

Labour Out-Migration, Livelihood of Rice
Farming Households and Women Left Behind:
A Case Study in Eastern Uttar Pradesh

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Migration is a dynamic process and encompasses diversified forms of temporal and geographic mobility. The types of migration may differ from temporary to permanent migrants, from seasonal to year-long migrants (Afsar 2000). A number of village studies from different parts of India show a sharp increase in population mobility including long-term and temporary migration as well as commuting, particularly from drought-prone locations (Rogaly et al 2001 in West Bengal; Deshingkar and Start 2003 in Andhra Pradesh and Madhya Pradesh; Bhandari et al 2007 in Jharkhand, Chattisgarh, and Orissa). Seasonal migration and commuting provides a route to diversification into non-farm work which is rarely available in smaller, more remote villages, and this helps to spread risks (Deshingkar and Anderson 2007). However, the consequences of temporary and long-term out-migration on rice productivity and on family members left behind, the women, in particular, in the places of origin have not received much attention. In the vast rain-fed areas of eastern Uttar Pradesh, poor women provide 60 to 80 per cent of the total labour inputs in rice production as unpaid family and wage labourers in other farms, aside from their participation in non-rice crops and livestock care. In performing their roles they face several constraints such as lesser

access to land, education, formal credit, training and extension compared to men (Paris et al 1996; Paris et al 2000). Thus, male out-migration will have consequences on the livelihood of rice-farming households in the place of origin and on the roles of women left behind. Remittances may be used to pay for farm inputs including wage labourers employed to compensate for the absence of male family members. If remittances are not large enough, women's workload may increase. In the absence of men, women's responsibilities increase and their roles may shift from unpaid family helper to decision maker. The consequences of male labour out-migration will have implications on rice technologies and on the intended beneficiaries who could sometimes be women farmers. Hence, it is important to understand the needs and constraints of the women left behind to manage farms, to strengthen their abilities and remove the impediments that prevent them from meeting their full potential as rice farmers.

Keeping this view in mind, this chapter attempts to shed light on the questions: What is the incidence of labour out-migration from major rice-producing villages? What is the impact of out-migration on the livelihood of rice-farming households and gender roles? What are the problems of women left behind? This research is part of an extensive study led by the International Rice Research Institute (IRRI) in collaboration with agricultural research universities and institutions in eastern India: Narendra Deva University of Agriculture and Technology (NDUAT) in Faizabad, Uttar Pradesh; Birsa Agricultural University (BAU) in Kanke, Ranchi; Additional Wing of the Department of Agriculture in Kolkata, West Bengal; and Rajendra Agricultural University (RAU) located in Pusa, Bihar.

Methodology

SITE SELECTION

This study was conducted in eastern Uttar Pradesh (EUP) which is popularly known as 'Purvanchal'. Notwithstanding the expansion

of irrigation in recent years, rain-fed agriculture is still of major importance in this region. The agro-ecological conditions are diverse and rice farming is quite risky. Every year, rice crops are subject to floods, submergence and drought. EUP currently has 25 districts and accounts for about 27 per cent of the geographical area of the state. The share of population of EUP in the state population is high at 40 per cent with a population density of 776 persons per sq km. Thus, EUP is one of the densely populated parts of the state. It also has a high incidence of poverty, with 57 per cent of the population below the poverty line, as against 40 per cent for the state in 1991 (NIRD)¹. The proportion of the rural population below poverty line in Uttar Pradesh from 1999-2000 is 31.22 at Rs 336.88 per capita. This is higher than the whole of India at 27.09 (Rs 327.56 per capita)². The rising population pressure and a high share of the rural population have led to a reduction in the average holding size to 0.69 ha in 1990-91. In 1991, 93 per cent of the farms in EUP were below 2 ha,³ with 82 per cent being smaller than 1 ha in size. Both caste and agrarian hierarchies are sharply defined.

Rice is the dominant crop in EUP and accounts for 60 per cent of the rice area of the state. Wheat is the next important crop grown in areas with supplemental irrigation. To address the various biophysical (floods, submergence, drought, salinity) and socioeconomic (marginal size of landholdings, poverty, high illiteracy rates of the population, particularly of women, rigid social stratification, unemployment) constraints in this state, IRRI in collaboration with the Indian Council of Agricultural Research (ICAR) and national agricultural research and extension systems (NARES) dealing with rice research and extension, has been conducting on-station and on-farm research using participatory approach with farmers, both men and women in EUP and other states of eastern India. Research activities focus on germplasm improvement for rice environments which suffer from drought, submergence and salinity and associated improved crop and resource management technologies.

