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Mapping Seasonal Labour Migration in Grain Markets: Evidence from Agro-Climatic Zone I of Haryana, India

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ABSTRACT: Seasonal labour migration plays a significant role in meeting fluctuating labour demand in agricultural marketing systems. Haryana's grain markets attract migrant workers during the Rabi and Kharif procurement seasons, when the handling, packaging, loading and unloading of wheat and paddy generate substantial employment opportunities. This study examines the geographical patterns, spatial distribution and regional origins of seasonal migrant workers in the grain markets of Agro-Climatic Zone I of Haryana, India. The study covers eight districts—Ambala, Panchkula, Yamuna Nagar, Kurukshetra, Kaithal, Panipat, Karnal and Sonipat. Primary data were collected through a structured questionnaire administered to 746 male seasonal migrant workers across 26 selected grain markets, with 373 respondents surveyed in each of the Rabi and Kharif seasons during 2025–2026. Multistage stratified sampling was used to select grain markets and shops, while convenience sampling was employed to survey workers. The collected data were analysed using descriptive and statistical techniques and represented through maps, graphs and charts to identify migration flows and spatial variations. The findings reveal a strong geographical concentration of migrant labour from Bihar, which accounted for 82.98% of respondents, followed by Uttar Pradesh (10.99%), West Bengal (3.35%), Madhya Pradesh (1.61%) and Jharkhand (1.07%). Migration from Bihar was particularly concentrated in districts such as Purnia, Araria, Katihar and Kishanganj, indicating established source-region clusters. The spatial distribution of workers across the selected grain markets was uneven, with Karnal recording the largest district-level sample, followed by Kurukshetra and Yamuna Nagar. The observed patterns suggest that seasonal labour migration is associated with agricultural procurement cycles, employment availability, transport accessibility and established social and recruitment networks. The concentration of migrant workers in particular source regions reflects the combined influence of regional economic disparities, limited non-farm employment opportunities, fragmented agricultural landholdings and household livelihood requirements. In addition, kinship ties, fellow-villager contacts, labour contractors and previous employment experiences facilitate repeated migration and influence workers' destination choices. The availability of employment in both procurement seasons enables workers to organise their migration around recurring agricultural cycles. Differences in grain-market size, agricultural specialisation and transport connectivity further contribute to the uneven spatial distribution of migrant labour across the study area. The findings also demonstrate that established migration networks play an important role in connecting distant rural source regions with agricultural market centres in Haryana. The study highlights the

importance of a geographical perspective for understanding how seasonal migrant labour is organised in the agricultural market systems of Haryana's Agro-climatic Zone I grain markets.

1. INTRODUCTION

Seasonal migration is a significant form of labour mobility in rural India, especially in areas of regional and seasonal variation in the availability of economic opportunities. This includes the temporary migration of workers from areas with fewer employment opportunities to places with greater demand for labour at certain times. Seasonal migration is usually a livelihood option through which rural families increase their income and manage with limited employment at the place of origin. Seasonal migration has increasingly become a significant livelihood and income-earning option rather than only a response to economic challenges (Rogaly and Coppard, 2003). India is one such country where internal labour migration is more important than international labour migration in terms of the number of individuals participating and possibly even the volume of remittances. According to Tripathy and Dash (1997), labour migration is a type of labour mobility that occurs in areas or States where employment and industry are growing. It has a clear rhythm or flow, influenced by business, industrial, and agricultural activities in migration centres. According to the Census 2011, there were 455 million internal migrants in India, of whom 194 million (Migration Tables, D6, 2019) were workers, with the majority working in the unorganised sector (cultivation and plantations, construction sites, brick-kilns, mines and quarries, agro-processing industries, service or transport sectors, etc.), which is characterised by extreme seasonality of employment, the occurrence of casual and contractual employment, and the absence of social security measures and welfare. The NSSO 64th round shows an increase in seasonally migrated workers, with an estimated 15.2 million short-term migrants. By state, Bihar has the highest seasonally migrating labour (20,85,600), followed by Uttar Pradesh (18,96,500), West Bengal (15,28,400), and Madhya Pradesh (12,36,900) (Keshri & Bhagat, 2012). According to Haberfeld et al. (1999), seasonal migration in India is closely linked to the rural employment pattern and household livelihood arrangements. Because of its vast agricultural sector and well-developed grain procurement systems, Haryana attracts large numbers of seasonal migrant workers, especially during the wheat and rice procurement seasons. In agriculture, the timely availability of seasonal labour ensures crops are planted and harvested effectively, benefiting food security and the agricultural supply chain (Yadav, 2018). The concentration of agricultural arrivals in a short period causes a short-term but substantial demand for workers in grain markets. Migrant workers from states like Bihar, Uttar Pradesh, and Jharkhand work in this seasonal labour system and usually return to their home villages after the procurement season ends. Kaur et al. (2011) noted that agriculture in Northwest India has become increasingly dependent on migrant workers because of seasonal demand driven by intensive agricultural activities. Haryana, located in northern India, is renowned for its agricultural productivity and plays a vital role in the country's food security. In Haryana, the number of agricultural labourers increased from 1.27 million in 2001 to 1.52 million in 2011, reflecting the national trend. Most agricultural labourers are migrants, with numbers rising from 1.62 million in 1991 to 5.47 million in 2001 in Haryana. The nature, volume, and composition of migrant workers are essential to understanding how this labour system works. Migration is characterised by its seasonal, short-term, and circular nature, while migration volume indicates the number and distribution of migrant labour across different grain markets and procurement seasons.

