



Understanding the linkages between migration and household food security in India

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Abstract

This paper argues for the need to integrate migration in future food policy research and practice and, in doing so, examines the role of internal migration as a livelihood strategy in influencing food security among rural households. Migration has become a key component of livelihood strategies for an increasing number of rural households across the developing world. Importantly, there is emerging consensus among academics and policy makers on migration's potentially positive effects in reducing poverty and promoting sustainable human development. Concurrently, the significance of the catch-cry 'food security for all' as an important development objective has been growing, particularly since the 2007–08 global food crisis. However, academic and policy discussions on these two issues have tended to proceed largely in silos, with little attention devoted to the relationship they bear with each other. Using primary survey data collected from 392 rural households from a district in western Bihar in India, this paper seeks to fill this gap in relational dynamics. It first reviews plausible reasons for this disconnect between migration and food security in the wider developing countries' context, and then draws on a primary survey of rural Indian households to provide empirical household-level insights on the linkages between people's movements and households' capacity to secure food. In particular, the paper focuses on the often-overlooked role of migrants' remittances for food security of rural households at points of origin. The findings show that, by equipping households with improved purchasing power and enabling investment in agriculture, remittances contribute positively to household food security.

Keywords *livelihoods; remittances; migration; food security; food policy; India*

Introduction

This paper examines the role of migration as a livelihood strategy in influencing food security among rural households. Migration has become a key component of livelihood strategies of increasing numbers of rural households in many developing countries, with overwhelming evidence that remittances are positively tied to the wellbeing of the migrant-sending households (Cohen, 2011; United Nations Development Programme, 2009). In the past few years, leading international organisations

have therefore lent unequivocal institutional backing to encourage migration as a potential tool to reduce poverty and promote sustainable human development (Department for International Development, 2007; United Nations Development Programme, 2009; World Bank, 2009). More recently, after having been sidelined in the Millennium Development Goals (MDGs), its successor, the Sustainable Development Goals (SDGs), recognise the positive contribution of migrants, and migration and mobility have been included in four of the 17 SDG targets (International

Organization for Migration, 2015). Concurrently, the significance of the catch-cry 'food security for all' as an important development objective has been growing, particularly since the 2007–08 global food crisis. Recent estimates suggest that access to adequate food remains a distant reality for 795 million people (Food and Agriculture Organization, 2015). The sheer magnitude of hunger has warranted calls for effective action on hunger reduction, and SDG two envisages ending hunger and food insecurity by 2030 (United Nations, 2015, p.17). However, barring a few notable exceptions (Craven & Gartuala, 2015; Crush, 2013; Zezza *et al.*, 2011), discussions on these two issues have tended to proceed in silos, with little attention devoted to the relationship they bear with each other, despite the fact that linkages between them are obvious, and there exists 'a massive institutional and substantive disconnect between these two development agendas' (Crush, 2013, pp.61–62). Three possible reasons for this disconnect, also highlighted by Crush (2013), follow.

First, discussions on the development impacts of migration and remittances have tended to focus on the international more than on internal migration. This bias is further augmented in recent years by continually rising international remittance flows to developing countries. International remittance flows to developing countries increased from US\$159 billion in 1995 to US\$436 billion in 2014, and the current levels of remittances received by developing countries is nearly three times as much as their receipts of official development assistance (World Bank, 2011; 2013; 2015a). Household food security outcomes are certainly influenced by international remittances. For instance, in El Salvador, de Brauw (2011) found that during the food price shocks of 2007–08, young children in households with access to international remittances witnessed declines in their nutritional status lower than those for children residing in households without international migrants. However, from the perspective of migration-food security relationship internal migration is far more significant than international migration. Relatively greater barriers on international mobility mean that international migration remains beyond the reach of a large majority of rural populations of the developing world. The number of people moving within national boundaries is estimated at 740 million, nearly four times as many as international migrants, estimated at 200 million people (United Nations Development Programme, 2009, p.1). The sheer volume of internal migration suggests

that the development-enhancing potential of remittances from this form of mobility is perhaps more significant than the international migration (Deshingkar & Grimm, 2005, p.8). Available evidence on the significance of domestic remittances suggests the same. For instance, a study by Castaldo *et al.* (2012) found that in India and Ghana internal migrants and domestic remittances outnumbered international migrants and their total receipts, with potentially significant human development impacts. For India alone, in 2007–08 internal remittances amounted to US\$10 billion, and 30 per cent of all household expenditure was financed by these transfers among remittance-receiving households (estimated at 10 per cent of all rural households in India) (Tumbe, 2011). Systematic research on the direct role of remittances in influencing rural households' food security is scarce however.¹

Second, in migration research there has recently been a tendency to treat migrants as separate entities at destinations (Hewage *et al.*, 2011), which ignores the origin–destination linkages that migration creates. Indeed, in many countries of Asia and Africa, which account for much of the global burden of food and nutritional insecurity (Food and Agriculture Organization, 2015), migration is not always a one-time, permanent move—far from it. Circular mobility dominates migration patterns (Bremner, 2010; Potts, 2010), with migrants making periodic visits to places of origin, maintaining close relations with family, and sending home remittances that are crucial for the food security of members at places of origin (de Haan, 2002). Remittances do not always flow from migrants to origin households, but are bi-directional. In Harare, Zimbabwe, for instance, the predominant flow of resources is now from rural households to their urban members, which helps the latter to cope with income shocks in uncertain urban labour markets (Tawodzera, 2010). Migration thus represents a joint household strategy, and the dispersion of member(s) across different activities and locations helps households attain a diversified livelihood portfolio (Stark, 1991), and avoid risks to their income and food security.

