)	
Urban UP		
Western	28.0 (2.2)	
Central	24.6 (2.5)	
Eastern	37.5 (2.5)	
Southern	43.0 (6.0)	
All	30.1 (1.4)	

ANNEX 2: ALTERNATIVE PRICE INDEXES FOR FOUR REGIONS OF UTTAR PRADESH[78]

This annex presents calculations of alternative price indexes for the four regions of Uttar Pradesh. It considers the implications of those indexes for changes in poverty in each region between the 50th round of the NSS, collected in 1993–94, and the 61st round, collected in 2004–05. The data for the 55th round, although used in an intermediate role to help calculate the price indexes, played no role in these calculations. The exclusion of the 55th round was to avoid using estimates of total expenditures from these calculations. The 55th round used a questionnaire that is not compatible with the questionnaires for the 50th or 61st rounds; the latter two are comparable. Section A2.1 discusses the calculation of food price indexes that link the 50th and 61st rounds. These food price indexes are based on the unit values collected from households in these two rounds. Section A2.2 uses the price indexes from Section A2.1 to update the official poverty lines for UP for 1993-94; it also calculates estimated headcount ratios by region and sector.

A2.1 Calculating price indexes

Calculations here follow the now standard procedure of using the unit-values from the NSS Consumption questionnaires to calculate price indexes for food. While the data contain unit values for a few non-food items, such as tobacco, alcohol, and some fuels, these are not included here choosing rather to calculate a "pure" food price index that can be compared with official food price indexes and which, in principle, can be extended to cover all items by being combined with the non-food components of official indexes. In the 50th Round, UP had five regions -- Himalayan, Western, Central, Eastern, and Southern. The Himalayan region became the new state of Uttaranchal, so indexes are calculated only for the four regions that are common to both surveys.

Price indexes are calculated by chaining, first from the 50th to the 55th Round, and then from the 55th to the 61st, rather than by jumping in one step from the 50th to the 61st. This method has three advantages and one disadvantage. The advantages are, first, that chain indexes are generally to be preferred in constructing price indexes over time, because they allow the weights to be updated to adapt to changing consumption patterns. Second, the 50th round questionnaire contains a great deal of detail, particularly on purchases through the Public Distribution System, and this detail was largely removed in the 55th and 61st rounds. Matching goods across questionnaires requires a number of approximations, and by chaining, the effects of those approximations are confined to the first comparison, leaving the comparison of the 55th and 61st rounds to be done using questionnaires where the definitions of commodities are close to identical. The third advantage is that having indexes for sub-periods allows a more comprehensive comparison with official indexes, so that if the calculations look different from the official indexes, it is possible to track the divergences to specific episodes. This is important here because previous work reported in Deaton (2007)[79] has shown that the close correspondence between the official and survey-based indexes, which has been a notable feature of previous rounds, broke down after 1999-2000, when the price of food fell relative to the price of non-foods.

[78]This Annex is based on a note prepared by Angus Deaton and the full text is available from http://www.princeton.edu/~deaton. See "Regional prices and poverty in Uttar Pradesh, 1993–94 to 2004–05".Comparison with the official CPIAL and CPIIW contributed by the staff of UP Directorate of Economics and Statistics (DES).

[79]Deaton, Angus S., 2007, "Price trends in India and their implications for measuring poverty," Research Program in Development Studies, Princeton University, September.

The disadvantage of chaining is that there was contamination of in the 55th round that most likely caused some over-reporting of foods. This was because reporting periods of seven and thirty days were placed side by side, so that the thirty day reports, which have been standard in the past and were readopted in the 61st round, were likely reconciled to some extent with the seven day reports, which experimental work has shown to generate a higher reported flow rate of consumption. However, there is no reason to suspect the unit values in the 55th round, and the price indexes will only be compromised if the *composition* of foods was contaminated, since the index does not depend on total food consumption. While it is likely that the reporting problems did make *some* difference to the composition, and thus to the weights of the index, price indexes over time are not very sensitive to their weights. Taking all of this together, the advantages of using the 55th round data outweigh the disadvantages. Note, of course, that this is *only* true for the price indexes, not for the use of the total expenditure estimates to calculate the poverty rates; only the 50th and 61st rounds are used for this in the next section.