1.2 Study Area

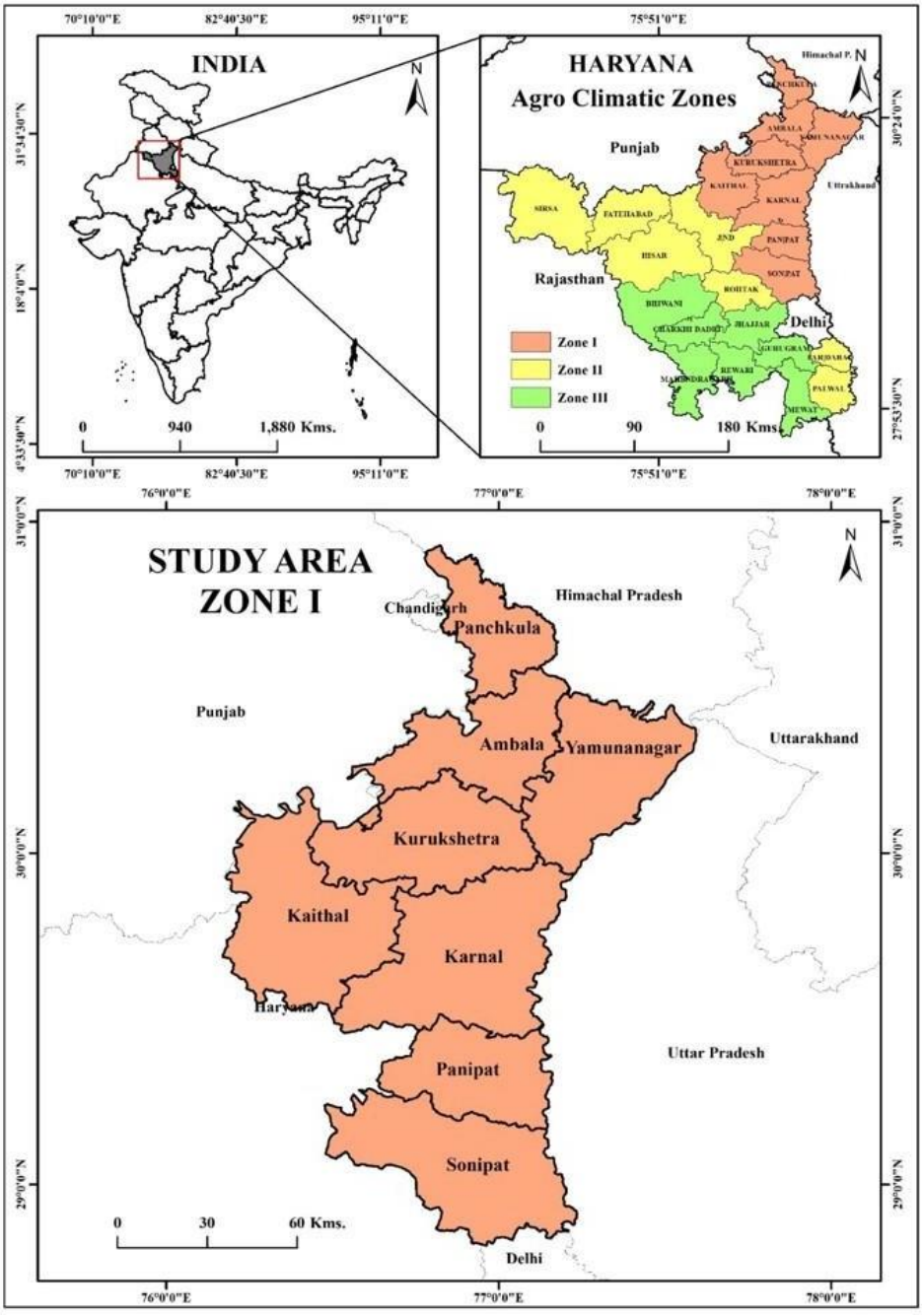
Based on ecology and cropping patterns, the state is also divided into three agro-climatic zones (Working Group Report on Productivity Enhancement of Crops in Haryana, Haryana Kisan Aayog, 2013). The Study area encompasses Agro-climatic Zone I of Haryana, which covers a significant portion of the state's territory, including Ambala, Panchkula, Yamuna Nagar, Kurukshetra, Kaithal, Panipat, Karnal, and Sonipat. Covering approximately 32 per Cent of Haryana's total area, this region holds paramount importance in the state's agricultural landscape.