Third, the view that rural households comprise members who solely depend on farming, although fading, prevails in rural development thinking (Rigg, 2006). The problem of rural food insecurity is therefore often viewed as a problem of land and agriculture and the solution; therefore, to strengthen food security among the rural populace is thought to lie in improving the gains

of farm-dependent livelihoods. However, research across a range of countries suggests growing diversity of rural livelihoods, with non-farm, non-local, migration incomes becoming increasingly more central to rural households and livelihoods (Barrett *et al.*, 2001; Bryceson, 1997; 2002; Deshingkar & Farrington, 2009; Deshingkar & Start, 2003; Ellis, 1998; 2000; Foster & Rosenzweig, 2004; Reardon *et al.*, 2001; Rigg, 2006; Shariff & Lanjouw, 2004; Wilson, 2013). Indeed, the extent to which land and agriculture facilitate household's food security needs is often contingent upon income from non-farm sources (Iheke, 2014; Konseiga, 2004; Owusu *et al.*, 2011; Reardon, 1997).

Against this backdrop, this paper highlights the role of internal migration as a livelihood strategy in influencing food security among rural households in India, the country with the most underfed people in the world (Food and Agriculture Organization, 2015), and considers where internal migration remains a central feature of rural lives and livelihoods. The focus of this study is specifically on *food access*, and accordingly food security is defined here as the ability of households to command access to food.² Using a case-study approach involving primary survey data collected from a sample of 392 rural households from the high outmigration district of Siwan in eastern Indian state of Bihar, the contribution this paper makes is to present empirical evidence on the often-overlooked role of migrants' remittances in food security of rural households at the origin. The empirical evidence shows that remittances play an important role in rural households' food security by improved purchasing power and enabling investments in land and agriculture in places of origin.

The Indian context: importance of insights on migration-food security nexus

India accounts for highest burden of chronic undernourishment. According to the most recent statistics by the United Nations' Food and Agriculture Organization, between 2014 and 2016 the number of undernourished people in India was estimated to be 194.6 million, representing a quarter of the total undernourished people in the world (Food and Agriculture Organization, 2015, pp.44–47).

In past two decades, the Indian economy has grown at remarkable rates. And yet, contrary to international experience, the impact of high economic growth in improving the food and

nutrition security of India's population has been rather minimal. This rather weak negative correlation between economic growth and food security in India has led the country to be described as a food security enigma (Gillespie & Kadiyala, 2012; Headey *et al.*, 2011; Pritchard *et al.*, 2014; Ramalingaswami *et al.*, 1996).³ Although the keys to understanding this enigma lie in a complex set of social, economic, and political reasons (for example, caste hierarchies or gender-discrimination), the failure of economic growth to make a significant dent on food insecurity is also because the benefits of faster economic growth have largely bypassed a large proportion of India's poor, particularly those residing in the rural areas of the country.⁴ Economic growth has been highly urban-centred, which is throwing down a new set of challenges for rural food security.

Although agriculture still employs close to half of India's total labour force, its share in the national income has declined continually—from 33 per cent of the GDP in 1990–91 to 15 per cent in 2009–10—and with it, the fortunes of agriculture-based livelihoods. Nearly 27 million people withdrew from agriculture between 2004–05 and 2011–12 (Mehrotra *et al.*, 2013, pp.87–88). Furthermore, the urban-centred nature of economic growth since the early 1990s has further weakened agriculture as an effective source of income and food security for rural Indian populations; indeed, there exists an agriculture–food security disconnect in India (Gillespie & Kadiyala, 2012; Headey *et al.*, 2011).

Most rural households constitute smallholder farmers: 85 per cent of landholdings in India are less than two hectares (Ministry of Agriculture, 2014, p.6). Furthermore, nearly 42 per cent of households in rural India do not own any agriculture land (Rawal, 2008, p.45). Thus, for landless and land-poor households of India, wage income forms a central component of household income. However, the low level of economic activity in rural areas means these wage options are often pursued in the distant labour markets. Thus, migration constitutes an essential component of rural livelihood systems in India.

The predominant stream of migration in India has involved rural-to-rural migration of labour. However, rising levels of stress on agriculture-based incomes and livelihoods⁵ and the urban-centric nature of economic growth combine to change patterns of migration, with rural to urban migration rising in significance. During 2007–08, migration to urban areas grew at the rate of 3.5 per cent while the growth for rural areas was 2.6

per cent (National Sample Survey, 2010, p.22). Another defining characteristic of rural–urban migration in India is its seasonal and circular nature, which constitutes a significant bulk of migratory movements. Using the nationally representative National Sample Survey data, Keshri and Bhagat (2012) estimate that temporary migrants in India account for nearly 13 million people. The official data agencies, however, barely capture the true extent of temporary moves. Alternative informal estimates indicate that between 40 million (Bremner, 2010, p.10) and 100 million (Deshingkar & Akhter, 2009, p.3) people remain on the move for their livelihoods in any given year. Recent research across a range of countries, including India, suggests that income from migration can provide a route out of poverty (Deshingkar & Grimm, 2005; Deshingkar & Start, 2003; Department for International Development, 2007), and potentially contribute to enhanced human development outcomes (Deshingkar & Akhter, 2009; United Nations Development Programme, 2009).