Three districts: Siddarthnagar, Faizabad and Ballia were

selected for the village surveys. Siddharthnagar, Faizabad and Ballia districts differ by ecosystems and level of development. Siddharthnagar is rain-fed, but submergence-prone while Faizabad is partially irrigated and drought-prone. Ballia represents irrigated ecosystems with access to supplemental irrigation facilities (tube wells, canal irrigation and diesel pump). Ballia is most developed; Faizabad is moderately developed while Siddharthnagar is the least developed. The sample villages in Ballia have more access to infrastructure such as electricity and supplementary irrigation. Rice is the major crop grown in these districts:

DATA COLLECTION

This study was conducted in two phases. Phase 1 consisted of focus group discussions with key informants (village leader, teacher, other men and women's groups) conducted in 2000 in fifty rice villages in three districts in eastern Uttar Pradesh (Paris et al 2001). Two blocks from Faizabad and Siddharthnagar districts and one block in Ballia district, were randomly selected out of 11, 13 and 11 blocks respectively. The list of villages from each block was obtained from the village leaders. Ten villages from two blocks of Faizabad and Siddharthnagar and 10 villages from one block of Ballia district were randomly selected to assess the incidence of male out-migration. Thus a total of 50 villages were surveyed in Phase 1 of this study.

Phase 2 included farm household surveys conducted in 2001 using a pre-tested questionnaire. Eight villages from four blocks each from Siddharthnagar (rain-fed) and Faizabad (partially irrigated) with high prevalence of out-migration were selected for the household surveys. Four hundred farming households (200 with migrants and 200 without migrants) were interviewed using a pre-tested questionnaire to assess the consequences of out-migration on rice productivity and on women left behind to manage their farms. In this study, we narrowed down our definition of a migrant as one who moved out from his/her place of residence for a consecutive three months or more.

Incidence of Out-Migration and Characteristics of Migrants

INCIDENCE OF OUT-MIGRATION

The incidence of out-migration is higher among the landless than farming households. This is expected since landless households depend on the availability of jobs during the peak crop operations. Among farming households, the incidence of out-migration is highest in rain-fed villages (60 per cent) followed by the irrigated villages (53 per cent) and partially irrigated (33 per cent). The high incidence of out-migration from the rain-fed villages is due to push factors such as limited size of landholdings, low incomes due to low land productivity and low marketable surplus, lack of employment opportunities in the villages and pull factors such as higher wages in other rural areas, availability of regular employment in cities and strong social networks of migrants (Table 10.1).

Table 10.1 Number of Farming and Landless Households with Migrants

Ecosystems	Farming Households				Landless Households		
	No of Sample Households	No of Households	With Migrants	Rate of Migration	No of Households	With Migrants	Rate of Migration
Rain-fed	20	1381	833	60	45	27	74
Irrigated	10	623	330	53	12	8	69
Partially irrigated	20	2354	782	33	95	45	47
Total	50	4358	1945	45	152	50	53

Source: Paris et al, 2001 (Village surveys).

DURATION OF MIGRATION

Based on the village surveys, out-migration was classified into short-term and long-term in terms of duration of absence from the village.

In short-term (ST) or seasonal migration, male family members leave the villages after land preparation or planting season and come back during the harvest season or after this period while the women manage harvesting and threshing of rice. In long-term (LT) out-migration, migrants are away from their families for more than six months or more than a year. They visit their home once in a year or sometimes occasionally for social obligations. In both types of migration, migrants leave their family members behind but keep close links with them.

A high proportion (61%) of the farming households in the sample villages leave their villages for non-farm jobs on a ST or seasonal migration and LT basis. However, daily commuting was most common in the partially irrigated villages due to the availability of transportation and proximity of these villages to other towns and to Faizabad city (Table 10.2). A study of Sharma (1997) in Bihar concluded that although the phenomenon of seasonal or circular migration of labour has been in existence since long, its incidence has increased significantly only since the early 1970s. De Haan (1997) cited several reasons for stimulating the pattern of circular migration. These are: (a) well-developed transport and communication; (b) due to small size of landholdings, income from work outside the village is used to invest in agricultural

Table 10.2 Labour Mobility of Members of Farming Households by Duration of Absence

Duration of Absence	Rain-fed (Siddharthnagar)	Partially Irrigated (Faizabad)	Irrigated (Ballia)	Average
Daily	12	32	12	22
Weekly/monthly	13	24	16	19
Short term	48	26	42	37
Long term	27	18	30	24
Total	100	100	100	100
No of villages	20	20	10	

Source: Paris et al 2001 (Village Surveys).

production; (c) poor living conditions in the urban areas; (d) irregularity of work because of the migrants' wish to return during the summer season when marriages and other social occasions take place; (e) migrants are mostly men due to cultural restrictions on female mobility outside the household. Men left the women behind, and this provides, perhaps, the most important reason for migrants to return.

