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Changing livelihoods at India's rural–urban transition

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ABSTRACT

In India, the past couple of decades witnessed, simultaneously, a massive shift of employment out of agriculture, substantial urban growth in heretofore rural regions, and rapid increases in the rates of labor migration. But very little is known about new livelihoods being forged or the whereabouts of these livelihoods. We draw on extensive primary data collected at two sites in West Bengal and Bihar, along with a comprehensive analysis of population census and GIS data, to investigate livelihood transformations and household well-being. We observe large-scale change, exceeding common perceptions of academics and policy makers. While the shift out of agriculture is momentous, alternative local livelihoods are scarce and, more than ever, labor migration offers a way out for many households. Traditional seasonal migration has made way for more permanent forms of circular labor migration. Our comparative study shows that the timing and nature of this transformation varies to some extent across India as the decline in agricultural employment occurred at different times. We also observe significantly different impacts of domestic versus international labor migration. There is a pressing need for pro-active government policies that stimulate local economic restructuring and livelihood opportunities *and*, as long as these local economies are insufficiently developed, that facilitate circular labor migration.

1. Introduction

India is experiencing a major social transformation that is affecting hundreds of millions of people in their daily lives and livelihoods. Agriculture still employs, by far, the largest share of the workforce but it has been declining rapidly in recent years, both in relative and absolute terms. In general, the employment shifts out of agriculture are fairly well documented in the Indian Census and other national surveys. But it is not at all clear where these former agricultural workers and their families go, what new livelihoods they seek out, and how their well-being is affected. This transition away from agrarian livelihoods is accompanied by urban growth in heretofore rural regions, yet very little is known about their linkages.

We use the notion of the rural–urban transition in this paper to place the occupational shift out of agriculture in a wider socio-economic and geographical context. The structural change in employment is integral to a social transformation that affects local economies, livelihoods, migration, well-being, and social organization. It is a complex social transformation with multiple dimensions. This paper concentrates on occupational shifts, livelihoods, and migration – it is part of a larger research project aimed at a more comprehensive understanding of India's rural–urban transition (see Van Duijne, 2019; Van Duijne & Nijman, 2019; Choithani, 2020).

Research on this topic is challenging. Theoretically, the literature is fragmented into various disciplinary fields including development studies, economics, urban studies, geography, rural studies, migration studies, and sociology. The conceptual relevance of some of the theorizing in these disciplines is wanting because of the limited applicability to global South contexts and/or it is not up to date with recent trends. The speed and magnitude of change, we think, far exceeds existing views in academia and policy making circles. Empirically, existing data is scarce and often dated, and primary data collection is difficult. The latter is due to the geographically dispersed nature of these employment shifts and of India's rural–urban transition in general. Field work on this topic, by its very nature, tends to be in a wide range of remote places and brings a host of challenges in terms of research design and logistics.

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In this article, we report on extensive primary data collection in 2019 at two such remote sites in the Indian states of West Bengal and Bihar, that show signs of a rural–urban transition. Building on the sustainable livelihoods approach, we address four interrelated questions. First, what is the extent of occupational shifts out of agriculture? Second, what new kinds of livelihoods are being forged? Third, what is the role of migration in present-day livelihood strategies of households? Fourth, what are the ramifications for the well-being of the involved populations?

The rest of the paper is structured as follows. Section 2 sketches the contours of India's rural–urban transition and as such provides the context for this paper and the overall research project. In Section 3, we give a brief overview of the relevant literature, we point to some of the shortcomings in the existing theory, and we elaborate on the suitability of a conceptual framework centered on the notion of sustainable livelihoods. Section 4 lays out the research design, the choice of the field sites, and methods of data collection. The main body of the paper, on our analysis and findings, is presented in Section 5. The concluding section summarizes our key findings and highlights their theoretical and social relevance.

2. Contextualizing India's rural–urban transition

India has witnessed three major escalating trends in the last couple of decades that, together, sketch the contours of the country's wide ranging rural–urban transition and the ways in which this transition conditions changing livelihoods. The first refers to the substantial and ongoing shift of employment out of the agricultural sector; the second trend pertains to rapid urban growth at the bottom of the urban system, with rural villages turning into urban-classified settlements at unprecedented rates; and the third relates to significant increases in labor migration.

First, over the past two decades India has experienced a major employment shift out of agriculture. According to data from the International Labor Organization (World Bank, 2019a), agricultural sector employment dropped from 250 million jobs in 2004 to 215 million jobs in 2016. Separate calculations by Himanshu (2011), Thomas (2012), Mehrotra et al. (2014) and Abraham (2017) put the number of jobs lost in agriculture over the same period even higher, at around 40 million. Over a longer period, from 1991 to 2019, employment in agriculture as a percentage of total employed dropped from 63 percent to 43 percent (Fig. 1). For males, the shift out of agriculture and into other types of employment was especially pronounced, falling to 40 percent by 2019 (World Bank, 2019b).

While some longitudinal village studies point to the growing significance of rural non-farm employment as villages integrate with wider regional, national and global economic systems (Heyer, 2013; Himanshu et al., 2013; Datta et al., 2014; Himanshu, & Stern, 2016), there are strong indications of a push out of agriculture irrespective of alternative employment opportunities. Reports of agricultural distress have been widespread, with low agrarian productivity, farmer's indebtedness, crop failure, and overall precarity as the main drivers (e.g., Suri, 2006; Abraham, 2009; Sainath, 2011a, 2011b; Bhoi & Dadhich, 2019). The impact on less productive small farms of the mechanization (and digitization) of bigger farms and the growing presence of large-scale agribusiness may play a part (e.g., Barman & Deka, 2019). At any rate, if we assume an average household size of 5 during this period (a low estimate), it means that close to 200 million people have been transitioning from dependency on agriculture into other kinds of livelihoods.

The second trend is expressed in the rapid proliferation of so-called Census Town (CTs). These are settlements that for the first time meet the threefold Indian Census definition of "urban": a population of at least 5,000 people; a population density of more than 400 people per square kilometer; and over 75 percent of the male workforce engaged in non-farm work. Between 1961 and 2001, the Census typically reported a few hundred CTs across the country, but between 2001 and 2011 an unprecedented number of 2532 new Census Towns had emerged (Pradhan, 2017; Shaw, 2019); India's urban population increased by 91 million people and new Census Towns accounted for one third of that urban growth.

The proliferation of CTs (Fig. 2), with its criterion of at least 75 percent non-farm male workers, aligns with the data on the employment shift out of agriculture. At the same time, because the CT definition also includes criteria of size and density, CT data do not fully capture the employment shift. In our analysis of primary census data, we found thousands of villages that are not recognized as CTs (because their total population is less than 5,000 people) but that do have a large and growing workforce involved in non-agricultural activities.

Table 1 lists the number of CTs *and* villages with more than 75 percent non-farm employment, for selected states in 2001 and 2011. The table shows considerable variation across states but the steep increase of CTs is seen everywhere. Importantly, it also reveals that the number of CTs is dwarfed by the number of villages with more than 75 percent non-farm work, the number of which increased markedly from 2001 to 2011 (where there is a decline, for example in West Bengal, this is in part because of reclassification of many of these villages as CTs in 2011).

The emergence of these 'non-farm villages' is especially prevalent across the Indo-Gangetic Plain in states that were hitherto considered to be predominantly rural. For example, Uttar Pradesh witnessed an increase of almost 500; in Bihar, the number jumped by 350; and Jharkhand and Odisha showed increases of 500 and 450.

In more detailed spatial analyses, we found that many of these high non-farm employment settlements have amalgamated into larger seemingly urbanizing formations with populations far exceeding the CT threshold of 5000 (Van Duijne & Nijman, 2019). This clustering of distinct high non-farm settlements goes unseen in the Indian Census because the measuring of a settlement's population stops at rigid, often arbitrary administrative boundaries. We will return to this issue in Section 4 of this paper, in regard to our case-study selections.

Together, aggregate labor statistics and data on the growth of CTs and 'non-farm villages' provide strong indications of the magnitude of livelihood changes at India's rural–urban transition. But there is an important third dimension to this transformation: that of migration. It is well-known that historically circular labor migration has played a major role in the livelihoods of many rural households (e.g., De Haan, 2002; Deshingkar & Farrington, 2009; Tumbe, 2012; Vartak et al., 2018). Especially in the poorer northern and northeastern states, seasonal migration has long been a source of income for rural households unable to support themselves through agriculture (Keshri & Bhagat, 2012).

It is important to note that seasonal and circular migration streams often overlap, and the distinction between the two is not always clear. Both migration forms involve temporary (and often repetitive) moves, and lack of permanent change in residence. Circular migration is broadly defined as "a temporary move from, followed by return to, the normal place of residence" (Deshingkar and Farrington, 2009, 1). This definition implies that all seasonal migration can be categorized as circular. Not surprisingly, the two forms often used interchangeably in the literature. However, there is an important difference. Seasonal labor migration has traditionally been tied to the rhythms of the agriculture cycle at origin whereby rural households engage in migration in lean seasons when there is no farm work locally. It is often supplemental to agriculture-based incomes. In some instances, seasonal migration is also related to