Either way, existing research on whether and how migration influences household food security in India is virtually non-existent. Using a case-study approach, involving primary household-level surveys with rural households in India, this paper highlights the role of remittances as an alternative income source in influencing rural households' ability to access food.

The survey

The commentary that follows uses the data from a primary survey conducted between January and May 2012 in 10 villages of Siwan district in eastern Indian state of Bihar (Figure 1). Located in the Indo-Gangetic plains, Bihar is among the poorest Indian states. In 2009–10, 53.3 per cent of the state's population was classified as living below the official poverty line (Planning Commission, 2012). Lack of gainful employment opportunities and persistence of extreme poverty force a large majority of households to migrate to other states in search of livelihood. Within Bihar, the western district of Siwan was selected for field research because it had high incidence of inter-state outmigration.⁶ In 2011, Siwan had a total population of 3.14 million people in a total land area of just 2,200 square kilometres—population density of 1,495 persons, which was more than three times as much as that of India. The level of urbanisation in Siwan remains unusually low, with close to 95 per cent of the population currently

living in the rural areas (Government of Bihar, 2014a; 2014b; Registrar General of India, 2011a). This combination of high population density and low urbanisation makes it one of the poorest districts of India.

The district has been identified as one of the 69 most backward districts of India facing acute deficits in living standards, food security, education, and health care outcomes (Debroy & Bhandari, 2003). Deprived of any major industrial activity, local livelihoods in Siwan are heavily reliant on agriculture, with more than 60 per cent of the district's population working as either own-account cultivators or agricultural labourers (Registrar General of India, 2011b). However, high population pressures on land imply that the average landholdings are exceptionally small in size. Consequently, a large majority of the district's population depends on wage income options pursued in distant labour markets, usually to urban centres in other Indian states. Migration from the district is largely of circular nature, and is undertaken predominantly by men.

The survey covered a probabilistic sample of 392 rural households, including 197 migrant household (defined as households that had at least one member who worked outside the village for 60 days or more in the past year) and 195 non-migrant households (households without any migrant members) spread across 10 villages of Siwan district.⁷ From each sample village, 20 migrant and 20 non-migrant households were selected for the survey using systematic circular sampling; however, eight households chose not to participate in the survey. Prior to the survey, household migration particulars were obtained through a house-listing exercise, which served as a basis for drawing the sample. The selected households were administered a structured questionnaire which collected information on household's social status, agricultural, and non-agricultural livelihood portfolios, income, expenditure and assets, saving and investment, debt burden, and food security.

The house-listing was carried out during January and February 2012, and household surveys were conducted during April and May of the same year. The reference period was April 2011 to March 2012, and all the data reported in this paper pertain to that period. Table 1 presents some of the socioeconomic characteristics of surveyed households in Siwan by migration status. (Through the village surveys, information was also obtained from origin households about migrant members living in the destinations. In total, there were 280 migrants belonging to 197 sample

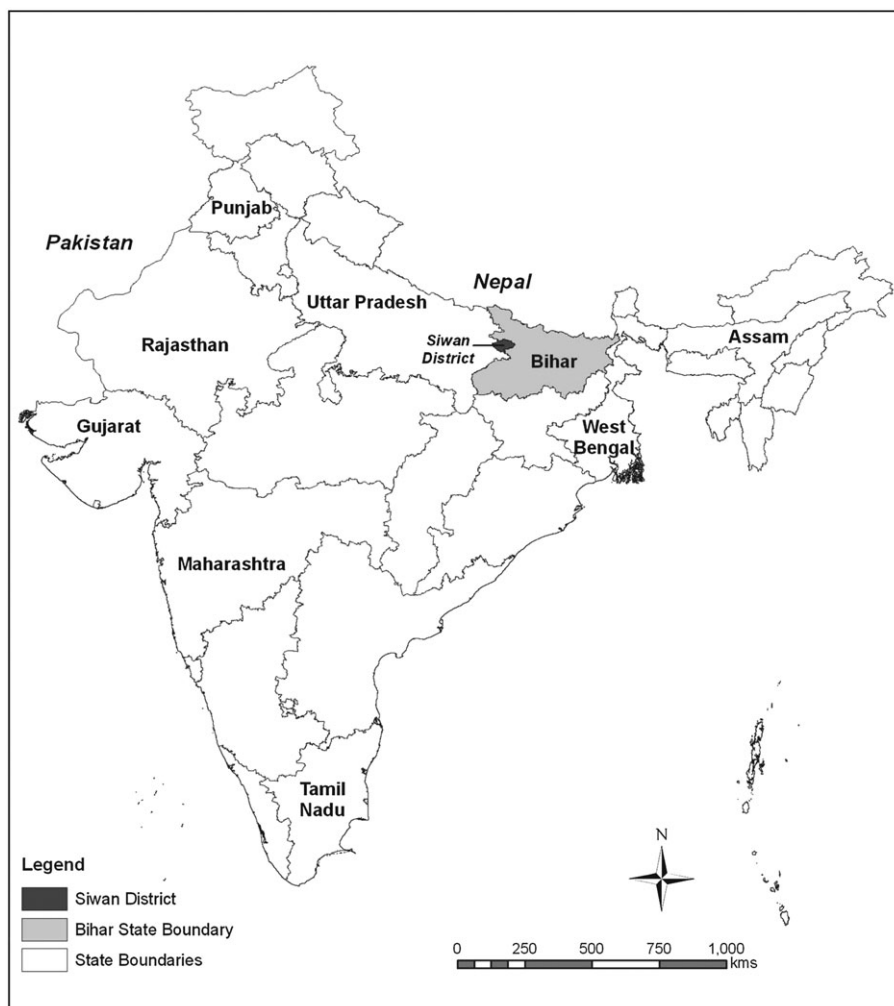


Figure 1 The case-study district of Siwan, Bihar

Source: own work.