CHARACTERISTICS OF FARMING HOUSEHOLDS

A wide variation can be observed in terms of headship of households with and without migrants. As expected, the female headship rate among the migrant households is higher than its non-migrant counterparts in both rice ecosystems. The physical absence of a male member has influenced the gender of the head of the household. In terms of kinship, members of joint families have a greater tendency to migrate, as there are other available family members to rely on for rice operations. In contrast, the proportion of nuclear households is higher among those without migrants. In eastern Uttar Pradesh, caste is a dominant social stratification recognized by society. A higher proportion of the households with and without migrants belong to the Backward Classes because these comprise many castes such as Yadavs, Lonias, Rajbhars, Chaudharies, Kahrs, Kohars (pot makers), and so on. The Backward Classes belong to a lower social hierarchy and have been traditionally used for menial tasks that require a great deal of energy (Table 10.3).

Females from this class are generally engaged in all agricultural activities including rice, non-rice crops or animal management. Hindus dominate in the partially irrigated and rain-fed villages regardless of migration status. However, there are more Muslims in the rain-fed than in the partially irrigated villages. The Muslims in these sample villages are in general less educated, have less access to productive resources and are more conservative followers of their religion. They tend to migrate more at an early age to seek other opportunities as skilled workers. Leatherwork is generally done by Scheduled Caste (Chamars) and minorities. A high

proportion of the households with and without migrants have marginal size of landholdings. Although, in general, the limited size of landholdings pushes the men to seek non-farm employment, not all households belonging to small and marginal farm households send migrants.

Table 10.3. Percentage Distribution of Farming Households According to Socioeconomic Characteristics, Sample Households, Ecosystem and Migration Status

Characteristics	Partially Irrigated (Faizabad)		Rain-fed (Siddharthnagar)	
	WM	NM	WM	NM
No. of sample households	97	100	88	99
Sex of household head				
Male	61	83	80	97
Female	30	17	20	3
Duration of absence				
Long term	76	na	70	na
Short term	24	na	31	na
Type of household				
Nuclear	41	55	47	83
Joint	59	45	53	17
Caste				
Upper Caste	13	15	14	5
Backward	64	61	44	57
Scheduled Caste	14	20	17	14
Minority	9	4	25	24
Religion				
Hindu	80	96	69	60
Muslim	11	4	31	40
Size of landholdings				
Marginal (<1 ha)	87	79	59	78
Small (1-2 ha)	7	11	24	13
Medium (2-4 ha)	4	6	11	2
Large (>4 ha)	2	4	6	7

Na: not applicable; WM: with migrants; NM: no migrants.

WHO MIGRATES AND WHO ARE LEFT BEHIND?

Table 10.4 shows the percentage distribution of family members who migrate and who are left behind. As expected, males constitute an overwhelming majority in both ecosystems. This indicates sex selectivity of the rural out-migrants. Males account for 92 per cent of the out-migrants in the rain-fed villages and 84 per cent of the partially irrigated villages. In the partially irrigated village proportion of sons (40 per cent) and fathers/head (30 per cent) migrants are almost equally distributed. In contrast, in the rain-fed villages, sons (68 per cent) migrate more than fathers/head (13 per cent). Among households with migrants, a higher proportion of females than males are left behind to take care of agricultural and household activities.

Table 10.4. Percentage Distribution of Family Members Who Migrate and Who Are Left Behind

Household Members	Partially Irrigated (Faizabad)		Rain-fed (Siddharthnagar)			
	Household with migrants		Household without migrants		Household without migrants	
	MM	MUB	MNM	MM	MUB	MNS
Husband/head	30	6	13	13	10	16
Son	40	24	25	68	16	24
Other males	14	14	12	9	17	14
Wife	1	16	13	1	19	14
Daughter	1	15	16	1	11	14
Other females	15	26	21	8	33	18
Total	100	100	100	100	100	100
Total no. of household members	183	391	717	187	616	630

MM: migrating member; MUB: members left behind; MNM: members migrating; MNS: members left behind.

CHARACTERISTICS OF MALE MIGRANTS, OCCUPATION, PLACES OF
DESTINATION AND MIGRATION PATTERNS

Our findings as shown on Table 10.5 reveal that able-bodied and young male farmers and labourers (16-40 age group) have a greater tendency to migrate than those from the older age group. LT migrants are better educated than short-term migrants. More than 60 per cent of LT migrants are more engaged in diverse occupations including white collared jobs such as government service (teachers, engineers, pharmacists, peons, gardeners). In contrast, ST migrants are engaged in construction work, industrial work and other non-farm jobs. No ST migrants are employed by the government. These findings indicate that the LT migrants who are better educated have better (regular and secure) employment opportunities. This is in accordance with the hypotheses of Todaro (1969) that educated people who command a higher probability of obtaining long-term employment in the urban labour market are more likely to migrate than the illiterate ones. However, we should also note that a great bulk of ST migrants are illiterate who are engaged in casual jobs unlike most LT migrants who are employed on a regular or permanent basis. It is interesting to note that a high proportion of the migrants from both ecosystems were farmers (landowners) or agricultural workers before they migrated. However, they are engaged in other jobs other than farming in the place of destination. Migrants go to the metropolitan cities like Mumbai and Delhi and industrial cities like Ahmedabad and Surat in Gujarat, Ludhiana in Punjab which have textile industries rather than in other rural areas. One of the main reasons for out-migration to the metropolitan and industrial cities is the strong social network among relatives and friends. The network and social capital of local people is so strong that they are assured of accommodation and job in the place of destination before they leave their villages. Moreover, wages are generally higher in the cities. Migrants are able to save easily and send remittances on a lump sum basis to their relatives.