In Agro-climatic Zone I of Haryana, 51 grain markets, or principal yards, are spread across various districts. Ambala district has 7 grain markets, including Ambala Cantt., Ambala City, Barara, Mullana, Naneola, Naraingarh, and Sahzadpur. Kaithal district has 8 grain markets, namely Kaithal, Cheeka, Dhand, Pundri, Kalayat, Siwan, Pai, and Rajound. Karnal district has 10 grain markets, including Assandh, Gharaunda, Indri, Jundla, Karnal, Kunjpura, Nigdu, Nilokheri, Nissing, and Taraori. Kurukshetra district has 7 grain markets, namely Babain, Ismailabad, Kurukshetra, Ladwa, Pehowa, Pipli, Shahbad, and Thanesar. Panchkula district has 3 grain markets named Barwala, Panchkula, and Raipur Rani. Panipat district has 5 grain markets named Bapoli, Israna, Madlauda, Panipat, and Samalkha. Sonipat district has 4 grain markets named Ganaur,

Gohana, Kharkhauda, and Sonipat. Yamuna Nagar district has 7 grain markets, including Bilaspur, Chhachhrauli, Jagadhari, Mustafa Bad, Radaur, Sadhaura, and Yamunanagar.

Overall, these districts together contribute to the total count of 51 grain markets in Agro-climatic Zone I of Haryana, reflecting the distribution and accessibility of agricultural marketing facilities across the region.

Map 1
Study Area



Source: Haryana Kisan Aayog, Government of Haryana.

1.3 Objective

To examine the volume, composition and patterns of seasonal migrant workers in the grain markets of Agro-Climatic Zone I Districts of Haryana.

1.4 Research Methodology

To conduct a comprehensive analysis, both primary and secondary data for Haryana were used. There are 7572 shops in 51 grain markets across 8 districts of Haryana in Zone I. To collect the primary data, Multistage stratified random sampling was used to select grain markets, shops and workers. All 51 grain markets were divided into 3 groups based on the number of shops in each market. Grain markets with fewer than 100 shops fall under Group I; those with 100 to 200 shops fall under Group II; and those with more than 200 shops fall under Group III. Then, 26 grain markets (50 per cent of total grain markets) were selected using simple random sampling. Using this method, 9 grain markets from the first group, 5 from the second group, and 12 from the third group were surveyed.

Furthermore, approximately 5 per cent of shops from each sampled grain market, comprising 184 shops in total, were surveyed. Additionally, 50 per cent of the average number of workers from each selected shop were surveyed, for a total of 746. Then, 373 workers in each of the Rabi and Kharif seasons were surveyed using convenience sampling. The study mainly used primary data collected through a detailed questionnaire schedule. The field survey in the present study was limited to male seasonal migrant workers. This is because the nature and structure of labour in the selected grain markets is male-oriented. Therefore, women's engagement in such work in the grain markets was very limited or non-existent. This gender-specific scope reflects the actual composition and labour requirements observed in the study area. It should not be taken to mean that female migrant workers are generally excluded from seasonal migration or agricultural labour in Haryana. To analyse the data, appropriate arithmetic and statistical techniques were used. Processed data were represented using appropriate cartographic techniques like graphs, charts and maps

2. RESULTS AND DISCUSSION

2.1 Age Composition of Seasonal Migrant Workers

Age is a socio-economic characteristic that significantly affects employment, work efficacy, income generation, and labour mobility. The age structure of migrant workers provides insights into the demographic profile of migration streams, labour availability, and workforce productivity. Their physical strength and working capacity often influence workers' participation, as agricultural marketing activities in grain markets (*mandis*) involve physically demanding tasks such as loading, unloading, carrying, stacking, de-stacking, and transporting heavy grain bags.