Note: The borders of this map do not purport to be the official borders of India.

migrant households. Given this paper focuses on households as a unit of analysis, the data presented in this paper belong to sample households.)

Survey insights on the migration-remittances-food security nexus

In Siwan, landholdings are sub-economical. The data on the landownership show that of the 392 surveyed households, 32 per cent had no land, 57 per cent owned landholdings of less than an acre, and only 10 per cent had land sizes of one acre or more. These landholding patterns suggest that, for a large majority of surveyed households, the productive capacity of land to provide cash income was limited, although land was invariably

valued highly by all households as a critical livelihood asset, a source of security, and a vital foundation to provide food security. This meant that cash incomes from nonfarm sources were important to supplement and support land-based livelihoods. The survey data on income composition suggest that farm income constituted a very miniscule proportion of the overall income of surveyed households. On the other hand, nonfarm sources contributed more than three-quarters of households' annual cash incomes; for migrant households the combined share of rural and urban nonfarm incomes accounted for more than 90 per cent of average annual income. Migrant households had incomes higher than their non-migrant counterparts, largely owing to the fact that

Table 1 Background characteristics of surveyed households by migration status

	Migrant household	Non-migrant household
Household size (in person) ¹		
Average household size	7.3	5.7
Average number of persons aged 20 to 50 years	2.9	2.1
Average number of males aged 20 to 50 years	1.6	1.0
Religion of the household		
Hindu	77.7	79.5
Muslim	22.3	20.5
Caste of the household		
Forward Caste	7.1	7.7
Backward Caste	46.7	40.4
Extremely Backward Caste	28.4	28.7
Scheduled Caste/Tribe	17.8	23.1
Type of household		
Nuclear	47.2	74.4
Joint/Extended	52.8	25.6
Type of house occupied		
Kutcha	16.2	24.1
Semi-pucca	37.1	38.5
Pucca	46.7	37.4
Agricultural land ownership		
Landless households	33.0	31.8
Households with less than half acre land	66.7	67.7
Households with less than 1 acre land	83.3	85.7
Average land size (in acre)	0.6	0.6
Total number of households (n)	197.0	195.0

All data are in percentage terms, unless specified differently.

¹Includes migrant members.

Source: primary household survey data, 2011–12.

wages and earnings in urban areas were higher than rural incomes. The average annual income of households with one or more migrant member from remittances alone was Rs. 43,563, which was slightly higher than the total income of Rs. 43,507 among non-migrant households. Indeed, the relative contribution of the source had an important bearing in terms of explaining the income differential between the migrant and non-migrant households (Table 2).

Figure 2 shows the distribution of sample households across the monthly per capita income (MPCI) tertiles (distribution of households into three equal parts based on their income) by their primary source of livelihood. The primary source

Table 2 Average percentage share of income by source among migrants and non-migrant rural households in Siwan

Source of income	Migrant HHs (n = 197)	Non-migrant HHs (n = 194) ¹
Farm	1.5	7.7
Livestock	1.6	4.3
Rural nonfarm	17.4	76.2
Off-farm	1.4	5.6
Remittances	75.4	0.0
Government benefits	1.9	4.0
Others	0.8	2.1
Total	100.0	100.0
Average annual income (in Rs.)	60,232	43,507
Average annual per capita income (in Rs.)	11,629.0	7,844.0

¹One non-migrant household did not share income details.

Source: primary household survey data, 2011–12.

of livelihood is defined here as the sector or occupation which accounted for 50 per cent or more of total household income in the year 2011–12. This has been classified into three broad categories that include (a) agriculture and livestock (including off-farm wages from agriculture work and tending animals), (b) rural nonfarm activities, and (c) remittances. The logic of such classification was that together they accounted for 96 per cent of average household income. The cut-off points for monthly per capita income tertiles obtained from the survey data include Rs. 485.12 and Rs. 767.12. Using these cut-off points, the classification thus follows: (1) low – Rs. 0 to 485.12; (2) medium – Rs. 485.13 to 767.12; (3) high – Rs. 767.13; and above.

The data suggest that while a relatively small proportion of the overall sample (32 households) chiefly depended on income from farm and livestock, a greater proportion (62%) among them was in the low-income tertile, suggesting the farm incomes were low. On the other hand, 46 per cent of 157 households which depended primarily on remittances were in the high income tertile; this translated into economically advantageous position for migrant vis-à-vis non-migrant households.