Table 10.5 Characteristics of the Adult Male Migrants by Duration of Absence and Ecosystems (Per Cent of Adult Males)

Characteristics	Partially Irrigated (Faizabad)		Rain-fed (Siddhartnagar)	
	LT	ST	LT	ST
<i>Age</i>				
16-25	51	17	41	42
26-40	40	60	48	51
41-60	29	20	11	7
>60		3		
<i>Education</i>				
Illiterate	16	20	18	28
Primary (1-5)	11	28	27	26
Secondary (6-8)	24	23	17	30
High school (9-10)	25	10	11	14
Intermediate	13	13	12	2
Graduate (11-14) and Postgraduate (15-16)	19		15	
<i>Occupation in destination</i>				
Construction workers	5	13	11	25
Trade/business	16	24	22	14
Government employee	13		11	
Industrial worker	53	43	35	32
Transport worker	3		6	4
Barber/washerman	2		4	
Other non-farm*	9	20	11	26
<i>Pre-migration occupation</i>				
Owner cultivator	46	57	37	53
Agricultural labourer	19	13	8	26
Construction worker	7	10		7
Trading/business	9	13		5
Government employee	2		2	
Industrial worker	2		2	

Table 10.5 (contd.)

Characteristics	Partially irrigated (Faizabad)		Rain-fed (Siddharthnagar)	
	LT	ST	LT	ST
Transport worker		7	2	4
Student	15		48	5
<i>Place of work</i>				
Metropolitan	48	47	74	95
Industrial cities	42	53	2	4
Urban areas	9		14	
Other countries	1		10	2
Total male migrants	114	28	166	51

* Petty trading, juice selling and cloth selling, etc.

LT - Long term, ST - short term or seasonal out-migration.

Impact of Out-Migration on Income

INCOME SOURCES

Farmers derive their income from diverse sources of livelihood such as farming (sales from rice, non-rice crops, animals, rents from land, animals and machine), off-farm and non-farm activities and remittances. Most often in income analysis, remittances are aggregated under non-farm income. However, since this research focuses on income from out-migration, remittances were separated from non-farm income. Off-farm income refers to the income obtained by male or female household members from wages paid in cash or wages in kind by working as hired laborers in different farm operations in other farms. Non-farm income refers to income received by family members by working within and outside the villages without a change in residence. Earnings from pensions, buying and selling, small business and services and other earnings from household members who commute daily for non-farm jobs are classified under non-farm income (Table 10.6).

FARM INCOME

The proportion of farm income to total household income is higher among non-migrants than those with migrants for both rain-fed and partially irrigated villages. However, rice income comprises a very low proportion (less than 15 per cent) of the total household income in the partially irrigated villages. The low share of rice income is due to small size of rice landholdings, low average yields and low marketable surplus. In contrast, the share of rice income

Table 10.6 Share of Total Household Income, Average Income and Per Capita Income by Ecosystem, and Migration Status

Source of Income	Partially irrigated (Faizabad)		Rain-fed (Siddharthnagar)			
			WM		NM	
	LT	ST	LT	ST	LT	ST
Rice crop	11	13	13	20	20	28
Non-rice crops	25	33	36	13	10	18
Animal	1	2	1	0	1	1
Rents	4	1	4	3	4	2
Off-farm	1	2	2	1	4	6
Non-farm	13	16	44	12	5	45
Remittances	45	38		50	56	
Total	100	100	100	100	100	100
Total farm						
income (Rs/yr)	20,206	18,193	24,497	19,273	14,350	13,168
% of hhd income	41	49	38	35	35	40
Average household						
income (Rs/yr)	49,995	37,362	45,370	53,792	40,911	26,901
Per capita						
income (Rs)	6,075	5,208	6,328	5,453	5,079	4,227

LT: long term; ST: short term or seasonal out-migration; WM: with migrants; NM: without migrants.

to total household income in the rain-fed villages is slightly higher. This is due to the fact that larger areas in the rain-fed villages are under lowland conditions where rice is the major crop grown during the kharif season. The share of non-rice crops to total household income is higher in the partially irrigated villages than in the rain-fed villages due to larger upland areas.

NON-FARM AND OFF-FARM INCOME

The income from non-farm sources is higher in the partially irrigated villages where daily commuters work in Faizabad city. Non-farm income is higher among the households with non-migrants, providing 45 per cent in rain-fed and 44 per cent in rain-fed villages, respectively. Off-farm income contributes less than 6 per cent of the total income, indicating that the opportunities for off-farm employment within the villages are quite few. Agriculture cannot absorb the available labour force in the village particularly during the rabi season.