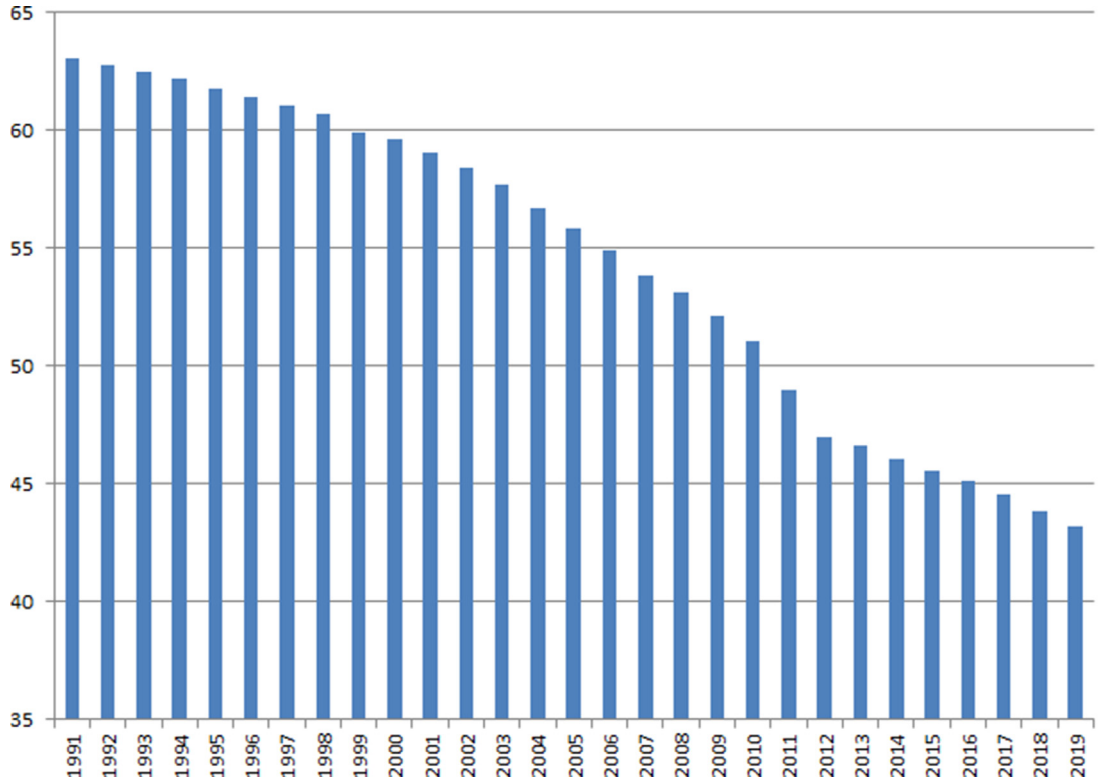

Fig. 1. Employment in agriculture as a percentage of total employment. Source: World Bank, 2019a.

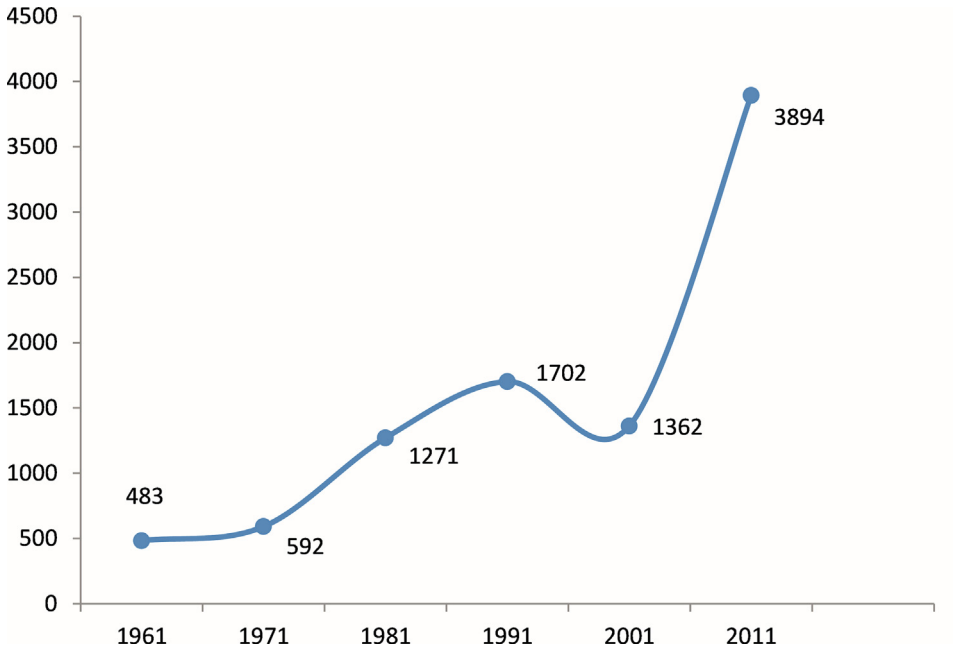

Fig. 2. Number of Census Towns recorded in each Indian census from 1961 to 2011. Source: Indian Census 2011.

the nature of industry at the destination. This includes, for example, labor migration in the brick kiln industry where workers migrate after winter crop harvest and return before the monsoon (November–May). On the other hand, the timing and duration of circular migration does not necessarily depend on farm seasons, and it can occur independent of them. With labor migration increasingly detached from farming, as our analysis will show, the distinction between seasonal and circular migration is important for understanding livelihood change at India's rural–urban transition.

Recent research shows that internal (domestic) migration has accelerated to unprecedented levels in the last couple of decades. This is especially true for non-permanent, circular labor migration (Deshingkar & Farrington, 2009; Choithani, 2017; Tumbe, 2018). Much of this migration goes unrecorded in the Indian Census and other data sets, such as the National Sample Survey, though even these sources suggest a significant increase. Between 1971 and

Table 1
The number of Census Towns and the number of villages with more than 75% of workers in non-farm occupations (and with a total population size greater than 1500 or more), 2001 and 2011.

State	Census Towns		Villages >75% non-farm employment	
	2001	2011	2001	2011
Andhra Pradesh	93	229	428	244
Assam	45	126	1,135	1,285
Bihar	5	60	224	576
Jharkhand	108	188	505	1,000
Karnataka	44	127	694	902
Maharashtra	127	279	734	596
Odisha	31	116	171	613
Punjab	18	74	284	393
Rajasthan	38	112	521	718
Tamil Nadu	111	376	716	916
Uttar Pradesh	66	267	990	1,488
West Bengal	252	780	1,899	1,751

Sources: Pradhan, 2013; Census Primary Abstract Tables, Government of India, 2001, 2011 (authors' calculations and adaptations).

1991, internal migration in India actually declined but the trend reversed during the 1990s and then gathered momentum since the turn of the century (Singh & Sandilya, 2012). Some estimate that internal labor migration in India increased nearly four-fold between 2004–05 and 2011–12, from 16 million to 60 million; others put the number for 2011 even higher, at 80 million (Nayyar & Kim, 2018). The highest estimate currently available is based on combined numbers from the National Sample Survey and the India Human Development Survey: between 2007 and 2012, the number of labor migrants is said to have exploded from 15 million to 200 million (Nayyar & Kim, 2018). This seems a very high estimate, indeed, and it should be noted that migration data is notoriously difficult to calculate and interpret. But there can be no doubt that recent years have seen a very rapid increase in internal labor migration rates.

At the same time, *international* labor migration from India has accelerated as well. United Nations (2019) data show that labor migration from India to the Persian Gulf nearly doubled between 1990 and 2000, and more than tripled between 2000 and 2019 to reach over 9 million migrants. The international migrants come in large part from the same states that provide many internal migrants, especially Uttar Pradesh and Bihar (International Labour Organization, 2018). The economic impact of these different kinds of migration is known to be significant. For example, Nayyar and Kim (2018, 4) estimate that the share of migrant remittances in Bihar's Gross State Domestic Product increased from 12 percent in 2004 to 36 percent in 2011.

The more or less simultaneous massive shift of employment out of agriculture and equally impressive increase in labor migration of various kinds may well be connected but this requires data analysis at a finer scale and higher spatial resolution. Similarly, the rapid growth of Census Towns and of 'non-farm villages' underscores the widespread abandonment of agricultural work but it tells us virtually nothing about newfound livelihoods. The notorious difficulty of reliable data collection on circular migration and on the impact of circular migration on well-being compounds the problem (De Haan, 1997a). In all, there can be little doubt that major transformations are shaping up at India's rural–urban transition but key questions have thus far remained unanswered.

3. Theorizing livelihoods at the rural–urban transition

A focus on livelihoods at the rural–urban transition is accompanied with notable conceptual challenges. It involves a huge literature that is fragmented across different fields including development studies, migration studies, urban studies, geography, economics, and sociology. Moreover, a good deal of established theory in these disciplines is not necessarily pertinent to research on India or other parts of the global South, and/or relevant to recent and present-day developments (Parnell & Robinson, 2012; Sheppard et al., 2013; Nijman, 2015a). Even if the disciplines mentioned above do not provide a ready-made conceptual framework to guide our research, they intersect in several ways that are relevant to our study.

First, there is a well-known interdisciplinary body of literature on the relationship between urbanization and economic development. At the macro level, this literature postulates that urbanization is positively associated with development in terms of economic growth and well-being (e.g., Spence et al., 2009; Henderson, 2010; Glaeser, 2012; Scott, 2017). It is the movement of labor from lower-productivity, agrarian-based activity to higher-productivity, urban-based work in secondary and tertiary sectors, that drives this growth. These sectors benefit from, and generally require, agglomeration dynamics and economies of scale. Accordingly, employment shifts out of agriculture and into secondary or tertiary sectors tend to coincide with urban growth and migration to cities.

Such theorizing is very much based in the historical experience of the west, when both urbanization and industrialization rapidly increased in the latter part of the 19th century and first half of the 20th century. In East Asia, a similar experience has been observed, particularly in Japan after World War II and more recently in China (e.g., Nijman, 2019). It may not apply in large parts of the global South. In regard to recent trends in Africa, it has been argued that accelerated urbanization has occurred in the absence of significant industrialization or other urban-based economic growth (e.g., World Bank, 2000; Bryceson et al., 2009; Turok & McGranahan, 2013).

Interestingly, in the Indian case the reverse has been observed: there, in the past couple of decades, urban growth has been exceptionally slow despite rapid economic expansion (Nijman, 2015b). The latter implies that Indian economic growth has, to a considerable extent, been jobless, i.e., it has happened in the absence of substantial urban-based job creation (Kannan & Raveendran, 2009; Chandrasekhar, 2017; The Economist, 2017). Part of the explanation may be what Rodrik has termed premature deindustrialization, which appears to have affected a range of countries in the global South (Rodrik, 2016; Amirapu & Subramanian, 2015). India's much heralded (post-industrial) IT sector has contributed strongly to the country's economic growth and it is by and large based in cities, but it is not sufficiently labor-intensive to drive urban population growth. This also explains why much of India's limited formal urban employment growth has been the reserve of the highly educated (Bhattacharya & Sanyal, 2011; Kundu, 2014).