Table 1 Age Composition of Seasonal Migrant Workers

Age Group	**No. of Respondents**	**Per cent**
18–20	90	12
21–30	283	38
31–40	239	32
41–50	90	12
Above 50	44	6
Total	**746**	**100**

Source: Field Survey, 2025–26

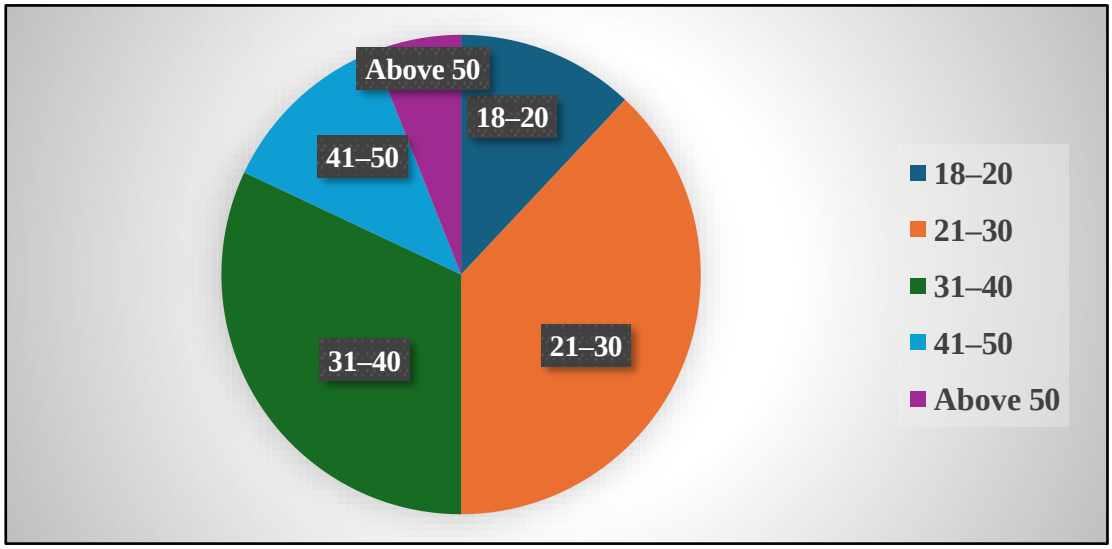
The primary survey conducted in selected grain markets of Haryana suggests that migrant workers are concentrated in economically productive age groups. Workers aged 21 to 30 are the most significant group, followed by those aged 31 to 40.

The *mandi*-related occupational group is primarily composed of young and middle-aged workers, as these two categories collectively account for approximately 70 per cent of the migrant workers.

The predominance of workers in the 21-30 years age group can be attributed to several reasons. Individuals in this age group are typically more motivated to engage in heavy manual labour, have higher physical stamina, and are generally in better physical health. Many of these individuals migrate from rural areas in Bihar, Uttar Pradesh, Jharkhand, West Bengal, and other states to seek better employment and higher incomes. At this stage in life, workers must meet domestic expenses, finance marriages, pay off debts, or provide for their families. As a result, they migrate seasonally to earn income. In the grain market, young workers have immediate job opportunities and need a temporary but reliable source of income.

Migrant workers aged 31 to 40 constitute the second-largest category. This age group is primarily engaged in seasonal migration for several years. Many migrant workers in this group have a strong understanding of labour management practices, procurement procedures, and *mandi* operations. In addition to their efficient performance, they often serve as senior workers in group responsibilities. Some migrant workers in this age group progressively undertake supervisory responsibilities, manage labour teams, or collaborate with shop owners (*Arhtiyas*) and labour contractors (*Thekedar*). Physical strength may begin to decrease slightly in this age group compared with younger workers; however, their established social networks and experience minimise this issue.