The calculated price indexes are shown in Table A2.1. The top panel shows the rural estimates and the bottom panel the urban estimates. Each panel starts with estimates for all of UP (or at least for the four regions that were part of UP throughout the period, excluding Uttaranchal in the 50th and 55th rounds), and then follows with estimates for each of the four regions. The left hand panel shows Laspeyres indexes, so that the comparison of the 55th round with the 50th uses 50th round weights, and the comparison of the 61st with the 55th uses 55th round weights. The right hand panel shows Fisher indexes; these geometric means of Laspeyres and Paasche indexes have a number of desirable properties, including the ability to capture at least some of the substitution that households make in response to changes in relative prices. The official indexes, which are subject to the various caveats listed in the notes to the table, are fixed weight Laspeyres indexes, with weights that are typically much older than those used in my calculations are presented in Table A2.2. There are no official Fisher indexes for comparison.

As is to be expected, the Fisher price indexes are a little lower than the Laspeyres indexes, but the patterns across sectors and regions are very similar to the patterns among the Laspeyres indexes. Official indexes are quite close to the food Laspeyres and Fisher price indexes, although there are some small difference in the rated of inflation across regions.

Table A2.1: Food price indexes, 1994-2005

	Laspeyres		Fisher	
	2000 relative to 1994	2005 relative to 2000	2000 relative to 1994	2005 relative to 2000
Rural				
All UP	159	108	156	108
Western	161	115	159	114
Central	161	114	157	113
Eastern	158	108	155	107
Southern	154	112	153	109
Urban				
All UP	160	114	158	113
Western	163	114	161	114
Central	157	118	152	116
Eastern	162	110	160	109
Southern	160	117	154	114

Table A2.2: CPIAL and CPIIW for four regions of Uttar Pradesh

	All UP	Western	Central	Southern	Eastern
Rural					
1993-94 base					
1993-1994	100	98	105	111	100
1999-2000	161	162	167	165	162
2004-2005	177	179	184	178	172
1999-2000 base					
1999-2000	100	100	100	100	100
2004-2005	110	110	110	108	106
Urban					
1993-94 base					
1993-1994	100	97	103	103	101
1999-2000	157	153	162	157	162
2004-2005	187	186	192	184	186
1999-2000 base					
1999-2000	100	100	100	100	100
2004-2005	119	122	119	117	115

Source: UP DES

A2.2 Prices, poverty lines, and poverty rates

The main interest is comparing trends in poverty rates across the regions of UP. While such trends will not always be invariant to the choice of baseline poverty lines, it is necessary to choose some baseline. One choice is the official poverty lines for urban and rural UP that were used by the Planning Commission to calculate the official poverty rates for the 50th round; 213.01 rupees per person per day in rural areas, and 258.65 rupees per person per day in urban areas. These are updated to the 61st round using the price indexes calculated in the previous section, or at least those price indexes modified to include an allowance for inflation in non-food items. Because there are no unit values for most non-foods, the only source of non-food price indexes is the official CPIIW and CPIAL indexes, which publish both "general" and "food" indexes, together with the weights assigned to each, from which the non-food indexes can be computed, at least for the urban and rural sectors of UP as a whole. For the whole period, from 1993–94 to 2004–05, the rural non-food index so calculated was 1.753, and the urban index 2.011.

Two sets of indexes for updating based on the Laspeyres and Fisher indexes respectively are used. To update the poverty lines, the product of the price indexes for the two sub-periods to get a price index for the 61st round relative to the 50th round is being used. This is combined with the non-food index (which is the same for all regions, but differs across sectors) using the food and non-food weights calculated as the averages of food and non-food budget shares over all households in the 50th round. This is more appropriate for the Laspeyres indexes than the Fisher indexes but, in the absence of an obviously better alternative, the same procedure for both is being followed. Note that, although the non-food component of the overall price index varies only across the two sectors, the food share used to weight it, as well as the food price indexes themselves, vary across both regions and sectors.

Given the overall price indexes and the updated poverty lines for the 61st round, poverty rates for the 61st round are calculated in the usual way, estimating the fractions of the population living in households whose per capita monthly expenditure is less than the updated poverty lines. Except for the restriction to the parts of UP that continue to be in UP, the poverty rates in the 50th round are the same as the official poverty rates, at least for the urban and rural sectors of UP as a whole.

The regional disaggregation is calculated from the 50th round data using the same rural and urban poverty lines for all regions. These baseline poverty lines are not adjusted for interregional price differences. Indeed, it would only be possible to do so for differences in food prices, which are plausibly less important than spatial differences in the prices of other items, such as housing, fuel, or services. In consequences, the poverty estimates here are most useful for comparing interregional poverty *changes* from 1993–94 to 2004–05, rather than the levels.