All of this adds urgency to questions about new kinds of livelihoods, and whereabouts, of large numbers of former agricultural workers. If many former agricultural workers and their families are not likely to be pulled to employment opportunities in the cities, there are two sets of alternatives. First, given the reported rapid urban growth in heretofore rural areas, they may find non-agricultural jobs locally or nearby. Second, they may choose (or feel forced) to go the route of male circular labor migration, with the rest of the household staying put.

The second body of literature sits at the intersection of migration and development studies, both of which represent large and sprawling traditions of scholarship in their own right. In established (western) urbanization theory, it is one-way rural–urban migration that is viewed as a key driver of urban growth. As suggested above, this does not appear to apply (as much) to India in recent decades. In addition, the neo-classical economics literature is focused more narrowly on the balance between migration flows

and urban (un)employment rates and, as such, is more interested in urban labor markets at the receiving end of migration and less so in the rural economy (e.g., Lewis, 1954; Todaro, 1969; Harris & Todaro, 1970; Fields, 1975; Piore, 1979).

The increase, in recent decades, of *international* migration and the emerging focus on transnationalism in some ways solidified a focus on the economies of receiving countries, further distracting attention away from domestic labor migration flows within the global South (Arango, 2000; De Haas, 2005; Portes, 2009). Finally, the emphasis in neo-classical writings on individual rational choice seems to only diminish its relevance to understanding the situation of many people at India's rural–urban transition where choices can be severely limited and where they are often made not at the individual level, but at the level of the household.

An alternative approach was provided by the so called 'new labor migration economics' that emerged in the 1980s, shifting the research focus in part to the impact of migration on rural areas, mainly through remittances (e.g., Stark & Bloom, 1985; Stark & Lucas, 1988; Stark, 1991; Taylor, 1999). It also redirected attention from the individual to the family or household and proposed to view migration as family strategy. Because of this, the prevalence of circular labor migration came more clearly into view.

The main push for a conceptual framework that concentrates on development and circular labor migration from rural environs in the global South came from the field of development studies in the 1990s. This new strain of literature offered a broader and more nuanced perspective in which migration became integral to a primary focus on *livelihoods* where migration is considered one of various household strategies (e.g., Chambers & Conway, 1992; Scoones, 1998; Ellis, 2003; Pritchard et al., 2014). The notion of *sustainable* rural livelihoods was introduced to underscore the importance of different household strategies to stabilize or improve their livelihoods based on shifting external conditions.

In the sustainable livelihood framework, household strategies are viewed as a response to such external conditions (e.g., employment opportunities, changing wage structures); reflecting the resources at the disposal of the household (e.g., land, financial capital, social networks, education); and as a determinant of well-being. This approach distinguishes, broadly, three types of rural livelihood strategies: farming, livelihood diversification including rural non-farm activities, and migration (McDowell & De Haan, 1998; Scoones, 1998; Deshingkar & Farrington, 2009). This framework places livelihoods at the center of inquiry and it offers an even-handed approach of agency and structure in the explanation of livelihood changes. In other words, it avoids the excessive voluntarism that underlies rational choice approaches *and* the deterministic tendencies of structuralist approaches (McDowell & De Haan, 1998). In its attention to variable livelihoods strategies, it also avoids the reductionist emphasis on formal employment that characterizes much economics research. Last but not least, this framework addresses questions of the drivers *and* impacts of migration (or of the absence of migration).

Under the rubric of household resources, the attention to institutional factors and social networks in relation to migration is of special interest. Migration networks can be defined as "sets of interpersonal relations that link migrants or returned migrants with relatives, friends or fellow countrymen at home" (Arango, 2000, 113; Massey et al., 1998). Such networks are in some ways situated as a medium between agency and structure: they can be cultivated and fostered but at any point in time they constitute a relatively fixed asset. In the words of McDowell & De Haan (1998, 21), "migration options are not, as hypothesized by individualistic theories, open to all." Debates about 'who migrates', whether they are especially the poor who are left with no other choice or the more advantaged who are able to seize certain opportunities, have never been resolved with a single answer in part because there are just too many variations of migration, in different contexts, and with different participants (e.g., Connell et al., 1976; Breman, 1985; Singh, 1995; De Haan, 1997b; Choithani, 2015). But in almost all instances, migration patterns rest in part on evolving institutional and social networks, and these networks are often more important than work-related aspects and other kinds of household resources (Manchin & Orazbayev, 2018).

In regard to the Indian case, it is important to note that circular (male) labor migration seems to have always overshadowed one-way migration from rural parts to urban centers. De Haan (2002, 115) notes that "this pattern of [circular] migration has existed for over 100 years, and it has existed in circumstances where work offered was relatively permanent." This goes some way to explaining the country's overall slow urban growth rates (De Haan, 1997b, 483; De Haan, 2002). It also underscores why so much early theorizing on rural–urban migration (especially in economics) has had limited relevance to the Indian experience or to the global South in general (Lall et al., 2006).

De Haan's observation, above, that circular migration patterns in India persisted even if the work offered was permanent, is important because it points to the very significant ties of the labor migrant to the family and community at home. The household stays put in the village where it has strong kinship and community relations, for example through (future) marriage arrangements and shared resources. This again highlights the need for a focus on the household rather than the individual. Family strategies can involve "investing in a potentially remitting child" and sending young male adults to the city (Lall et al., 2006, 4; Stark & Lucas, 1988). Ultimately, it appears, individual male labor migration serves the needs of the household, and the household is vested in the community.

Research on the impact of circular labor migration and remittances on rural households has been relatively scarce, in part because of the very substantial geographical and historical variability, and it is far from conclusive (Lall et al., 2006; De Haan, 1999; Tumbe, 2018). However, one tentative finding is of particular interest to our study: some of the earlier research indicates that remittances were used mainly to increase the household's agricultural productivity (e.g., Helweg, 1983; Adams, 1991, 1999; De Haan, 1999). In other words, at least until around the turn of the century, it appears that households with remittances continued to rely heavily on agricultural work as part of their overall livelihood strategy. As we shall see, our findings indicate that, for many households across India's rural–urban transition, this no longer holds at the present time.

Moreover, with the structural shift of employment out of agriculture, we expect that *seasonal* labor migration has diminished in importance while that of more permanent circular labor migration has increased. In early studies of seasonal labor migration in India that date back to the 1970s, it was defined as short term, recurring, and adjusted to the annual agricultural cycle (e.g., Nelson, 1976). These seasonal migrants were primarily, and for most of the year, farm workers who during the slow agricultural season went elsewhere to temporarily work in construction, at quarries, in fish processing, took on urban informal jobs, etc. Much of the literature that followed in the 1980s and 1990s (e.g., Breman, 1985; Rao, 1994) similarly focused on seasonal migration but over time the distinction between seasonal migration versus circular migration of a more permanent nature became increasingly vague. Part of this is due to what Deshingkar & Start (2003, 2) describe as a "continuous transition between the different types" of migration. Today, we expect most circular labor migrants to work entirely outside the agricultural sector.

Our research relies in part on the conceptual framework offered by the literature on sustainable livelihoods. As we argued in the previous section, in India the external conditions have shifted dra-

matically in the past couple of decades in terms of the push out of agriculture and incipient urban growth in heretofore rural areas. The questions are how these changing conditions at India's rural–urban transition have affected local livelihood strategies (including the practice of migration) and what the ramifications are for the well-being of these households.

4. Study design

This paper is a part of a larger research project in which we investigate the relationship between urbanization and development at the lower echelons of India's urban system. The empirical focus of our study is on the states of Bihar and West Bengal. These were selected because of their contrasting urban profiles and urban growth patterns, and they represent in some ways the range of experiences at India's rural–urban transition. West Bengal has a level of urbanization that is on a par with the national average (32 percent) and it recorded the highest increase in the number of CTs of all Indian states between 2001 and 2011. A total of 537 new CTs emerged during this time, accounting for 66 percent of the state's urban growth. Bihar's reported urban population, on the other hand, stands at just 11 percent, and urban growth rates have been close to zero for a long time. The state also displayed very little CT growth between 2001 and 2011. However, Bihar did witness the sudden emergence of around 350 settlements with high non-farm economic activity (Table 1). Based on this growth, we hypothesized that certain regions within Bihar are also undergoing rapid transformation even though this growth is generally not picked up as 'urban' by the Indian Census.

The study was conducted in three steps. First, we constructed a geographic information system (GIS) for Bihar and West Bengal specifically geared toward gaining a better understanding of the rural–urban transition and shifting livelihoods. We compiled demographic and employment data for all 86,000 administrative units (settlements), both rural and urban, of the two states from the 2001 and 2011 rounds of the Indian Census (primary census abstract data tables and district census handbooks). We merged this database with spatial boundary files for all units, using a unique six-digit settlement identifier that is at the basis of both the Indian Census and the spatial dataset.[1]

We focused on the spatial clustering of settlements not being picked up as 'urban' by the Indian Census but that do show significant employment shifts out of agriculture. When employment profiles reached over 75 percent non-farm, we highlighted these places as 'high non-farm settlements'. Sometimes numerous such settlements were spatially amalgamating and showed contiguity in built-up area stretching across administrative boundaries. We read this contiguity as indicating larger urbanizing areas that stay under the radar of the Census (because these individual units have populations below 5000). Figs. 3 and 4 are extracted from the West Bengal and Bihar GIS and show the geography of these settlements.[2]

Next, we identified potential study sites for two rounds of reconnaissance field visits across both states. The goal of these exploratory field visits, conducted in 2017–2018, was to make on-the-ground observations on economic change and urban growth, so as to arrive at final decisions on our case studies. We visited half a dozen regional sites in each state, all 'non-urban' according to the Census yet all clusters of high non-farm employment. We gathered observational data on apparent economic and urban change, and we held informal conversations with various local actors including village leaders, shopkeepers, and residents. Eventually, we selected two study sites for in-depth primary data collection: a large cluster around Lalgola in West Bengal's Murshidabad district of 89,367 people, and a smaller cluster around Barharia in Bihar's Siwan district with a population of 18,658. Both clusters have a sizable proportion of Muslim population – 80 percent in Lalgola and 33 percent in Barharia (Government of India, 2011).[3] The two case study sites have in common that they are remote settlement clusters with relatively high density and with high non-farm employment, yet they are not identified as 'urban' in the Census (Figs. 5 and 6).