Figure 2 Age Composition of Seasonal Migrant Workers



Source: Field Survey, 2025–26

The 18-20 age group has a relatively small share of the labour market, which implies that very young workers are less likely to engage in seasonal migration to a significant extent. This is due to several factors. Younger individuals may find it difficult to adjust to unfamiliar work and living conditions, as many are still engaged in agricultural activities, vocational training, or education in their home areas. However, those who do migrate frequently travel with relatives, friends, or labour contractors and enter the labour market as new entrants. They can contribute to household income and gain work experience by participating in grain market activities.

Although older workers aged 41 to 50 continue to engage in *mandi* operations, their numbers are significantly lower than those of younger workers. The physically demanding nature of grain market labour is making it increasingly challenging for older individuals to maintain the productivity needed to load and unload heavy grain bags. As a result, many migrant workers in this age group prefer less physically demanding activities, such as operating small shop stalls within the *mandi* premises, stock monitoring, record handling, or supervision. Their persistent participation reflects the limited availability of alternative employment opportunities in their native regions and the need to maintain household incomes through seasonal migration.

Only a minimal number of migrant workers are over the age of 50. The low representation of elderly workers underscores the physically demanding nature of grain market employment. Physical strength is necessary for tasks such as lifting grain bags

bearing 50 kilograms or more, transporting produce, and working long hours in varying weather conditions. As a result, many workers discontinue manual labour after a certain age. Individuals who remain economically active often take on less demanding responsibilities, such as supervising labour teams, managing temporary activities, or assisting labour contractors. In addition, some older migrants serve as mediators between shop owners and migrant workers, using their experience and social connections within the *mandi* system.

Economically productive age groups are the primary drivers of seasonal migration to Haryana's grain markets, as evidenced by the overall age structure. The labour-intensive nature of *mandi* operations is underscored by the fact that approximately seven out of every ten workers fall within the 21-40 age category. The high demand for physically capable workers during procurement seasons is reflected in the concentration of workers in prime working ages. It also suggests that migration is a crucial livelihood strategy for young adults seeking employment opportunities beyond their home villages.

2.2 Place of Origin of Seasonal Migrant Workers

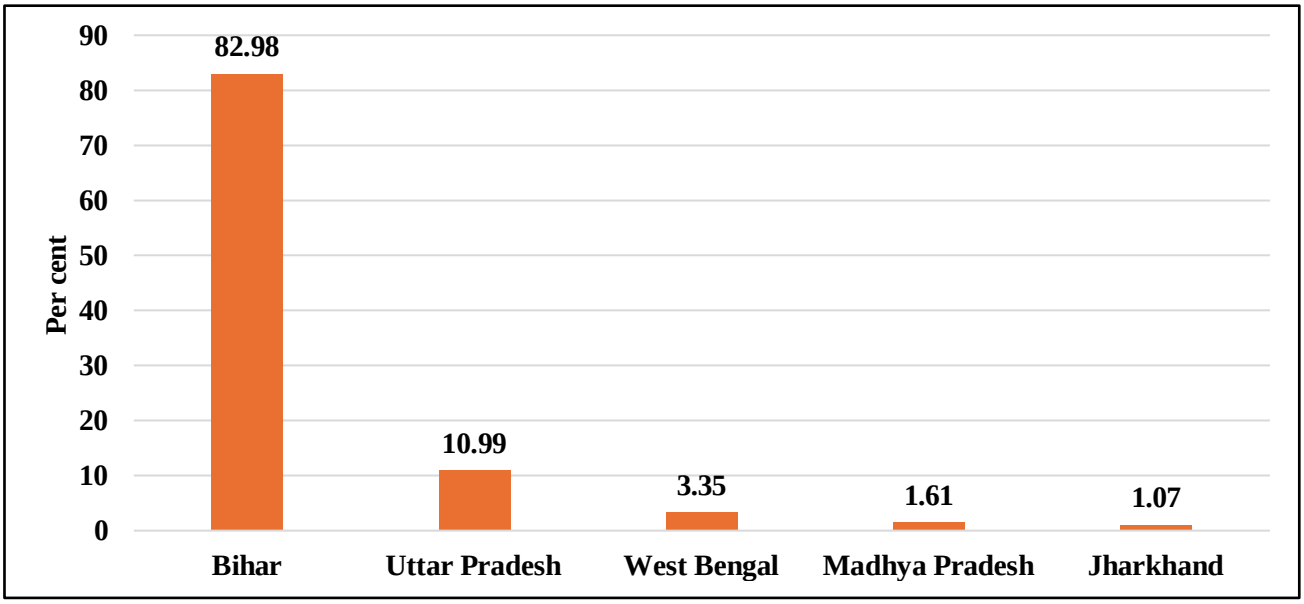
Seasonal migration into Haryana's grain markets (*mandis*) and agricultural fields during Rabi (wheat harvesting) and Kharif (paddy transplantation/harvesting) seasons shows a distinctive geographical pattern. While industrial migration is primarily from Bihar and Uttar Pradesh, agricultural and grain market migration is highly specialised. It is dominated by ecological clusters in Bihar, particularly flood-prone, economically weaker districts of North/Eastern Bihar and resource-deficient districts of Eastern and Central Uttar Pradesh.