Almost all migrant households received remittances from their members: of the 197 surveyed migrant households, 192 reported receiving remittances in the past year. Moreover, the survey data on incomes and remittances show that most migrants remitted nearly half the share of their income home. Although the uses of remittances varied markedly from one household to another,

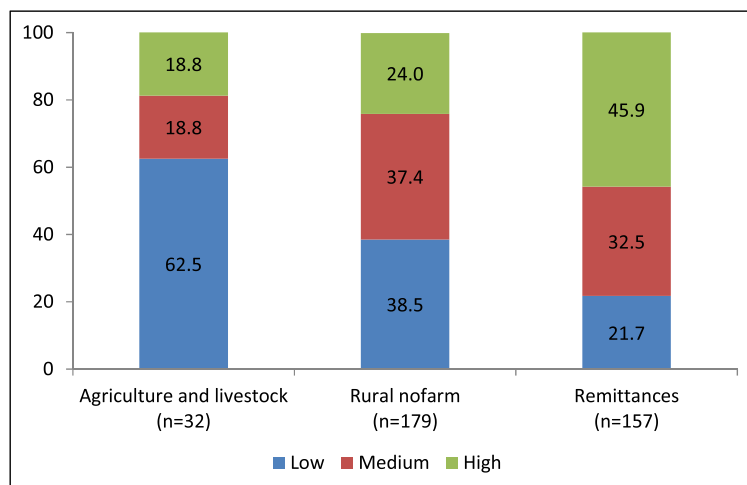


Figure 2 Percentage of households in MPCIT tertiles by primary source of income
Source: primary household survey data, 2011–12.

depending upon the needs and background circumstances of households and the amount of money received, most households reported utilising the money on basic livelihood needs of food, health, and education. Almost all (188 households) used remittances on food, 85 per cent (162 household) spent remittances on health care, and two-thirds (133 households) spent on education of household members, mainly for their children. This allowed them to stave off the exigencies of starvation and ill-health and to invest in future livelihood assets (for example, children's education) (Figure 3).

While remittances had several functions in surveyed households' lives and livelihoods, their effects on the food security, the subject matter of this paper, were perhaps the most discernable. Nearly 98 per cent of remittance-receiving households used the money on food. Indeed, remittances provided the most crucial means to secure food for households across socioeconomic categories. Compared with relatively better-off households, the poor households without any land or financial assets spent a larger share of their cash receipts on food (indeed, food insecurity was one of the key drivers of migration among these households).

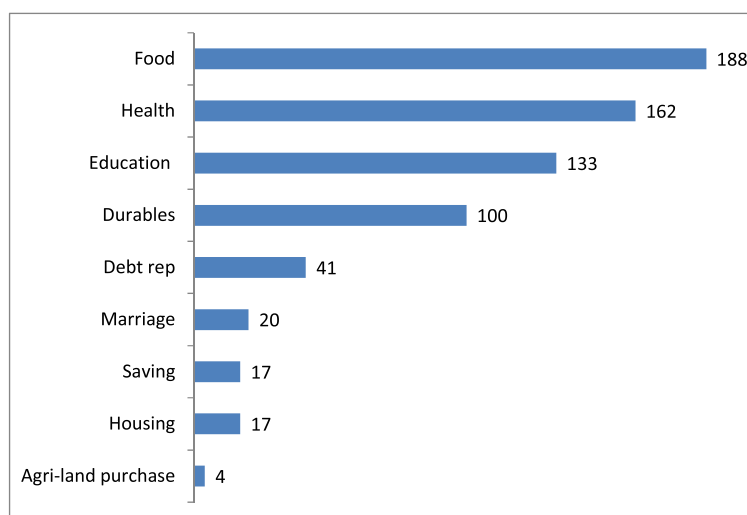


Figure 3 Uses of remittances among the migrant households ($n = 192$)
Source: primary household survey data, 2011–12.

Nevertheless, the field research revealed that the former also spent part of the remittances on food, often to improve their diets such as eating meat or fish more often in a week.

Additionally, migrants' incomes also allowed many of the households to invest money in land and agriculture. Seen this way, the relationship between migration and land and agriculture was a two-way one: land poverty and lack of adequate farm incomes provided a crucial prompt for migration and migrants' earnings were recycled into own-account agriculture. Migrants' remittances were crucial for the maintaining and sustaining the little land parcels that surveyed households owned. In cases where remittances were significant, they also allowed households to buy and accumulate more land and derive better gains from farm work.

In the survey, of 128 migrant households who owned some land and received remittances, more than half (56%) reported investing remittance incomes to boost household agriculture.⁸ Although landholding patterns did not vary significantly by the migration status of the households, higher incomes among migrant households enhanced their investment capabilities. The average annual investment in own-agriculture reported by the migrant and non-migrant households with land was Rs. 8,454 and Rs. 7,615, respectively. However, within migrant households, the investment capacities differed by the number of migrants in the household. As the data in Figure 4 show, while constituting a very small proportion of the

sample households that had three or more migrant members working outside the village invested, on average, three times as much as households with one migrant.

Additionally, personal histories of surveyed households suggest that remittances also enabled some households to increase marginally the size of their landholdings. Migrants' savings were small and, as a result, it took long periods of time for households to enhance the size of their landholdings, explaining why only four households reported using remittances to buy agricultural land in the past one year (Figure 3). However, there were differentials in terms of the number of migrants involved: households with two or more members working outside the village were able to save more and more quickly than those with only one migrant member. The data in Figure 5 suggest that with the increase in the number of migrants, the proportion of landless households does decline whereas the proportion of households with less than an acre and an acre and above increases. The cross-sectional nature of this survey means that it is not methodologically feasible to attribute these differences in landholding status as arising from savings from urban incomes over the period. At the same time, this relationship is hardly surprising. In his study in South Gujarat, for instance, Breman (1985) found that migration incomes were indispensable for the consolidation of small-peasant land holdings among poor households.