The Lalgola cluster shows built-up contiguity across seven settlements with average non-farm employment near 80 percent. Densities in the cluster as a whole are very high, reaching over 5500 people per square kilometer, more than five times average population densities in the state. The cluster is located in a predominantly rural region and the surrounding settlements have a predominantly agrarian employment structure, suggesting some form of spatial delineation of this emergent urban formation. The Barharia cluster in Bihar shows contiguity among six settlements with high non-farm employment and with densities reaching 1800 people per square kilometer (more than 1.5 times as high as the average in Bihar). Importantly, the non-agrarian employment profile of this cluster as a whole shifted very rapidly from just 42 percent in 2001 to 82 percent in 2011.

In stage three of the study, the focus shifted from GIS-building and reconnaissance to extensive primary data collection at both sites. In the spring of 2019, we conducted a total of 645 structured household surveys: 308 at the Barharia site and 337 at the Lalgola site. This was followed up with 46 in-depth interviews (35 household and 11 key informant interviews) in August–September of 2019. The survey included a variety of topics including household characteristics and composition, household assets, dwelling characteristics, livelihoods and employment, migration (domestic and international), remittances, land ownership, social change (perceptions on communal identity and caste), food security and overall well-being. We prepared and implemented the surveys with a local surveyor team (males and females) of experienced enumerators. Surveys were recorded with tablets using Qualtrics software.

After a preliminary analysis of the survey data, we conducted in-depth semi-structured interviews with heads of households and key informants to probe respondents on more sensitive issues: questions of perceptions, subjective well-being, beliefs, attitudes etc. We also addressed questions that emerged from the survey data and that required more clarity. At both sites, the team included local male and female translators. We employed our quantitative and qualitative data and methods in mutually informative ways: findings from the surveys helped frame the inter-

[1] For a more elaborate discussion on the technicalities of our GIS, see Van Duijne & Nijman (2019).

[2] The administrative boundaries in Figs. 3 and 4 come from a database compiled by the Centre National de la Recherche Scientifique (CNRS). CNRS used these boundary files in projects called e-Geopolis and Indiapolis. These projects are an innovative effort to create a comprehensive geo-referenced population settlement database for India, and connect spatial data with population census data for all of India's 600,000 inhabited settlements. For more information, see http://e-geopolis.org/. Our overall geographical information systems of West Bengal and Bihar include 86,000 spatial boundary files that are also at the basis of e-Geopolis.

[3] Muslims account for nearly 15 percent of India's population but there are wide regional variations in their distribution. The Muslim population in Bihar stands at 17 percent which almost matches the religious composition at the national level but some parts within the state, including our study site Barharia, have higher concentrations. The proportion of Muslim in West Bengal is almost twice that of the all-India figure which is related to West Bengal's geographic proximity to Muslim-majority country Bangladesh which, together, earlier formed part of the Bengal Presidency before India's partition. West Bengal shares a land border with Bangladesh. Our study cluster Lalgola had an immigration check post that earlier allowed movement of goods and people across the border and this may have influenced the local demographics. Border traffic became restricted in 2005 and the post was entirely closed in 2010. Interviews with households and firms did not indicate any current impacts of the border location.

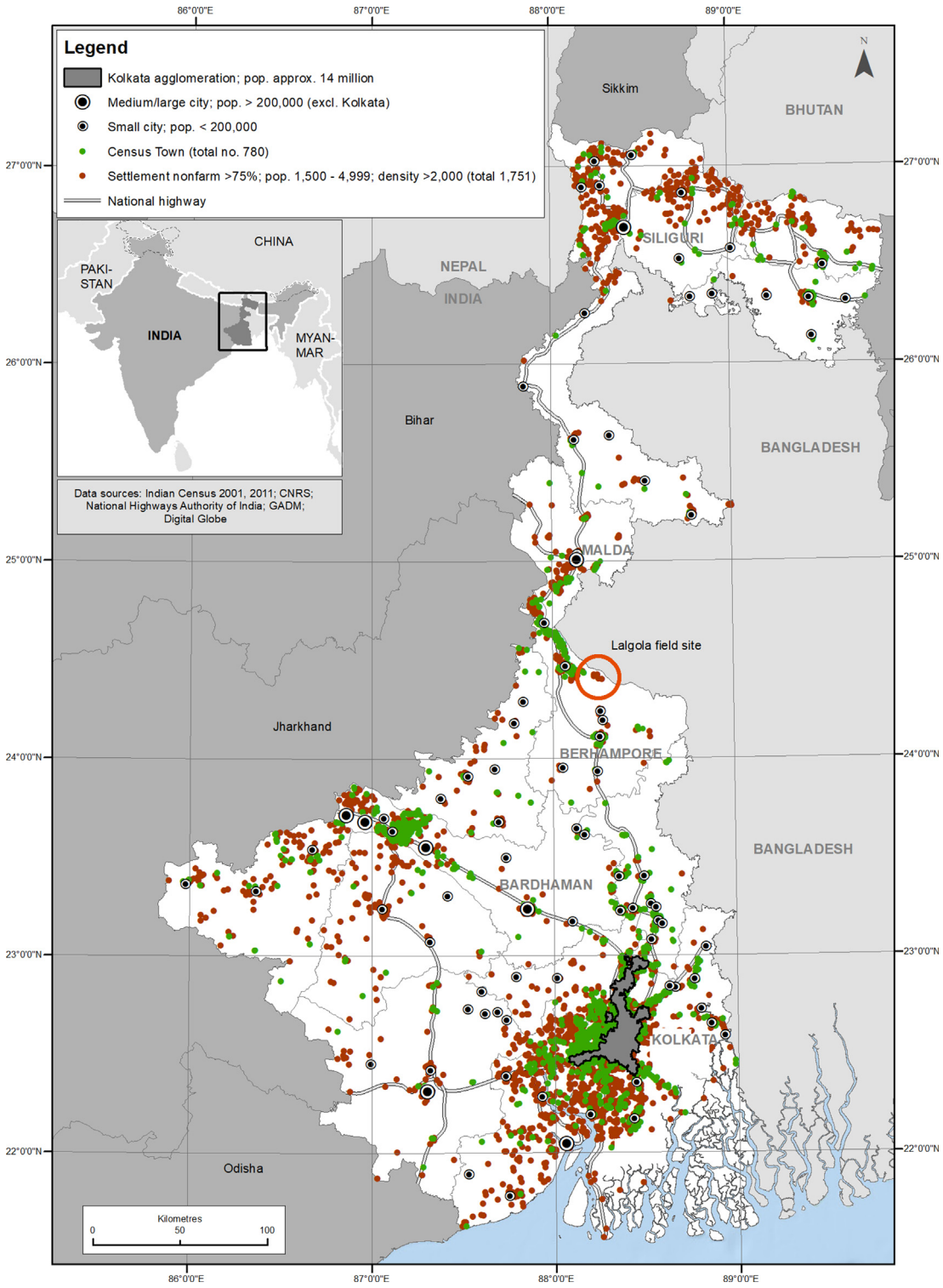

Fig. 3. West Bengal: Census Towns and settlements with high non-farm employment in the state's evolving urban system.

views, and findings from the interviews helped steer further statistical analysis of quantitative survey data.

5. Analysis: changing livelihoods in Barharia and Lalgola

In this paper, we concentrate on livelihood matters and we refer mainly to data from the surveys, occasionally complemented with findings from the interviews. In the course of data collection and subsequent analysis, it was quickly confirmed that the two sites, while sharing important commonalities, were also very different in some respects. Therefore, we will consistently discuss our findings in a comparative manner. This section covers four main topics: the shift of livelihoods out of agriculture; livelihood opportunities in the changing local economies; the role of migration in livelihood strategies; and the relation between livelihoods and well-being.

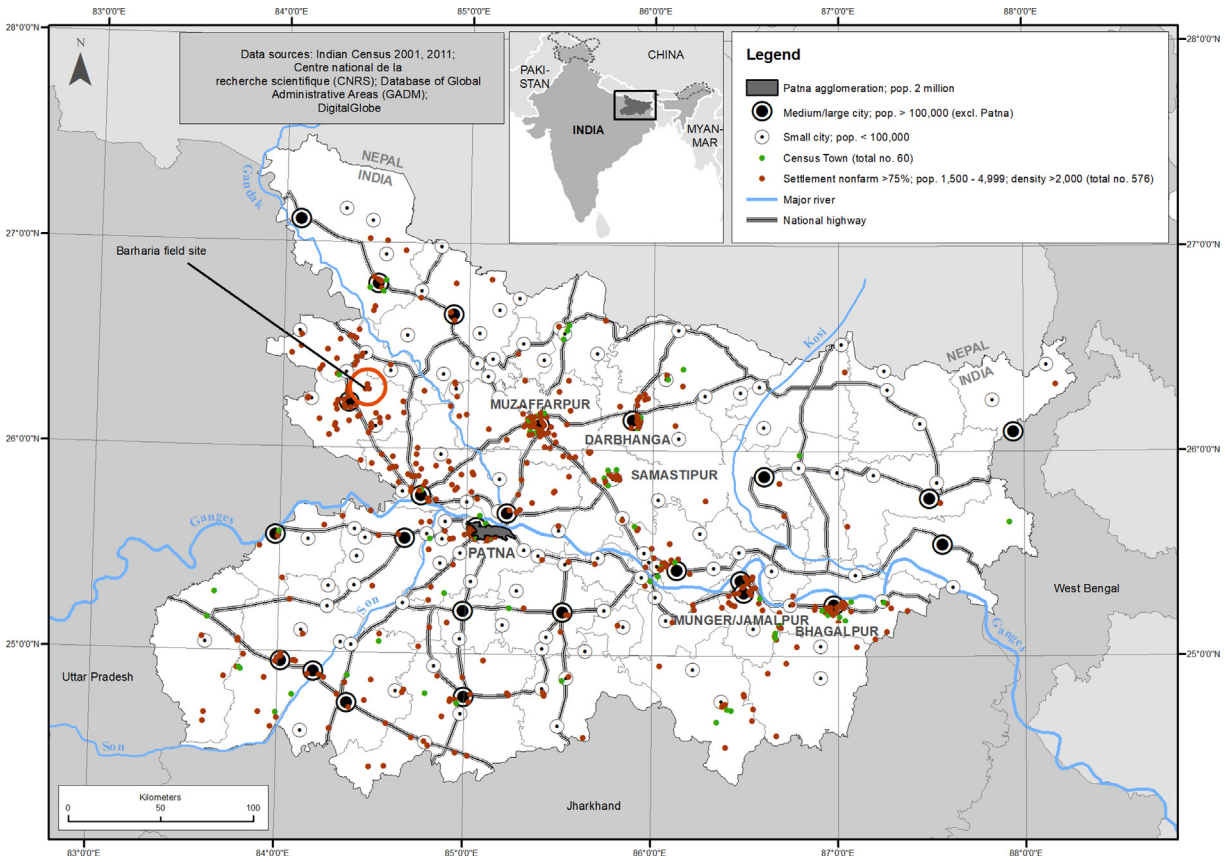

Fig. 4. Bihar: Census Towns and settlements with high non-farm employment in the state's evolving urban system.