REMITTANCES

Remittances from migrants comprise a significant share of the total household income. In the partially irrigated villages, remittance income from LT migrants is higher (45 per cent) than ST migrants (33 per cent). In the rain-fed villages, the proportion of remittances to total household income is about 50 per cent. As expected, the average household income of LT migrants is generally higher than ST and households without migrants since the LT migrants have better wages, regular employment opportunities and are better educated. Moreover, LT migrants have established themselves in the place of work. Migrants from the same households (father, son, brothers) pool their savings and send them back to their relatives at home. Pooling the savings makes a difference in the income of the household. On the other hand, because they live together in the same place, they save on expenditures.

USE OF REMITTANCES

In general, remittances help their families left behind to sustain food security, have a pucca house, meet expenses for farm inputs and social obligations. In EUP, social and religious obligations lead to large expenditures. Most of the farming households save some amount from remittances for the marriage of their children and for asset accumulation (farm land and business in the nearby towns of the village). While remittances provide a significant source of income for the migrant households, the impact of migration

Table 10.7 Disbursement and Amount of Remittances Received by Farming Households, by Ecosystem, Migration Status

Disbursement of remittances (per cent)	Partially Irrigated (Faizabad)		Rain-fed (Siddarthnagar)	
	LT	ST	LT	ST
Food	15	16	18	23
House construction	22	6	16	17
Social obligations	12	21	6	8
Farm inputs	18	15	11	9
Savings	8	14	24	22
Education	7	6	4	2
Medicines	5	6	7	5
Clothing	9	11	9	8
Credit payment	3	2	1	2
Miscellaneous	6	3	5	3
Total	100	100	100	100
Monthly income (Rs)	5,023	3,313	5,314	4,050
Amount of remittance sent monthly (Rs)	1,874	1,033	2,300	1,919
Per cent of remittances sent to the village	37	31	43	47

LT: long term; ST: short term or seasonal out-migration.

depends on the size and use of remittances. Migrants in general send their remittances through banks, trusted friends or by other family members according to the need of the household. Despite the earnings from remittances, less than 50 per cent are sent to their families as they have to spend for their board, lodging and other personal expenses in the workplace (Table 10.7).

The wide range of impact of remittances in rural areas has been illustrated in a study in northern Philippines which showed that: (a) remittances from international migration were invested in house construction, paying large debts (plane fare and agent's fees), farm land and livestock, consumer durables goods and children's college education; (b) remittances from domestic migration were mainly spent on food. The rest were spent on daily expenses, children's education, health care, and farm inputs such as hired labour. In the Philippines, families in the rural areas invest in children's education as a way out of poverty (Luis and Paris, 2003).

Investment on Household Assets

HOUSING

Remittances from male out-migration have a favourable impact on the living status of the household in the rural areas. The type of house is a visible indicator of prosperity mostly coming from remittances from migrants. In partially irrigated and rain-fed villages, the proportion of households with migrants who have pucca houses is higher than those without migrants. In the partially irrigated villages, the proportion of households with brick walls and thatched roofs is slightly higher among households with migrants (20%) than those without migrants (10%) (Table 10.8).

CONSUMER DURABLE GOODS AND TRANSPORT

Remittances from out-migration have a favourable impact on the household durable goods (radio/tape recorder, television and electric fan). However, the proportion of households without

migrants in the partially irrigated villages with stove/gas connection is slightly higher (27%) than those households with migrants (25%). Male family members in the partially irrigated villages have greater access to stove/gas cylinders nearby towns of Faizabad. In the remote rain-fed villages, households have less access to stove/gas connection, except of a few households with migrants. A higher proportion of the households with migrants in both villages have sewing machines (Table 10.8).

Table 10.8 Percentage Distribution of Farming Households by Type of House and Ownership of Consumer Durable Goods by Ecosystem and Migration Status

Characteristics	Partially irrigated (Faizabad)		Rain-fed (Siddharthnagar)	
	WM	NM	WM	NM
<i>Type of house</i>				
With mud and thatched roof	23	30	22	32
Brick wall and thatched roof	16	20	3	3
Pucca (cemented)	62	49	77	64
Hut (wall made up of brick or mud)		1		2
<i>Consumer durable</i>				
Radio/tape-recorder	69	55	36	25
Television	32	26	11	2
Electric fan	52	32	19	8
Air cooler	2	3	2	1
Stove/gas connection	25	27	8	3
Electric iron	25	17	8	3
Sewing machine	16	10	7	2
Bicycle	100	100	87	90
Motorecycle	10	13	10	4

WM: With migrants; NM: without migrants.