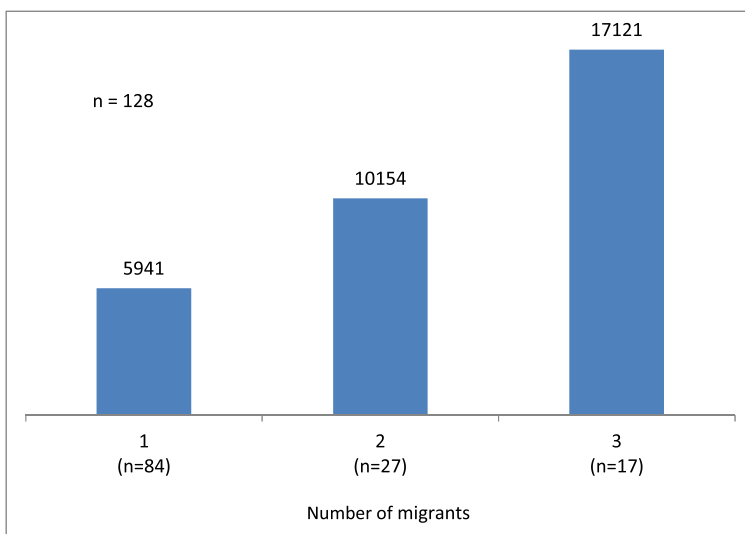


Figure 4 Average annual investment in agriculture among migrant households with land by number of migrants (in Rs.) Source: primary household survey data, 2011–12.

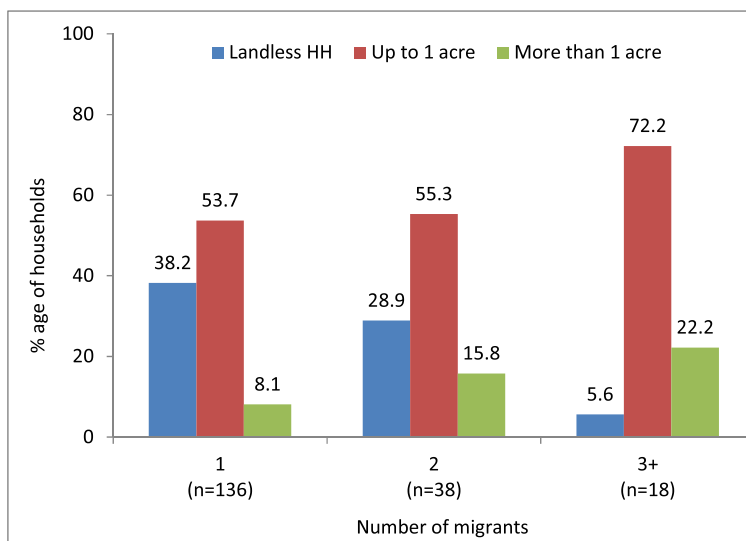


Figure 5 Size of agricultural landholding among migrant households who received remittances by number of migrant members (n = 192)
 Source: primary household survey data, 2011–12.

Furthermore, households with higher migration incomes did not stop pursuing farming; contrarily, they deepened households’ engagement with land and agriculture in the origin and enabled them to increase their farm incomes. This trend is clearly reflected in data in Figure 6 that show the average annual incomes of remittance-receiving households by source and number of migrants. Given the generally smaller landholdings across the

survey sample, much of the investment in land and agriculture was for households’ own consumption. However, households favourably positioned in terms of number of migrants were able to derive higher incomes from own-account agriculture. The data in Figure 6 suggest that while the amount of remittances increases with the number of migrant members, farm income also increases.

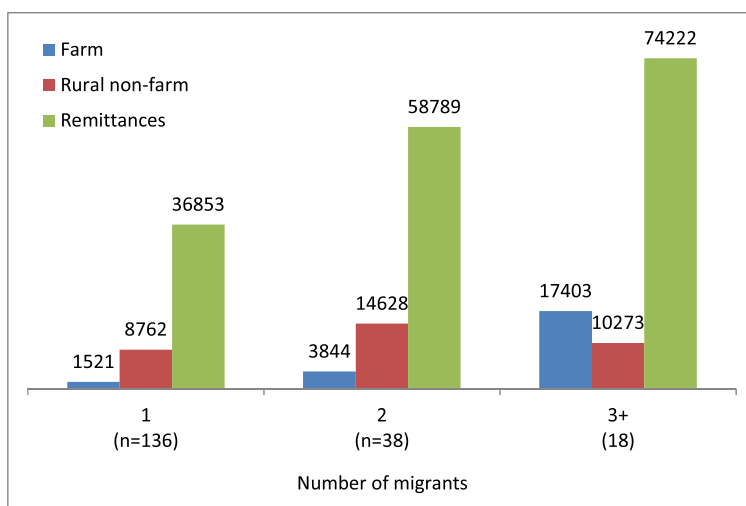


Figure 6 Average annual income of remittance-receiving migrant households by source and number of migrants (in Rs)
 Source: primary household survey data, 2011–12.