Table 2 Place of Origin of Seasonal Migrant Workers

Place of Origin	No. of Respondents	Per cent
Bihar	619	82.98
Uttar Pradesh	82	10.99
West Bengal	25	3.35
Madhya Pradesh	12	1.61
Jharkhand	8	1.07
Total	**746**	**100.00**

Source: Field Survey, 2025-26

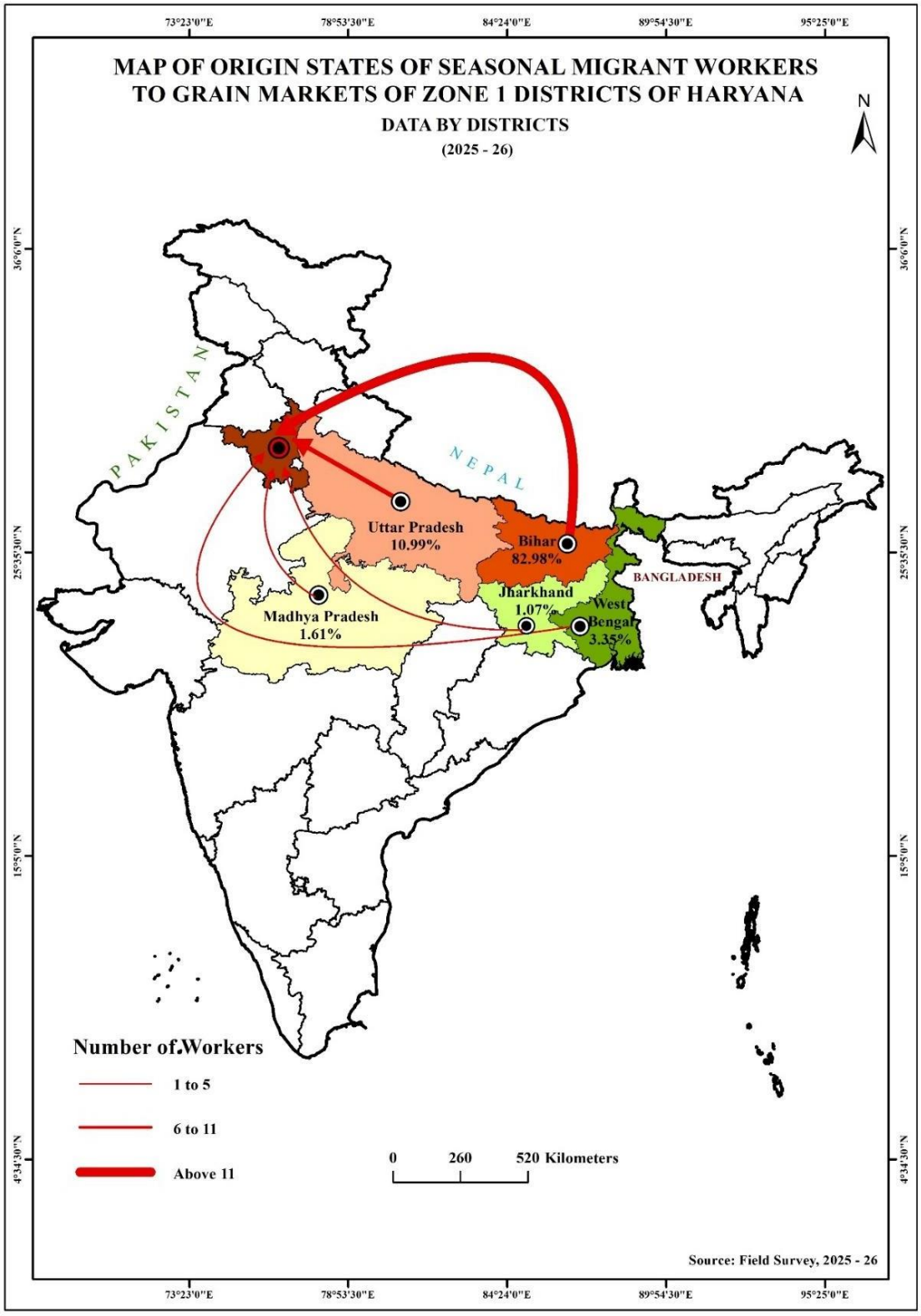
Figure 3 Place of Origin of Seasonal Migrant Workers