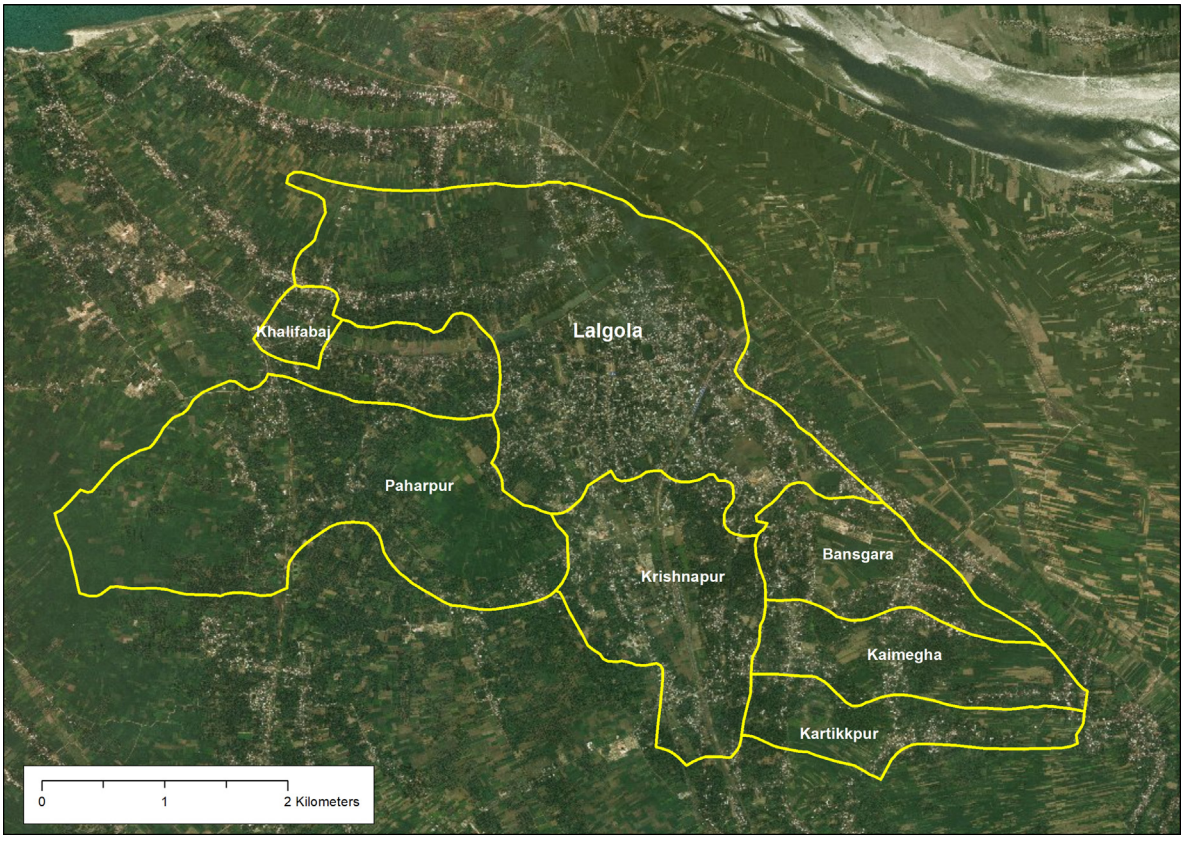

Fig. 5. The Lalgola cluster study site, West Bengal.

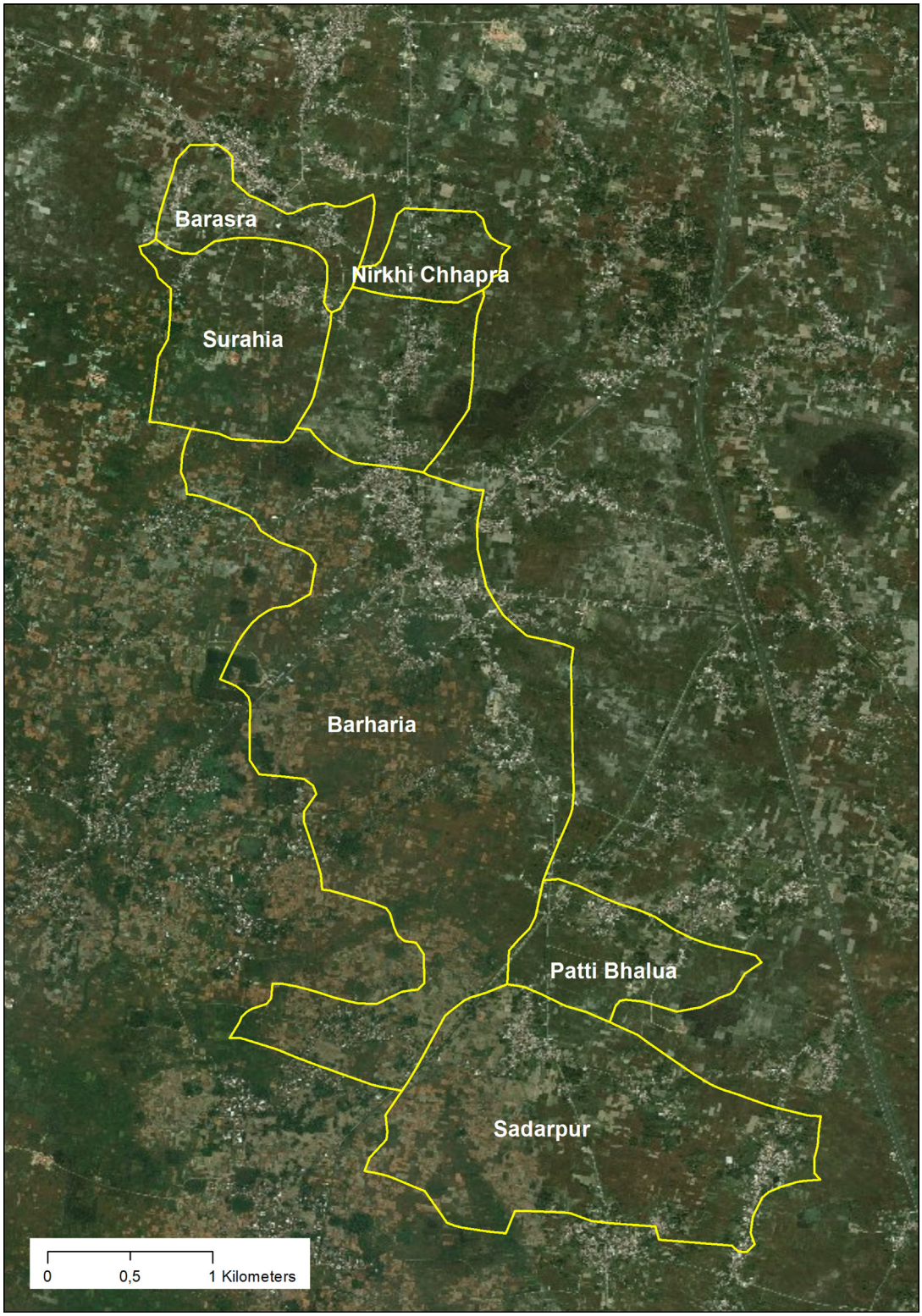

Fig. 6. The Barharia cluster study site, Bihar.

5.1. Occupational shift out of agriculture

First, we turn to the occupational shift out of agriculture at the two sites. Table 2 shows the share of households whose main breadwinners are currently farming, who were previously farming, and households of which the father of the main breadwinner was farming. At both sites, less than nine percent of main breadwinners are today in farming. The shift out of agriculture is more recent, and is currently faster, in Barharia than in Lalgola. Barharia has about twice as many breadwinners who were previously in farming and many more who were in farming only a generation ago. In other words, in Lalgola the occupational shift occurred earlier

Table 2
Shifts out of agriculture: main breadwinners with primary occupation in agriculture (farmers and farm workers), household size, and nuclear households, 2019.

	Barharia (N = 308)	Lalgola (N = 337)
Main breadwinners currently in farming (%)	8.8	8.1
Main breadwinner previously in farming (%)	21.7	10.1
Main breadwinner's father primary occupation in farming (%)	42.9	27.7
Average household size	7.5	5.3
Nuclear households (%)	58.1	76.0

than in Barharia. If household nuclearization and declining household size are taken as a general corollary of urbanization, then the substantially smaller average household size and higher prevalence of nuclear households (as opposed to extended households) in Lalgola (Table 2) underscore the earlier timing of the rural–urban transition in Lalgola, compared to Barharia.[4]

Notwithstanding the substantial occupational shifts away from the primary sector, we also observe continued engagement with certain elements of agrarian livelihoods and lifestyles. Table 3 summarizes data on landownership and livestock ownership. In Barharia, over 70 percent of households own agricultural land, compared to 33 percent in Lalgola. Landholdings in Lalgola are smaller, with only 5 percent of households owning more than an acre, compared to 20 percent in Barharia. These numbers suggest, again, that Barharia's transition from rural to urban livelihoods is more recent.[5] At any rate, with only 12 percent of all households owning more than one acre of land, the vast majority would not be able to secure a stable livelihood in farming. Indeed, a comparison of Tables 2 and 3 indicates that many landowning households do not actually farm their land professionally. Instead, as many of the interviews also indicated, land often functions as an important part of households' dynamic livelihood strategies: sometimes it is leased out; sometimes it is cultivated for the household's own food needs; sometimes it is kept as an insurance for possible future needs; and often it serves as a symbol of status. We will return to the importance of land ownership later.