The two sets of poverty estimates are shown in Table A2.3. At baseline, in 1993–94, the headcount rate in UP was 41.74 percent, with 43.10 in rural UP and 36.07 in urban UP. The Southern region showed by far the highest poverty rate, 68.88 percent overall, 67.36 percent rural, and 74.36 urban. The Western region is the least poor, both urban and rural. Whether the Laspeyres or Fisher updating is used, there is a marked convergence in poverty rates across the regions by 2004–05. In 1993–94, for the whole state, there was a more than 39 percentage point difference between the lowest poverty rate (Western) and the highest poverty rate (Southern). By 2004–05, the difference was only 11 points, and the Southern region was now (very marginally) less poor than the Eastern region. In both urban and rural sectors, there was little poverty reduction in the better-off Western region, only a little in the Eastern region, but substantial poverty reduction in the Central and Southern regions. Overall, there has been a close to 7 percentage point reduction in poverty, but this disguises sharp differences in the rate of poverty reduction across regions, with the sharpest falls in the South.

Table A2.3: Alternative estimates of trends in poverty rate for four regions of Uttar Pradesh 1994-2005

	Laspeyres updating			Fisher updating		
	1993–94	2004–05	change (percentage points)	1993–94	2004–05	change (percentage points)
Rural						
UP	43.1	35.49	-7.6	43.1	34.04	-9.1
Western	29.29	29.05	-0.2	29.29	27.13	-2.2
Central	50.23	32.6	-17.6	50.23	31.86	-18.4
Eastern	48.78	41.37	-7.4	48.78	39.97	-8.8
Southern	67.36	39.43	-27.9	67.36	38.21	-29.2
Urban						
UP	36.07	32.06	-4.0	36.07	31.26	-4.8
Western	31.13	30.7	-0.4	31.13	30.29	-0.8
Central	33.85	26.09	-7.8	33.85	24.67	-9.2
Eastern	38.62	37.83	-0.8	38.62	37.3	-1.3
Southern	74.36	46.02	-28.3	74.36	43.01	-31.4
Rural and urban UP						
UP	41.74	34.82	-6.9	41.74	33.49	-8.3
Western	29.75	29.49	-0.3	29.75	27.98	-1.8
Central	46.76	31.08	-15.7	46.76	30.19	-16.6
Eastern	47.52	40.98	-6.5	47.52	39.68	-7.8
Southern	68.88	40.85	-28.0	68.88	39.25	-29.6

ANNEX 3: DISTRICT-LEVEL POVERTY ESTIMATES IN UTTAR PRADESH, 2005

This annex presents estimates of the headcount poverty rate based on the combined State and Central 61st NSS samples. These estimates are broadly similar to estimates obtained from the Central sample alone – except for the Southern region. In rural and in urban areas of the Southern region, the combined sample estimates are considerably lower (38.9 percent based on the Central sample *vs.* 24 percent based on the combined sample in rural areas and 32.7 percent in urban areas). This indicates an even a sharper decline in poverty than the Central sample estimates alone do. Outside of the Southern region and for both rural and urban areas, estimates based on the Central sample are within the five percent confidence intervals for those based on the combined samples.

Table A3.1: District-level headcount poverty rate in Uttar Pradesh, 2005, rural areas