Impact of Out-Migration on Rice Farming

ADOPTION OF MODERN VARIETIES (MVs) AND RICE PRODUCTIVITY

As shown in Table 10.9, farmers in the rain-fed villages grow only rice during the kharif season; in contrast, farmers in the partially irrigated villages grow other crops apart from rice. Within the same ecosystem, rice was planted by households with migrants in a higher proportion (80%) of the area while households without migrants planted rice in 68 per cent of the area. Across ecosystems and migration status, farming households have less than a hectare to cultivate, on the average. The extent of use of HYVs seeds is independent of the households' migration status in the partially irrigated villages where farmers grow only modern varieties due to their greater access to supplemental irrigation. In the rain-fed villages, farmers still grow traditional rice varieties because these are more resistant to floods. Here, farmers grow 'Kalamanak', an aromatic rice which commands a premium price. Moreover, farmers in the rain-fed villages prefer fine grain type for consumption and for the market and local varieties which do not require fertilisers and are less at risk during the rice season.

Table 10.9 Percentage Distribution of Area Planted to Rice during the Kharif Season, by Ecosystem and Migration Status

Descriptors	Partially Irrigated (Faizabad)		Rain-fed (Siddarthnagar)	
	WM	NM	WM	NM
Total cropped area (ha)	55.37	68.56	85.43	74.00
Per cent of rice to total cropped area	79.60	68.12	99.02	99.70
Average own farm size (ha)	0.54	0.68	0.75	0.58
Per cent of rice area planted to MVs	100	100	74	74
Average MV yields (tonnes/ha)	3.32	3.46	2.93	2.88
Average TV yields (tonnes/ha)			2.07	1.90

WM: with migrants; NM: without migrants.

There seems to be not much difference in rice yields between households with and without migrants because of the marginal size of landholdings and management on the same ecosystem. Average yields of modern varieties (MVs) are 3.3 and 3.5 tonnes per hectare for with and without migrants in the partially irrigated villages. In contrast, average yields of MVs are lower at 2.9 tonnes/ha and 2.8 tonnes/ha for migrants and without migrants, respectively, in the rain-fed villages. Rice yields of local varieties are only about two tonnes per hectare for households with and without migrants in the rain-fed villages. These findings indicate that despite male absence among households with migrants, those who are left behind, particularly the women, continue to manage the farms and maintain rice yields at par with those households with migrants despite several stresses and constraints they face as they perform their household and farm-related responsibilities, including supervision of hired labourers.

INVESTMENT ON IRRIGATION FACILITIES

Farmers classify their lands into upland (including medium land) and lowland depending on water stagnation. Uplands have lighter soils which are prone to drought. On the other hand, lowlands are poorly drained and the crops are subjected to submergence particularly during the wet season. The partially irrigated villages have more upland than lowland areas. In contrast, the rain-fed villages have more lowland areas which are prone to submergence. In partially irrigated villages, both households with migrants and without migrants have access to supplementary irrigation either on their own or on a rented basis. In contrast, in the rain-fed areas, only a few farmers have diesel pumps which they use for irrigating rabi crops. Farmers who have diesel pumps draw harvested/stored water from ponds. Canal (minor drain) is also an important source of water during the rainy season. There is a big pond located in this village where water is harvested during rainy season.

A low proportion of the farming households with migrants in the partially irrigated villages invest on irrigation facilities (Table 10.10), and one of the reasons is the high cost in installing these

facilities. One diesel boring with pump costs Rs 15,000 to Rs 20,000. Farming households would rather rent water, using electric pumps at Rs 210/month for 5 HP and diesel pumps for Rs 28/litre. More farmers in these partially irrigated villages have greater access to irrigation facilities due to government subsidy, especially for lower caste farmers. Government tube wells (electric) are only available in partially irrigated villages, but it is not reliable because of frequent power failure and only a few farmers benefited from the use of government tube wells. A higher proportion of the households without migrants invest on their own diesel pumps and rent electric tube well and diesel pumps. In contrast, farmers in the rain-fed villages do not invest their own irrigation facilities particularly for rice production.

Table 10.10 Percentage Distribution of Farming Households by Access to Irrigation Facilities, Ecosystem and Migration Status

Access to irrigation	Partially irrigated (Faizabad)		Rain-fed (Siddharthnagar)	
	WM	NM	WM	NM
Own electric tube well	10	5	1	
Own diesel pump	17	27	3	6
Rented electric tube well	13	17	0	0
Rented diesel pump	37	31	6	5
Government tube well	7	6		1
Strictly rain-fed (none)	5	5	70	76
Canal	7	7	20	10
Others	2	2		2
Total	100	100	100	100

WM: with migrants; NM: without migrants.