Another element of continuing agrarian lifestyles is expressed in the ownership of livestock, which is still quite common at both sites: 49 percent of households in Barharia and 35 percent in Lalgola reported owning livestock (mostly goats and cows and ranging from a few to a dozen or more). We found that owning livestock is rarely a commercial undertaking: even more than with land, it serves to complement food strategies, as an insurance commodity when needed, and it sometimes reflects cultural or communal traditions and identities (e.g., among the Goala/Ahir caste and the Muslim community, the latter slaughtering some of their livestock during Eid).

5.2. Livelihoods beyond agriculture

What of the new livelihoods beyond agriculture? Of all households, 59 percent in Barharia and 72 percent in Lalgola reported their main breadwinners worked locally (defined here as inside the settlement cluster or within daily commuting distance). On the flip-side, this implies that, across the two sites, about one-third of main breadwinners worked elsewhere, i.e., as migrants.

[4] According to 2011 Census figures for all of India, average rural and urban household sizes were, respectively, 4.66 and 4.94 (also see Rajesh, 2018); there is a logical negative association between household size and the prevalence of nuclear households.

[5] Though it should be noted that rural landlessness has historically been particularly salient in West Bengal (see, e.g., Bardhan et al., 2014; De Haan, 1997a).

Table 3
Households owning agricultural land or livestock, percentages, 2019.

	Barharia (N = 308)	Lalgola (N = 337)
Not owning agricultural land	28.6	66.8
Owning up to one acre	51.6	28.2
Owning more than one acre	19.8	5.0
Owning livestock	49.0	35.3

Table 4
Primary occupation of main breadwinners working locally, percentages, 2019 (excluding households with main breadwinners who are migrants).

	Barharia (N = 183)	Lalgola (N = 243)
Farmers/Farm workers	13.1	10.7
Business owners	36.1	35.0
Non-farm manual workers*	23.5	23.0
Construction workers‡	10.9	10.3
Current/retired government employees	9.9	13.2
Hawkers	2.7	6.2
Educated professionals (doctors, lawyers, engineers, teachers)	3.8	1.6

*E.g., drivers/transporters, electricians, welders, carpenters, tailors, plumbers, piper-fitters, painters, security workers, sanitation workers, bidi makers, metal workers. Many of these workers tend to be involved in petty manufacturing, repairs, etc.
‡Construction workers are typically routinely involved in new construction projects and move from one (local) job site to the next.

We will pay due attention to migration but first let us have a closer look at *local* livelihoods.

Table 4 presents data on the current primary occupation of main breadwinners. The two sites exhibit some important commonalities. First, the data confirm again that farming is of minor significance: farmers/farm workers represent 13.1 percent and 10.7 percent in Barharia and Lalgola, respectively (these numbers are slightly higher than in Table 2 because Table 4 pertains to the local workforce only). Farming employment is roughly on a par with government employment, and in Lalgola it is even well below that. Second, at both sites a large share of breadwinners (more than a third) were self-employed, owning businesses. These businesses were typically in retail (e.g., grocery stores, kiosks, jewelry stores, restaurants, electronics stores etc.); small-scale in nature; and employing family labor. These numbers on self-employment at the two sites are not different from national level statistics on rural non-farm or urban workforce structure where self-employed constitute about 40 percent of total workers, and where the lack of availability of jobs in the formal sector is considered widespread (Himanshu et al., 2013; Chen & Raveendran, 2014). The businesses proliferated over the past decade, particularly in Barharia, and interview data revealed that business investments were often funded with remittances, especially from international labor migrants. Third, at both sites, less than a quarter of main breadwinners is categorized broadly as non-farm manual workers, and around 10 percent are construction workers. The latter reflects substantial local housing construction in recent years. The construction sector also provides some of the (more occasional) employment of other manual workers. Nearly half of all households across the two sites reported they built their current house within the past 10 years, with many households converting their *kutcha* houses (unfinished, temporary) into more permanent structures. Finally, the number of educated white collar workers at both sites was virtually negligible. Comparing these numbers in our study settlements with national statistics on employment shows that a key difference relates to manufacturing: it accounts for nearly a quarter of employment in urban India (Chen &

Raveendran, 2014), but is conspicuous by its absence in our study sites.[6] That said, livelihoods in manufacturing are also challenging in large urban centers in India (Nijman, 2015b).

Some of the differences between the two sites were idiosyncratic, especially in regard to women's roles. In Barharia, most women only worked in household agriculture, with the exception of landless lower-caste families whose women worked on others' farms for cash incomes (also see Choithani, 2020); in Lalgola, a common job for women was in the small-scale *beedi* industry, rolling coarse tobacco in *tendu* leaves from the confines of their homes. Lalgola has less than half the educated professionals and more than twice the number of hawkers as in Barharia. This suggests a difference in precarity or well-being, a matter we will discuss in more detail later on.

5.3. The role of migration

Let us now turn to the role of migration. We noted above that about one-third of all households reported their main breadwinner was a migrant. This still does not fully capture the importance of migration: some households had a migrant worker who is not the main breadwinner and some households had multiple migrant workers. In all, nearly half of all surveyed households across the two sites reported having migrants. Almost all of this concerned labor migration, long term or short term, and almost all involved male migrants.

Table 5 shows the breakdown of households with any migrants, domestic (internal) migrants, and international migrants. There are some stark differences between the two sites: First, Barharia had substantially more migrant households than Lalgola: 52.3 percent compared to 38.6 percent. Second, in Barharia migrant households were evenly split between domestic and international migrants while in Lalgola virtually all migrants were domestic.

Fig. 7 maps the migration flows from both sites. Migration from Lalgola was predominantly for construction work to large Indian cities. Kolkata has long been a primary popular destination due to its proximity but longer-distance migration to cities in south India including Bangalore, Hyderabad, Chennai and Kochi is increasingly preferred because of more regular work and higher wages. Domestic migrants from Bihar were also often in construction and their destination cities were predominantly in northwest India, mainly Delhi and Mumbai. International migration from Barharia was mainly to the Gulf States for work in construction, oil and gas plants (e.g., welders, pipe-fitters, electricians), taxi services, cleaning services, etc.

Another important difference between the two sites concerns the period of time that households have experienced labor migration (measured in terms of the time current migrants have worked away from home): our data indicate it is a more recent phenomenon in Barharia than in Lalgola (see Table 6). In Barharia, for more than a third of households with domestic migrants, this experience dates back only two years, and for 61.8 percent it dates back only five years. In Lalgola, the corresponding numbers are 13.8 percent and 28.4 percent. The large majority of Barharia's international migrants, 82.6 percent, did not leave home until 10 years ago.

At first sight, this appears to contradict what we know about the long history of migration in Bihar (e.g., De Haan, 2002; Tumbe, 2012). But much of that history pertains to *seasonal* migration, closely tied to the agricultural cycle, and for migrants and households that still relied mainly on agricultural livelihoods; reason for Yang (1979, 50) to refer to them as "optimizing-peasant migrants." Today, with the massive occupational shift out of agriculture, that type of seasonal migration is being rapidly replaced with the more permanent, longer-duration kinds of labor migration. Our data reveal that nearly 60 percent of migrants from Barharia spent more than 6 months away in the year preceding the survey, and median duration of migration in the past year was 8 months. Thus, the different timing of migration in the two sites suggests, once again, that Barharia's rural–urban transition has occurred later than in Lalgola.

Table 5
Households with labor migrants as a percentage of all households, 2019.

	Barharia (N = 308)	Lalgola (N = 337)
Households with any labor migrants (%)	161 (52.3)	130 (38.6)
Households with domestic migrants (%)	81 (26.3)	123 (36.5)
Households with international migrants (%)	80 (26.0)	7 (2.1)

Our data show that the propensity to migrate did not vary significantly across class or caste[7] but some associations are worth mentioning. Most important, in Barharia, Muslim households were disproportionately involved in international migration: Muslims represented 38 percent of the overall Barharia sample but accounted for 56 percent of households with international migrants. Interview data on this topic revealed this religion-based selectivity was linked to the "first-mover advantage" and social networks. Migration from the western Bihar region to the Gulf States started in the 1990s and Muslim households were the first to respond to this opportunity in view of cultural (religious) and dietary traits of the receiving countries. International migration among Hindu communities has grown in recent years and the religious basis of migration has started to narrow but Muslim households still outnumber Hindus.

Another important variable associated with migration is the level of education of the head of the household. At both sites, education levels were lower for households with domestic migrants than for households without migrants; in Barharia, levels of education were the highest for households with international migrants. As we will point out below, education levels and migration are also both associated with income and overall well-being.

5.4. Livelihoods and well-being

How do shifting livelihoods affect the standard of living or well-being? As we discussed in section 2 of this paper, there is considerable evidence, if scattered and inconsistent, of the precarious nature of agricultural work. With nearly half of all household depending at least in part on labor migrant remittances, it should be evident that the local options for better livelihoods are limited.

Table 7 compares average per capita incomes for selected households: those with income only from agriculture, those with income from local non-farm work only, and those with income only from remittances. Note that many households actually rely on a combination of income sources (49.8 percent in Barharia, and 56.1 percent in Lalgola) so this table covers only part of the population; it serves to contrast the different income levels associated with farming, local non-farm work, and labor migration. The differences are stark, indeed. Incomes from farming are by far the

[6] Our overall project also involved surveys with local businesses in our study sites. Our firm surveys recorded a few small-scale manufacturing units such as a chemical manufacturing firm that produced washing detergents, firms that made steel window and door frames etc. But these were scarce and generated very little local manufacturing employment.

[7] Though, among Hindus, Brahmins (especially) and Dalits were less likely to migrate than most others. The former may be reluctant to give up their local privileged position, and the latter tend to lack the necessary assets (networks, education, and financial means) to initiate migration. But our fieldwork revealed that lower castes are migrating more than before. A recent study of Konkan, Maharashtra, also showed that migration propensities among disadvantaged caste groups caught up over time with other social groups (Vartak, Tumbe & Bhide, 2018).