Region	District	HCR	SE	Region	District	HCR	SE
Eastern		39.00	0.90	Western		24.48	0.93
	ALLAHABA	32.94	2.78		AGRA	12.64	3.46
	AMBEDKAR	37.41	4.76		ALIGARH	27.06	4.89
	AZAMGARH	46.57	3.88		AURAIYYA	33.99	5.54
	BALLIA	51.53	4.30		BAGHPAT	13.68	3.87
	BALRAMPU	29.59	6.56		BAREILLY	25.11	3.49
	BASTI	42.82	4.47		BIJNOR	22.83	3.29
	BEHRAICH	33.94	4.89		BUDAYUN	43.33	4.50
	CHANDOLI	38.88	5.17		BULANDSH	15.99	3.20
	DEORIA	52.01	3.85		ETAH	29.39	4.33
	FAIZABAD	37.72	5.98		ETAWAH	44.54	4.67
	GHAZIPUR	29.20	3.92		FARRUKHA	35.74	5.80
	GONDA	38.62	4.03		FIROZABA	28.35	5.33
	GORAKHPU	36.54	4.07		GAUTAM_B	3.59	1.99
	JAUNPUR	21.27	2.54		GHAZIABA	10.36	3.64
	KAUSHAMB	61.03	5.81		HATHRAS	29.17	5.16
	KUSHINAG	50.98	3.61		J,P,NAGA	13.28	4.17
	MAHARAJG	32.33	4.81		KANNOJ	24.45	4.20
	MAU	48.99	5.88		MAINPURI	12.39	3.76
	MIRZAPUR	54.46	4.67		MATHURA	15.09	5.59
	PRATAPGA	33.41	6.64		MEERUT	17.88	4.57
	SANT_KAB	56.05	4.81		MORADABA	16.57	2.96
	SANT_RAV	29.54	5.49		MUZAFFAR	24.56	4.35
	SHRAWAST	28.13	6.97		PILIBHIT	32.15	5.91
	SIDDHART	34.27	6.00		RAMPUR	20.92	5.51
	SONBHADR	60.97	7.37		SAHARANP	13.60	3.24
	SULTANPU	28.73	2.97		SHAHJAHA	59.54	5.01
	VARANASI	33.12	4.06	Central		28.58	1.24
Southern		24.02	2.53		KHIRI	25.61	3.75
	BANDA	35.21	5.94		BARABANK	11.04	2.60
	CHITRAKO	55.32	9.14		FATEHPUR	29.48	4.24
	HAMIRPUR	27.78	7.94		HARDOI	28.69	3.11
	JALOUN	7.42	2.74		KANPUR_D	22.09	4.48
	JHANSI	9.40	3.32		KANPUR_N	32.36	5.56
	LALITPUR	16.88	9.10		LUCKNOW	31.19	6.09
	MAHOBA	27.68	7.37		RAI_BARE	48.33	2.99
					SITAPUR	34.18	3.88
					UNNAO	22.61	2.76

Rural areas The district of Kaushamb (Eastern region), table A3.1 has the highest headcount poverty rate of 61.03 percent. Meanwhile, the district of Gautam Buddha Nagar (Western region) has the lowest -- 3.59%. The Southern region, which has the lowest headcount poverty rate of all four regions, varies from 7.42 percent in the Jaloun district to 55.32 percent in the Chitrako district. In the Western region, which has the second lowest headcount poverty rate of all regions, the poverty rate ranges from 3.59 percent in Gautam Buddha Nagar district to 59.54 percent in the Shahjaha district. The Central region overtook the Eastern region as having the second highest poverty rate; the Jaunpur district there has the lowest poverty rate of 21.27 percent and the Kaushamb district has the highest poverty rate of 61.03 percent. In the Eastern region which had the highest level of headcount poverty in 2005, the poverty rate spanned from 21.27 to 61.03 percent.

An alternative grouping of rural districts by *mandals* is presented in table A3.2. Among UP's 17 mandals Jhansi had the lowest rural headcount poverty rate in 2005. The mandal with the highest rate was Vindh and Azamg was a close second.

Table A3.2: Mandal-level headcount poverty rate in Uttar Pradesh, 2005, rural areas

Mandal	HCR	SE
1-Sahara	19.63	2.85
2-Morada	18.71	1.93
3-Meerut	13.68	1.73
4-Agra	21.80	1.93
5-Bareil	40.31	2.32
6-Luckno	31.45	1.54
7-Kanpur	31.58	2.14
8-Jhansi	10.86	3.11
9-Chitrk	36.18	3.90
10-Allah	35.97	2.46
11-Faiza	27.72	2.00
12-Devip	33.84	2.64
13-Basti	43.69	2.97
14-Gorak	43.58	2.04
15-Azamg	48.67	2.60
16-Varan	28.62	1.87
17-Vindh	49.14	3.23

Urban areas

The urban area of Kaushamb District (Eastern region), table A3.3 had the highest level of headcount poverty a rate of 70.39 percent. Similarly, just like its rural counterpart, the Gautam Buddha Nagar District (Western region) had the lowest level of headcount poverty, a rate of 3.65 percent. . In the Central region, which has the lowest headcount poverty rate of all regions, the poverty rate fluctuates from 16.97 percent in the Lucknow district to 58.77 percent in the Hardoi district. In the Western region, which has the second lowest headcount poverty rate of all regions, the poverty rate ranges from 3.65 percent in Gautam Buddha Nagar district to 54.82 percent in the Kannoj district. In the Southern region, which overtook the Eastern region as having the second highest poverty rate, Lalitpur district had the lowest poverty rate of 15.83 percent and the Banda district the highest at 60.26 percent. In the Eastern region, which had the highest level of headcount poverty in 2005, the poverty rate ranged from 16.6 to 70.39 percent.