Impact of Out-Migration on Women Left Behind

Rural-to-urban labour migration may be beneficial to the farm households through migrants' remittances which may be used to invest in the land, to acquire more land or to hire labour. However,

besides reducing the available labour supply on the farm, migration may also have a negative effect on food production and security. In fact, it has been recently argued that the effects of rural to urban migration on food production may be amplified as a result of the way family labour is divided by gender and age. Men may not be available for ploughing and other male-dominated tasks which are both time- and energy-intensive. For women, this translates into a marked increase in agricultural work, including a wide range of farm tasks, a heavier workload, and less time for domestic tasks and child care. With a diminishing supply of male labour to share farm tasks, women must either depend on hired labour (which many cannot afford) or resort to limiting agricultural operations. For example, if women have problems in hiring and/or supervising labour, the ploughing may be undertaken less frequently or on less land (Palmer 1985; Mencher 1989; Krishnaraj and Chanana 1989).

CHANGE IN GENDER DIVISION OF LABOUR AND INCREASE IN WOMEN'S WORKLOAD

As explained by the women, there has been a slight change in the gender division of labour before and after migration. In the partially irrigated villages, pulling of seedlings, transplanting, weeding, harvesting, threshing, winnowing and storing grains and seeds are traditionally women's tasks. In contrast, in the rain-fed villages, male and female family members share the work except for seedbed and land preparation. Males pull the rice seedlings from the seedbeds while females do transplanting. Weeding is not commonly done. Men and women harvest while tractor is used for threshing rice. However, in the absence of males, the workload for women among nuclear households increased as they have to take over many male-specific activities like pulling seedlings, carrying seedlings to the puddle fields, carrying the harvest to the threshing floor and spreading the harvested rice stalks straw on the floor.

The majority of the farming households depend on hired tractors to prepare the land. Tractors for hire are available within

the village or from the nearby villages. However, during the peak period of preparing the land, it is difficult for women to contact the tractor owner to other villages and search for the tractor owner/driver. **Simone**, the wife of a tractor owner, said that most of the activities such as land preparation, seed bed preparation, irrigating the fields (operating the diesel pump/machine) and threshing (if done by tractor) are mainly men's jobs they face a lot of problems when their husbands are away on long-term basis. As remarked by a wife of a migrant labourer:

'I hire labour for land preparation and wheat threshing by machine. I make the decisions in the household and in the farm with the consent of my husband. If remittances do not come on time, I work as a hired labourer in the field of the tractor owner as exchange labour. If the tractor owner prepares my fields, I compensate his oxen by planting and weeding in his fields. Thus even if my husband is absent, I try to manage my farm using my own labour and try to maintain rice production. This has increased my workload.'

Women labour

'Although we have so many benefits from our husband's remittance, we have more work. For example, before my husband used to manage our farm while I helped in planting, weeding and harvesting. Now I have additional responsibilities of managing our farm. As I am taking care of household chores and my young children, I have to supervise hired labour. My younger daughter takes care of the younger siblings when I work in the field. In times of need, I seek the help of my neighbours and friends. Despite the increase in my work burden, I sacrifice because we need the remittance to buy farm inputs and pay for other expenditures. If my husband did not migrate, we could have been poorer. Migration has benefited our family and my husband will continue to work in another place as long as he can.'

The increase in women's agricultural workload when men moved to the cities was also found by Jetley (1987). She revealed that the

woman who remains behind has to assume, in addition to her own familial and domestic responsibilities, the role of sole breadwinner: the older daughter takes over the household chores and plays the role of a 'hide surrogate mother' to her brothers and sisters.

THERE IS HIGH DEMAND FOR UNPAID FEMALE FAMILY AND EXCHANGE LABOUR

As shown in Table 10.11, female labour contributions to total labour inputs in rice production are generally higher than men regardless of migration status. However, the contributions of female family members among households with migrants are higher than those without migrants indicating the dependency on unpaid female members to work on their fields and as exchange labourers in others' fields. As remarked by the women: 'We do most of the rice operations anyway, so it is better that the men leave and earn income elsewhere.'

GREATER DECISION-MAKING AUTHORITY OF WIVES LEFT BEHIND

When men migrate, do women have a greater participation in decision making in the farm and household? If remittances are sent to women family members, this may increase their status and control. However, this may not occur if a male relative handles bank accounts. In almost all of the cases, when sons are the migrants, the husbands receive the remittances. However, in nuclear households, the wives receive the remittances so they bear the responsibility of budgeting these earnings between food and other daily expenditures. As shown in Table 10.12, in almost all areas of decision making the husbands are the primary decision makers whether households have migrants or not. However, within migrant households, wives have a greater participation in decision making compared with the wives in the non-migrant households on farm-related responsibilities such as what crops to grow, time and amount of fertiliser to apply, time to irrigate the fields, when to hire labour, how much money to invest on capital goods, and

Table 10.11 Percentage Contribution of Males and Females by Source of Labour, Modern Varieties, by Level-system and Migration Status