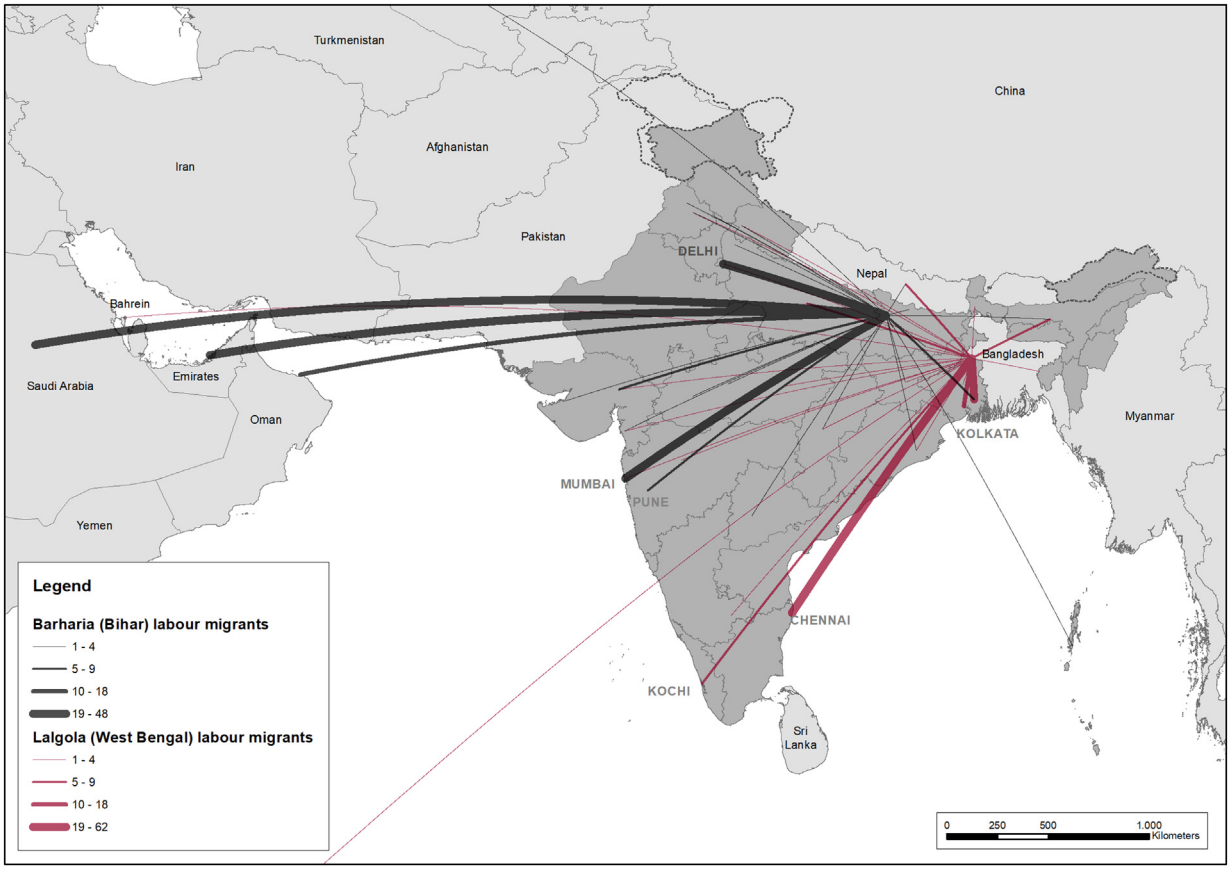

Fig. 7. Labor migration flows from Barharia and Lalgola, 2019; Source: Primary Data 2019; Barharia 216 migrant moves recorded; Lalgola 180 migrants moves recorded.

Table 6
Period of time current migrants have worked away from home, percentage of households, 2019.

	Barharia		Lalgola
	Domestic	International	Domestic
Up to 2 years	34.6%	23.8%	13.8%
2 to 5 years	27.2%	28.8%	14.6%
5 to 10 years	23.5%	30.0%	35.8%
10 to 15 years	8.6%	8.8%	15.4%
15 + years	6.2%	8.8%	20.3%
Number of households (N)	**81**	**80**	**123**

lowest at both sites and only a fraction of households is able to exist on the basis of farming alone.[8] In Barharia, incomes from local non-farm work are almost twice as high as from farming, and for Lalgola they are nearly three times higher. Incomes from remittances in Lalgola are lower than local non-farm work, but in Barharia they are much higher – and this has to do with the important distinction between domestic versus international labor migration. This also explains overall higher average incomes in Barharia than Lalgola, even if the differences in overall per capita incomes are narrowed by bigger family size in the former (Table 2). Similar household-level income data are not available at the state or national levels but comparison with data on per capita state domestic product show that incomes in Barharia are 40 percent higher than Bihar's average whereas incomes in Lalgola are 40 percent lower than West Bengal's average. Clearly, Barharia's integration in international labor circuits provides it with relatively high remittance incomes.

The importance of international migration is also reflected in Table 8, that differentiates average total incomes among households without migrants, with domestic migrants, and with international migrants. Comparing these three categories of households, it shows that at both sites, households with domestic migrants have the lowest incomes. Household incomes in Lalgola are generally lower than in Barharia, though it should be remembered that household sizes are also smaller in Lalgola, potentially making the difference less acute. Another difference between the two sites lies in the presence of households with international migrants in Barharia, for whom incomes are much higher, and their virtual absence in Lalgola. The distinction between domestic and international migrants is critical: domestic migrants are associated with the lowest-income households, international migrants with the highest. In Barharia, the households without any migrants are situated in-between.

A similar pattern applies to other measures of well-being (Table 9). In Lalgola, non-migrant households do consistently better than domestic migrant households in terms of food security, having a toilet in the home, and owning smart phones, TVs, and motorbikes. In Barharia, the difference in well-being between non-migrant and domestic migrant households is less clear-cut but international migrant households, as with income measures, fare much better than others. The difference between the two sites in food security among households with domestic migrants is quite striking (Lalgola doing considerably worse than Barharia). One explanation lies in the much greater importance in Barharia of continued landownership (see Table 3), allowing poor households to complement their food sources. It illustrates that the more

[8] At both sites, nonfarm sources accounted for over 90% of aggregate household incomes and interview data underscored that the key purpose of agricultural work was to meet household food needs.

Table 7
Average annual per capita household incomes in rupees, by exclusive income source, 2019*.

	Barharia (N = 283)		Lalgola (N = 303)	
Households with income exclusively from...	% of households	household income	% of households	household income
agriculture	1.8	15,301	1.3	14,828
local non-farm	31.4	28,896	38.0	43,243
migrant remittances	17.0	61,813	4.6	42,357
Income from all sources	100.0	44,031	100.0	42,471
Per capita state domestic product, 2018–19 (in Rs.)‡	31,287 (Bihar)		71,757 (West Bengal)	

*Four households chose not to report their incomes, and households who reported any income from social welfare transfers are also excluded here.
‡Data source for per capita state domestic product: Ministry of Statistics and Programme Implementation, Government of India, 2020.

Table 8
Average annual total household incomes, for households with or without remittances from domestic and international migrants, in rupees, 2019. Total incomes often include other sources than remittances.

	Barharia (N = 304)*	Lalgola (N = 337)
Total incomes of households with domestic migrants	194,103	156,024
Total incomes of households with international migrants	335,200	‡
Total incomes of households without migrants	201,746	184,536
Total income – all households	234,879	174,237

*Four households chose not to report their income in Barharia.
‡ N (7) is too small to calculate reliable average.

Table 9
Percentage of migrant- and non-migrant households reporting food security and selected household assets, 2019.

	Barharia			Lalgola	
Percentage of households that reported	Non-Migrant	Domestic Migrant	International Migrant	Non-Migrant	Domestic Migrant
Being food secure*	53.1	59.3	67.5	51.7	31.7
Having a toilet on the premises‡	70.7	69.1	78.8	75.7	71.5
Owning a smart phone	61.2	69.1	82.5	52.7	35.0
Owning a TV	50.3	50.6	58.8	72.0	52.8
Owning a motorbike	53.1	45.7	73.8	29.5	19.5
Households (N)	**147**	**81**	**80**	**207**	**123**

* see Appendix 1.
‡ Dry toilets, open sewerage, or septic tanks.

Table 10
Multiple linear regression model predicting standard of living in Lalgola. Independent variables are listed in order of beta values (N = 337). For Standard of Living Index, see Appendix 2.

	Beta Coefficients	Std. Error
Main breadwinner works as a farmer/farm worker	−3.299***	1.068
Size of land owned ‡	2.180***	0.509
Muslim household	−2.098***	0.586
Main breadwinner has multiple jobs	−1.885*	0.850
Main breadwinner is a domestic migrant	−1.672*	0.670
Level of education of head of household‡	1.661***	0.220
Spouse of the main breadwinner has a job	−1.581***	0.567
Main breadwinner owns a business	1.442*	0.664
Number of additional income-earning household members‡	1.121***	0.306
R^2	**0.384**	
Adjusted R^2	**0.365**	

Significance levels: * p < 0.05; ** p < 0.01; *** p < 0.001.
‡ indicates categorical variable; all other independent variables are dichotomous.

advanced severance from agriculture in Lalgola (or, the prevalence of landlessness), carries a risk in terms of wellbeing.

In this section, we have discussed several factors that are likely to influence the standard of living among households at the two sites, such as education level, land ownership, or having migrant workers. To be sure, other variables are in play as well and our data collection covered more than we have been able to discuss. To gain a fuller understanding of the various influences on well-being and to get a better appreciation of their relative importance, we designed multiple linear regression models predicting the overall standard of living for households at both of the sites. For the dependent variable, we created a Standard of Living Index, a

Table 11
Multiple linear regression model predicting standard of living in Barharia. Independent variables are listed in order of beta values (N = 308). For Standard of Living Index, see Appendix 2.

	Beta Coefficients	Std. Error
Main breadwinner owns a business	3.552***	0.802
Household has international migrant(s)	2.242***	0.669
Muslim household	2.106***	0.583
Spouse of the main breadwinner has a job	−1.964	1.171
Level of education of head of household‡	1.724***	0.218
Land owned (categories)‡	1.584***	0.433
Main breadwinner works as a farmer	−1.284	1.013
Number of additional income-earning household members‡	0.828**	0.290
R^2	**0.382**	
Adjusted R^2	**0.365**	

Significance levels: * p < 0.05; ** p < 0.01; *** p < 0.001.
‡ indicates categorical variable; all other independent variables are dichotomous.

weighted index that comprises four key measures of income, various household assets, housing characteristics, and food security (see Appendix 2). We tested the models with usual checks of robustness. The results are summarized in Tables 10 and 11, for Lalgola and Barharia, respectively.