Table A3.3: District-level headcount poverty rate in Uttar Pradesh, 2005, urban areas

Region	District	HCR	SE	Region	District	HCR	SE
Eastern		40.22	1.71	Western		29.92	1.62
	ALLAHABA	30.51	2.97		AGRA	33.29	5.36
	AMBEDKAR	50.02	5.10		ALIGARH	42.75	7.36
	AZAMGARH	59.74	8.08		AURAIYYA	46.14	5.01
	BALLIA	43.09	5.96		BAGHPAT	19.17	7.16
	BALRAMPU	51.06	15.89		BAREILLY	30.10	4.64
	BASTI	24.07	3.66		BIJNOR	25.86	2.86
	BEHRAICH	41.47	5.58		BUDAYUN	51.47	10.16
	CHANDOLI	46.33	5.55		BULANDSH	27.78	2.90
	DEORIA	59.79	3.42		ETAH	41.20	12.59
	FAIZABAD	40.30	7.95		ETAWAH	38.79	9.69
	GHAZIPUR	53.66	13.12		FARRUKHA	47.39	7.25
	GONDA	35.62	7.16		FIROZABA	42.70	6.83
	GORAKHPU	29.24	6.03		GAUTAM_B	3.65	2.03
	JAUNPUR	16.60	5.01		GHAZIABA	21.02	6.32
	KAUSHAMB	70.39	7.42		HATHRAS	37.81	1.38
	KUSHINAG	48.55	6.34		J,P,NAGA	46.46	9.93
	MAHARAJG	45.80	8.10		KANNOJ	54.82	1.03
	MAU	58.75	13.28		MAINPURI	22.97	4.55
	MIRZAPUR	55.38	8.53		MATHURA	34.21	3.23
	PRATAPGA	34.26	5.99		MEERUT	14.99	2.29
	SANT_KAB	63.44	5.28		MORADABA	24.31	2.95
	SANT_RAV	33.11	9.15		MUZAFFAR	28.06	7.48
	SHRAWAST	50.28	12.14		PILIBHIT	46.57	18.52
	SIDDHART	35.96	11.57		RAMPUR	26.96	6.60
	SONBHADR	30.79	5.76		SAHARANP	24.38	14.58
	SULTANPU	35.16	14.28		SHAHJAHA	47.36	2.31
	VARANASI	33.76	4.82	Central		28.30	2.21
Southern		32.68	3.82		BARABANK	43.74	5.80
	BANDA	60.26	13.41		FATEHPUR	46.79	8.57
	CHITRAKO	52.42	12.24		HARDOI	58.77	1.48
	HAMIRPUR	44.97	4.47		KANPUR_D	47.53	5.82
	JALOUN	31.51	8.76		KANPUR_N	23.43	4.63
	JHANSI	18.75	4.81		KHIRI	28.99	13.26
	LALITPUR	15.83	2.64		LUCKNOW	16.97	2.56
	MAHOBA	55.20	7.87		RAI_BARE	45.69	11.48
					SITAPUR	48.52	9.03
					UNNAO	46.96	9.41