Importantly, while farm incomes were twice as much among households with two migrants as compared with households with one migrant, households with three or more migrants had significantly higher incomes from agriculture. Furthermore, data also show that no household with three or more migrants engaged into manual agricultural labour and thus any such household's share in the total farm income was zero. Another important dynamic that emerges from these data is that the degree of dependence on rural nonfarm incomes also decreased slightly among the households with three or more migrants (Figure 6). Thus, higher remittances allowed households to engage with agriculture much more actively and derive better income gains. This finding suggests that the dynamics of rural livelihoods often involve these backward-forward linkages between farm and nonfarm sectors, and they need to be understood more holistically than allowed by the inexorable deagrarianisation thesis.

The effects of remittances played out differently on the food security of households, depending on the total amount of money received, size of land owned and acquired, and money invested in land and agriculture. However, in general remittances improved household purchasing power which, in turn, was associated with better household food security.

Table 3 compares the migrant and non-migrant households on the self-reported parameters of food security. Surveyed households were asked a series of questions to assess if, at any time during the year preceding the survey (April 2011 to March 2012), they experienced food insecurity and food

shortages. The data in Table 3 refer to the proportion of households who reported having experienced food inadequacy and food unavailability at least once in the survey reference period. As the data suggest, on most food security indicators the proportion of non-migrant households is nearly 10 per cent higher than the migrant households.

Food security also varied by households' landholding status: a greater proportion of landless households reported having faced food insecurity compared with households with some land; and among the landed, the incidence of food insecurity differed by land size. Land was an important resource for those seeking to provide their own food security. However, the positive effects of landholding on food security were more evident among migrant than the non-migrant households. Table 4 shows household food security by migration status across the different landholding categories. It is apparent that land ownership generally exerted a positive role on household food security, with the proportion of households declining on all parameters of food insecurity as we move from landless households to the ones with more than an acre of agricultural land. At the same time, migrant households fared better than their non-migrant counterparts across all the landholding categories. Thus, no migrant households with land size of one acre or more reported consuming 'single meal a day' and having to 'borrow money to buy food' whereas the proportion of non-migrant households for the same land size group was 11 per cent and 18 per cent, respectively.

Table 3 Household food security by migration status

	Migrant HHs (%)	Non-migrant HHs (%)
Food was not enough (defined by the following situations)		
Household ate meals without vegetables	41.1	53.8
Household could only afford to consume food from PDS	36.6	39.4
Household members consumed single meal a day	13.7	21.0
If all three main food categories (cereals, pulses, vegetables) were not available	41.6	53.3
If household members got less food than the amount to satiate hunger	35.5	44.6
Food was not available (defined by the following situations)		
Household borrowed money from friends and/or relatives to buy food	15.2	24.6
Household borrowed money from local traders, money lenders, or lifted ration on credit	28.9	33.3
Household sold jewellery or other personal assets to buy food	0.5	2.6
Consumption rationing (members ate less food than usual)	39.6	51.8
Total number of households (<i>n</i>)	197	195

Source: primary household survey data, 2011–12.

Table 4 Household food security by migration status across the different landholding categories

	Landless HHs (%)		Up to 1 acre (%)		More than 1 acre (%)	
	Migrant	Non-migrant	Migrant	Non-migrant	Migrant	Non-migrant
Food was not enough (defined by the following situations)						
Household ate meals without vegetables	64.6	72.6	33.6	48.7	9.1	22.2
Household could only afford to consume food from PDS*	26.2	35.5	10.0	17.4	9.1	5.6
Household members consumed single meal a day	13.8	25.8	16.4	20.0	0.0	11.1
If all three main food categories (cereals, pulses, vegetables) were not available	61.5	71.0	35.5	48.7	13.6	22.2
If household members got less food than the amount to satiate hunger	47.7	59.7	33.6	40.9	9.1	16.7
Food was not available (defined by the following situations)						
Household borrowed money from friends and/or relatives to buy food	18.5	22.6	16.4	27.0	0.0	16.7
Household borrowed money from local traders, money lenders, or lifted ration on credit	44.6	53.2	22.7	26.1	13.6	11.1
Household sold jewellery or other personal assets to buy food	1.5	3.2	0.0	2.6	0.0	0.0
Consumption rationing (members ate less food than usual)	58.5	72.7	33.6	45.2	0.0	0.0
Total number of households (<i>n</i>)	65	62	110	115	22	18

Source: primary household survey data, 2011–12.

Conclusion

This paper has argued that despite the obvious connections between migration and household food security, little attention, and scarce direct evidence, has been marshalled towards the linkages between them. In part, this neglect stems from greater focus on international migration and remittances, and consequently, discussions have tended to centre on their wider development impacts (Crush, 2013). At the level of food policy, the tendency to treat rural households as homogeneous groups engaged in farming is an important reason for this disregard. This paper has highlighted the connections between migration and food security, primarily focusing on the role of remittances using a case-study approach involving primary survey data collected from a sample of 197 migrant and 195 non-migrant rural households from a poor Indian district (Siwan, Bihar).

The primary survey data from the rural hinterlands of India point to at least two key issues that may have significance beyond the immediate research context.

First, the evidence presented in this paper shows that although most of the surveyed households had low incomes migrant households had higher overall incomes than non-migrant households,

mainly because of the effects of remittances. Indeed, in India, the diminishing capacity of land-based livelihoods to provide adequate income and livelihoods has increased the overall importance of remittances in rural households' income portfolios, and the evidence from the large-scale surveys in India establishes the importance of micro-level findings in this paper. As noted earlier, a study by Tumble (2011) using national sample survey data shows that between 1993 and 2007–08, household dependency on remittances increased significantly in India. In particular, the significance of domestic remittances rose considerably, and in 2007–08 internal remittances financed 30 per cent of all household expenditure. In terms of the impact of remittances on food security, the evidence presented in this paper clearly shows that migrants' remittances had a generally positive impact on food security: households with migrant members had invariably better food security outcomes than the non-migrant households. This finding is further corroborated by a recent World Bank's study in rural Bangladesh that found remittances to be significant predictor of rural household food security (World Bank, 2015b). These findings suggest that the aim of the development policy must be to recognise that remittances can, and indeed do, play a potentially important

role in improving the food access among vulnerable rural households.