	With Migrants				Without Migrants			
	Male (%)	Female (%)	Children (%)	Total Person Days	Male (%)	Female (%)	Children (%)	Total Person Days
Partially irrigated (Faizabad)								
Family	19.44	78.54	2.02	93.11	28.52	69.25	1.53	97.04
Exchange:	10.70	89.30		13.81	7.01	92.00		11.56
Hired	9.10	90.90		29.73	0.00	91.00		31.00
Total (person days)				136.65				139.60
Rented (Siddharthgarh)								
Family	41.89	56.84	1.27	51.43	48.23	50.30	1.47	66.04
Exchange:	18.11	81.89		2.54	21.21	78.79		6.00
Hired	33.98	66.02		23.60	22.65	77.34		10.81
Total (person days)				80.58				83.46

Percentages are based on the person days per hectare by operation. Percentages on rows add up to 100 per cent.

how much money to spend on farm inputs. Among households with migrants, wives have greater decision-making authority than husbands on what rice variety to grow for the next season and how much money to allocate on food. Aside from providing physical labour in rice production as unpaid family and exchange labourers, women have additional responsibilities as managers when they supervise hired labourers and make farm decisions. Males' dominance in decision making was also observed by Jetley (1987) who revealed that in spite of long absence of males there is little change in the authority structure of the family, and major decisions regarding purchase of household item, cattle, inputs or land, credit, expenditures on ceremonies, and so on, are postponed till the migrants' visit. Women, however, take decisions on problems regarding the daily subsistence of the family, and keep it from slipping into deeper poverty. Whatever wages (though it is in money form) the women get are treated as 'use value', because women's wages are seen as merely helping the subsistence of the family. When women engage in labour-exchange arrangements, because it does not get money wages, this is similarly treated. Men's wages on the other hand are seen as a concrete addition to family income. For instance, the migrants' remittances have exchange value. Thus the power base remains with the males. Thus it is a question of valuation.

Constraints of Women Left Behind

Women, particularly from nuclear households, face several constraints in rice farming. These are lack of access to technical knowledge related to new methods of farming including new seeds; lack of access to improved varieties which are tolerant to drought; and subjugence and personal problems. Narratives were collected from these women and most of their common responses are presented as follows:

LACK OF ACCESS TO TECHNICAL KNOWLEDGE

'Before my husband's migration, I have been engaged in rice farming such as transplanting, weeding, harvesting and threshing. I still do

Table 10.12 Decision-Making Authority within Farming Households (Per Cent of Responses)

Decisions	With Migrants			Without Migrants		
	Husband	Wife	Others	Husband	Wife	Others
Crops to grow in the field	58	28	14	84	4	12
Rice variety to use for next season	31	43	26.0	46	14	40.0
Time and amount of fertiliser to apply	54	34	12	84	4	12
Time to irrigate	51	36	13	83	4	13
When to hire labour	47	40	13	70	11	19
Expenses on children's education	50	14	36	76	4	20
How much money to invest on capital goods	55	26	19	78	3	19
How much money to spend on food	33	50	17	52	27	21
Amount of rice to store	15	65	20	17	59	24
How much money to spend on farm inputs	56	28	16	79	4	17

the same tasks after he migrated. When he was around, I never bothered to know more about the crop care such as amount of seeds to use, timely use of fertiliser and pesticides. But now, when there is something wrong with my rice crop I feel helpless because I do not know much about new methods of farming.'

LACK OF ACCESS TO NEW SEEDS

Every year farmers are faced with submergence or drought so that the labour farmers had invested on rice production is often wasted. As one woman said, 'We need new rice seeds which can survive despite the drought or too much water. I usually ask my neighbour and exchange new seeds with them.'

RESTRICTIONS OF MOVEMENT FAR AWAY FROM HOME

'Because some of our rice fields are located away from my home, it is difficult for me to supervise and take care of the crop. I am forced to rent it out to other farmers who are not very much concerned about the productivity of the land or I completely abandon the land, thus losing the potential yields we could have harvested for our consumption.'

LABOUR SCARCITY AND INSECURITY

'Because of my husband's migration, my life became miserable. My husband migrated more than two decades ago to work as a temporary labourer in Nepal, which is near our village. At that time, my in-laws were alive and hired labourers who did farming because traditionally we are upper caste women and are restricted to work in our own fields. After the death of my in-laws [17 years ago] I had to take care of our farm aside from managing the daily household chores. I also hired other women [my neighbours] from the lower caste to transplant, weed and harvest our crops. Since I faced problems in hiring labourers during the peak crop seasons, I had to rent out the fields to other farmers in both seasons. Before, my husband used to visit us often whenever he could get leave from his employer. But after sometime his visits home became fewer and fewer and the remittances he sent became smaller and irregular. Later on I learnt that he has another wife in Nepal and has abandoned us.'

In reality, women were more resentful and apprehensive of the burden of managing on their own [Karlekar 1995]. The longer the duration of stay of the migrant in the city and the greater the distance between his home and place of work, the weaker were his ties with his rural family and the greater the insecurity of the woman at home.