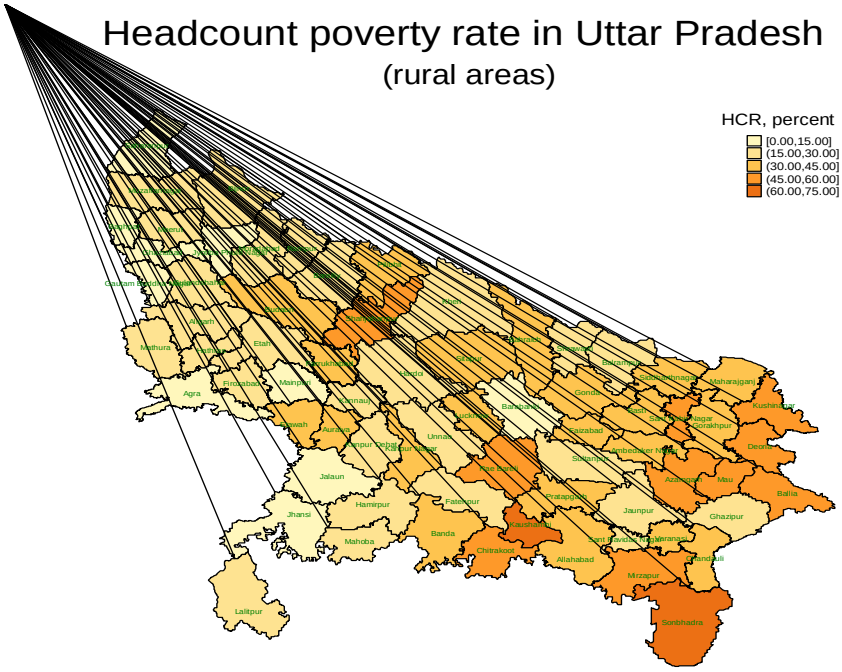
An alternative grouping of urban districts by *mandals* is presented in table A3.4. Among UP's 17 urban mandals, Meerut had the lowest headcount poverty rate in 2005. Mandal Jhansi, which had the lowest rate of rural poverty, ranked second in urban poverty. Azamg had the highest rate of urban poverty and Chitrk was a closed second.

Table A3.4: Mandal-level headcount poverty rate in Uttar Pradesh, 2005, rural areas

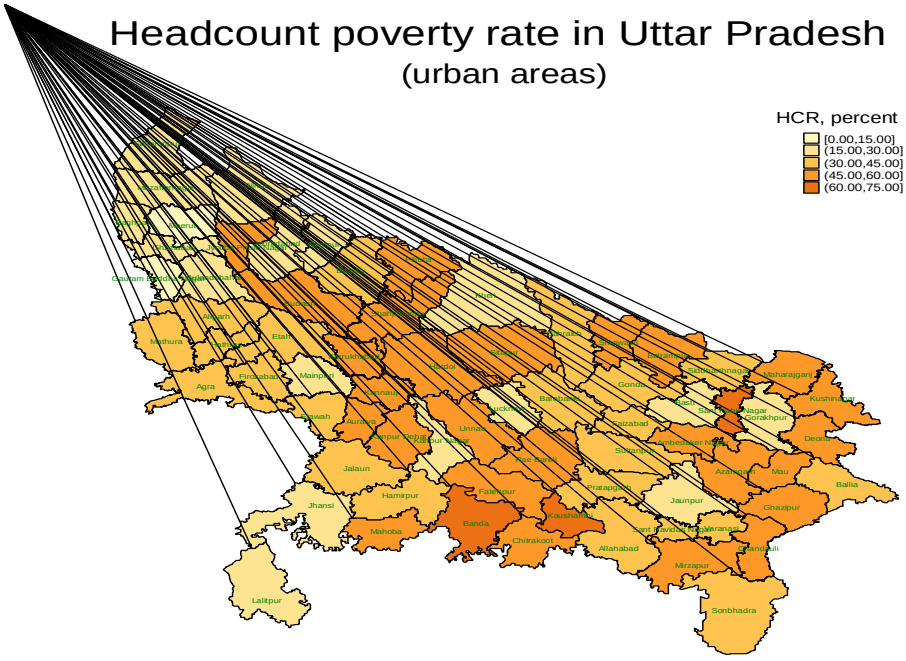
Mandal	HCR	SE
1-Sahara	26.95	6.76
2-Morada	29.10	2.75
3-Meerut	16.60	2.56
4-Agra	37.04	2.94
5-Bareil	39.54	3.64
6-Lucknow	29.67	2.05
7-Kanpur	29.71	3.72
8-Jhansi	22.16	4.20
9-Chitrk	53.46	5.45
10-Allah	35.97	2.73
11-Faiza	42.78	4.11
12-Devip	42.63	5.24
13-Basti	41.43	4.14
14-Gorak	40.33	3.52
15-Azamg	54.81	6.21
16-Varan	34.86	3.74
17-Vindh	41.99	5.55

Variability of the headcount poverty rate among districts within each region is high. In the rural areas, the Western region had the most dispersed district level poverty rates; the Eastern region had the most dispersed district-level poverty rates in urban areas. Figure A3.1 present maps with the headcount poverty rates in the rural and the urban areas of Uttar Pradesh.

Figure A3.1: District-level headcount poverty in Uttar Pradesh



Based on combined State and Central 61st NSS sample. URP, based on 30 days recall



Based on combined State and Central 61st NSS sample. URP, based on 30 days recall

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