Second, beyond the immediate impact of remittances in providing cash to rural households to meet their food needs, the evidence in this study suggests that these payments allowed several rural households to invest in land and agriculture at their places of origin. In this way, the relationship between migration and landholding was mutually reinforcing. Remittances allowed households to maintain and, in a few cases improve, their landholdings at the place of origin, and provided the money to pursue farming, with the overall effect being that it strengthened the own-production food entitlements of households. Interviews with households suggested that most viewed land as a long-term safety net, and migration incomes were recycled by some households into land and agriculture to derive better income gains from farming. The wider significance of these finding is that they warrant the need for rural livelihood analysis to take into account these farm-nonfarm linkages rather than what the simple thesis of deagrarianisation permits. Thus, as Yaro (2006, p.125) argues: 'deagrarianisation should be seen as a process embedded in social change, bearing in mind the reversibility between farm and non-farm livelihood strategies used by households (reagrarianisation?)'.

These findings assume significance, particularly in the wake of recent evidence on the rising significance of migration in rural livelihood systems across a number of developing countries. In many developing economies, such as India, China, and Brazil, the recent patterns of economic growth have led to weakening of rural households' self-provisioning capabilities from local land and resources (Pritchard *et al.*, 2016, p.2). Recent economic growth has occurred largely in the urban centres, leading to an increasing number of rural households engaging in work migration in cities. While the drivers of migration are diverse and complex, varying widely across contexts, from the specific perspective of food security this implies that urban work and remittances are becoming crucial for rural households' food security, as the findings in this paper also show. There is thus a pressing need to integrate migration in future food policy research and practice.

Declaration

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Notes

1. One recent notable research initiative on this issue is the five-year-long project entitled *hungry cities partnership: informality, inclusive growth and food security in cities of the Global South* that aims to generate evidence on problem of urban food insecurity from countries in Asia, Africa and Latin America (Center for International Governance Innovation, 2016). Although this research is still underway, it will likely generate important insights on the migration-remittances-food security relationship.
2. Food security is a multidimensional concept that involves interplay of three key aspects of *food availability* (which refers to overall supply of food), *food access* (which refers to the ability of households to gain access to food by legal means within the given socioeconomic environment) and *food utilisation* (which focuses on factors that allow bodily absorption of food to allow the body to perform its normal functions) (Food and Agriculture Organization, 2010). The focus of this paper is on food access, for, as noted earlier, nearly 800 million people in the world suffer from inadequate access to basic food (Food and Agriculture Organization, 2015).
3. The cross-country evidence suggests that for most developing countries the decline in the prevalence of child under-nutrition tends to be nearly half the rate of growth of the Gross Domestic Product (GDP) (Haddad *et al.*, 2003). Between 1990 and 2005, per capita GDP in India grew at an average annual rate of 4.2 per cent, which should ideally have resulted into decline in the childhood under-nutrition prevalence by 27 per cent during this 15-year period (Gillespie & Kadiyala, 2012, p.173). However, the proportion of children below three years of age who were underweight for age declined by nearly 6.6 percentage points—from 52.8 per cent in 1992–93 to 46.5 per cent in 2005–06 (Pathak & Singh, 2011, pp.4–5).
4. Noting the highly exclusionary nature of India's economic growth, further widening the gap between the rich and poor, Dreze and Sen (2013, p.ix) even go to the extent of suggesting 'that the growth process [in India] is so biased, making the country look more and more like islands of California in a sea of sub-Saharan Africa'.
5. Between 1995 and 2010, a quarter million farmers have committed suicide in India owing to debt and distress (Sainath, 2012). And according to the nation-wide survey of 51,770 farm households conducted in 2003, 40 per

- cent of the households indicated that provided the choice, they would take up some other profession, with 27 per cent out of the 40 per cent citing lack of profitability as the main reason for this decision (National Sample Survey, 2005).
6. The district-wide interstate outmigration calculated using the population census data show that Siwan had an outmigration rate of 4.9 between 1991 and 2001, the second highest among all the districts. The southeastern state of Munger had the highest outmigration rate with 5.2 per cent of the total population classified as interstate migrants in 2001. However, this district is one of 106 districts of India affected by left-wing extremism (Ministry of Home Affairs, 2013) and due to the safety reasons; Siwan was chosen as a case-study site.
 7. Migration from Bihar is largely dominated by single-male outflows. Using population Census 2001 village-level data on the age and sex composition of population, the selection of villages thus followed the principle of choosing villages that had at least 1,000 females per 1,000 males in the age group of six years and above as a proxy indicator of migration. In other words, it was assumed that villages with sex ratio (females/1,000 males) skewed in favour of females will likely have high outmigration rate.
 8. Out of the sample of 197 migrant households, 192 reported receiving remittances, and 132 owned land. Four of the 132 migrant households with land did not receive any remittances; hence, this question applied to 128 households.

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