Given our previous allusions to some important differences between Lalgola and Barharia, it is not surprising that the models differ in terms of the predictive value of some of the key independent variables. For Lalgola, the single most important predictor of well-being is the main breadwinner being a farm worker, with a strong negative impact. Interestingly, the second strongest predictor is landownership, with a strong *positive* impact. This suggest a continuing legacy of traditional agrarian class structures, even if Lalgola's rural–urban transition has been underway for a long time (also see Parthasarathy, 2015; Cowan, 2018; Gururani, 2019). Other independent variables with a notable negative impact are the main breadwinner having multiple jobs and the main breadwinner being a domestic labor migrant, both indications of precarity.

The regression for Barharia paints a different picture. The single most important predictor of well-being is the main breadwinner owning a business (strong positive impact), followed by the household having an international migrant (also a strong positive impact). Interview findings indicated that many of the households owning a business used to have (or still had) international migrant(s) whose remittances were invested to start the business. Interestingly, the religious status of the household or, more precisely, the household being Muslim, has a reversed influence in the two sites: in Barharia, being Muslim has a strong positive influence on well-being, as it is associated with international migration opportunities in the Gulf States; in Lalgola, where international migration is near-absent, being Muslim has a notable negative influence on well-being, as it generally does elsewhere in India. In Lalgola, Muslim households were not nearly as networked with international migration circuits as in Barharia.[9]

Overall, our analysis confirms that the shift of livelihoods out of agriculture is much advanced at both sites but occurred at an earlier stage in Lalgola. It also shows that, at both sites, alternative local livelihoods are very limited and labor migration, along with dependency on remittances, is quite common. While international migration in Barharia renders relatively high levels of well-being, domestic labor migration, at both sites, generally appears to be born of despair.

6. Conclusions

In this research, we investigate changing livelihoods at India's rural–urban transition at two sites in Bihar and West Bengal. Our analysis focuses on the occupational shifts out of agriculture, alternative livelihoods in the local economy, the role of migration in livelihood strategies, and the ramifications of evolving household strategies for well-being.

The key findings can be summarized as follows:

1. At both sites, the shift out of agriculture is highly significant, with less than 9 percent of main breadwinners still working in farming. But in Barharia this change has come considerably later (about one generation). Lalgola's longer history of the shift away from agricultural livelihoods is also reflected in the much smaller share of households that (still) owns agricultural land and a smaller share that holds livestock.
2. The options for new livelihoods in the local economy are limited at both sites. Some find employment in construction or other manual labor jobs and more than a third had started small businesses, usually in retail. Lalgola's longer history of employment shifts out of agriculture does not translate in more developed secondary or tertiary employment sectors.
3. In total, nearly half of all households (45.1 percent) had one or more migrant worker but Barharia's share (52 percent) was substantially larger than Lalgola's (38.6 percent). For migrant households, remittances accounted for nearly two-third (65.4 percent) of average annual incomes. In recent years, labor migration has become a more important part of livelihood strategies, especially in Barharia where the push out of agriculture is more recent. In Barharia, there is evidence that traditional seasonal labor migration is being replaced by more permanent, longer-duration labor migration that is no longer tied to the agricultural cycle.
4. Lalgola's circular labor migration patterns concern almost exclusively domestic migration with Kolkata and Chennai as primary destinations. In contrast, Barharia's migration patterns are split evenly between domestic and international labor migrants, the latter mainly destined for the Gulf States.
5. The salience of international migration in Barharia and its near-absence in Lalgola is attributed mainly to institutional ties and migrant networks (or the lack thereof). Most households with international migrants in Barharia are minority-Muslim, an indication of the importance of communally embedded networks in the explanation of migration.

[9] International migration has allowed the Muslim community to change their fortunes in Barharia. Our interview data show that prior to labor migration to the Middle East, Muslims in Barharia were not significantly better off than their counterparts in Lalgola. While a larger share of the Muslim population in Barharia owned land than in Lalgola (68% versus 48%), this was mainly a reflection of the overall lack of land ownership in West Bengal, regardless of religion (in our surveys, 71% of all households in Barharia owned land, compared to 33% in Lalgola).

6. Households with international migrants are among those with the highest incomes while those with domestic migrants tend to have the lowest incomes, with non-migrant households in-between. It appears that domestic labor migration is a last-resort strategy for the poorest households, while international labor migration is considered an opportunity for advancement.
7. The strongest predictors of household well-being in Lalgola are employment of the main breadwinner in agriculture (negative) and landownership (positive). Doing farm work rarely implies ownership of the land, while landownership is a broad indicator of household assets and does not mean the main breadwinner actually works the land. This suggests a strong legacy of agrarian class relations and little signs of developing secondary and tertiary sectors.
8. In Barharia, the strongest predictors of well-being are the ownership of a business and the household having an international migrant (both positive). International migration is proving a significant option for about a quarter of all households and remittances are often used to start up a business. The shift away from agriculture is more recent and more swift and social mobility (for some) appears more salient than in Lalgola.

These findings add up to a few important general observations. First, if our two sites are more or less representative of India-wide trends, the economic transformation over the past couple of decades is momentous. In theoretical terms, akin to the sustainable livelihood approach, the external conditions of formerly rural livelihoods have undergone fundamental change and household strategies have had to adapt. Stereotypical views of India's majority population relying on agricultural livelihoods, without change, one generation to the next, are rapidly disappearing in the rear-view mirror. We suspect that similar trends are witnessed in tens of thousands of villages and new Census Towns across the country, affecting hundreds of millions of people, presently and in the foreseeable future. The employment shift out of agriculture is without doubt, but households also face major challenges in forging alternative livelihoods. The local economy in these heretofore agricultural regions offers scant opportunities and shows no signs of strongly developing secondary and tertiary sectors. It is clear that labor migration offers a way out for many households. Migration has a long history in India but today it seems more important than ever and its nature has structurally changed: the notion of the optimizing peasant migrant belongs to the past and seasonal migration (following the agricultural cycle) is firmly replaced by more permanent forms of circular labor migration that provide the mainstay of income for many households.

At the same time, our comparative analysis indicates that India's rural–urban transition is not happening everywhere synchronously and in the same manner. The shift out of agriculture has a longer history in some places than others and migration patterns, too, can be embedded in historical–geographical context. International migration tends to be particularly reliant on social networks that vary from one community and place to the next. This is significant because remittances from international migrants are much higher than from domestic migrants. Lalgola appears to represent the kind of place where the shift out of agriculture has a long history but its local economy has shown little signs of restructuring or growth; and international migration is virtually non-existent. Barharia's transformation is more recent and it is presently more dynamic, and international migration plays a big part in the recalibration of livelihoods.

Our findings should alert policy makers and inform development strategies at various levels. It has been argued before that policies should not constrain but instead facilitate labor migration (e.g., De Haan, 2002; De Haas, 2005). This issue seems to have become much more acute in recent years because it is critical to the livelihoods of rapidly growing numbers of people. Evidence from many areas of the global South shows that while migration experience and outcomes are not the same for all individuals and households, mobility plays a growing role in livelihood strategies (Rigg, 2006; Rigg, Nguyen & Luong, 2014). Labor migration can be facilitated through legislation on workers' rights, households' bargaining position dealing with migratory networks and middle men, easing transportation and money transfers, and improving labor conditions including health care provision. This is particularly relevant in regards to domestic labor migration because it falls entirely under Indian jurisdiction *and* because it involves the poorest households. India's government is not alone in its penchant to celebrate (international) labor migration as "some form of neo-liberal self-help development from below" that provides a critical inflow of remittances into the national economy (De Haas, 2010, 227; Kapur, 2004). A strong pro-active policy stance is needed to simultaneously stimulate local economic restructuring and livelihood opportunities *and*, as long as these local economies are insufficiently developed, to facilitate and improve the conditions for domestic labor migration.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Data Statement

This data that support the findings of this study were collected by the authors, are subject to ongoing analysis, and are not publicly available at this time.

Appendix 1. Food security index

In our survey, respondents were asked if, at any time during the past four weeks, members of the household experienced food insecurity. Food insecurity was assessed through five questions on self-

reported, involuntary food behaviors arising due to lack of resources.

These questions recorded the following indicators of food *in*security:

1) household members worried that they wouldn't have enough food to eat (1 point);
2) any household member had to eat limited variety of food (1.5 points);
3) any household member ate a smaller meal than needed (1.5 points);
4) there was no food to eat of any kind (2 points);
5) any household member went a whole day without food (2 points).

This rendered a scale of 0 to 8. Households were then categorized in three classes: those with a score of 0 were classified as *food secure*; those with scores of 1 to 4 as *moderately food secure;* and those with scores higher than 4 as *food insecure*.

Appendix 2. Standard of living index

We constructed a 30-point Standard of Living Index (SLI). This index centers on four key categories including household's monthly per capita income (MPCI), household assets, quality of the household dwelling, and food security.

The weighting of each of these categories within the SLI was done as follows:

a) MPCI – upto Rs. 2000 = 1; 2001 to 4,000 = 2; 4,001 to 6000 = 3; above 6000 = 4;
b) Household assets: 2 points each for ownership of a television, refrigerator, smartphone, motorbike / two-wheeler, and 4 points for car ownership;
c) The quality of the household dwelling was assessed through the following criteria: LPG connection, piped water connection, toilet (2 points each); subjective assessment of the dwelling by the surveyor as either *kutcha* = 0, *semi-pucca* = 1, or *pucca* = 2 and size of the house (<500 sq. ft. = 0; 500 to 1,000 sq. ft. = 1; >1,000 sq. ft. = 2);
d) Household food security scores (see Appendix 1): food secure = 4; moderately food insecure = 2; severely food insecure = 0.

This rendered a scale of 0–30. Based on aggregate scores, households were divided into categories of *low SLI* (0–11), *medium SLI* (12–17), or *high* SLI (18–30).

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