Source: Field Survey, 2025-26

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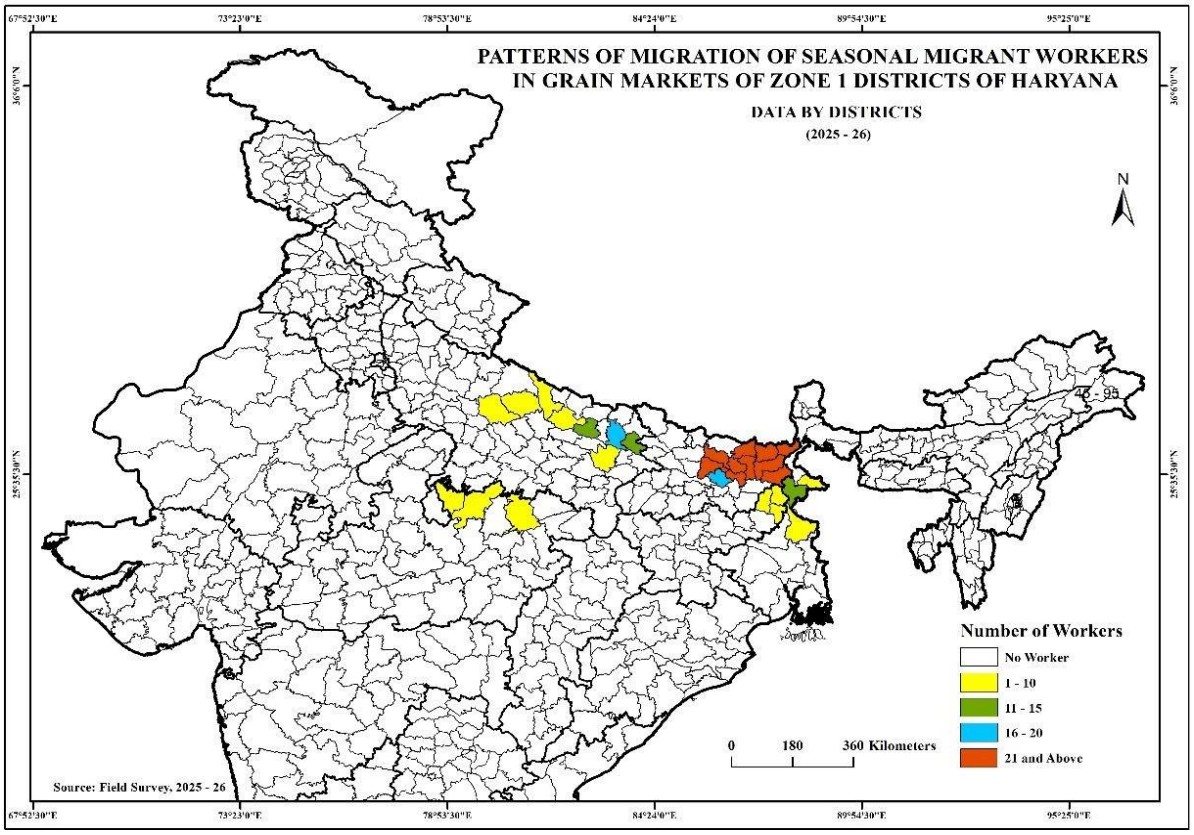
Map 2 Origin States of Seasonal Migrant Workers



Source: Field Survey, 2025-26

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Map 3 Patterns of Migration of Seasonal Migrant Workers



Source: Field Survey, 2025-26

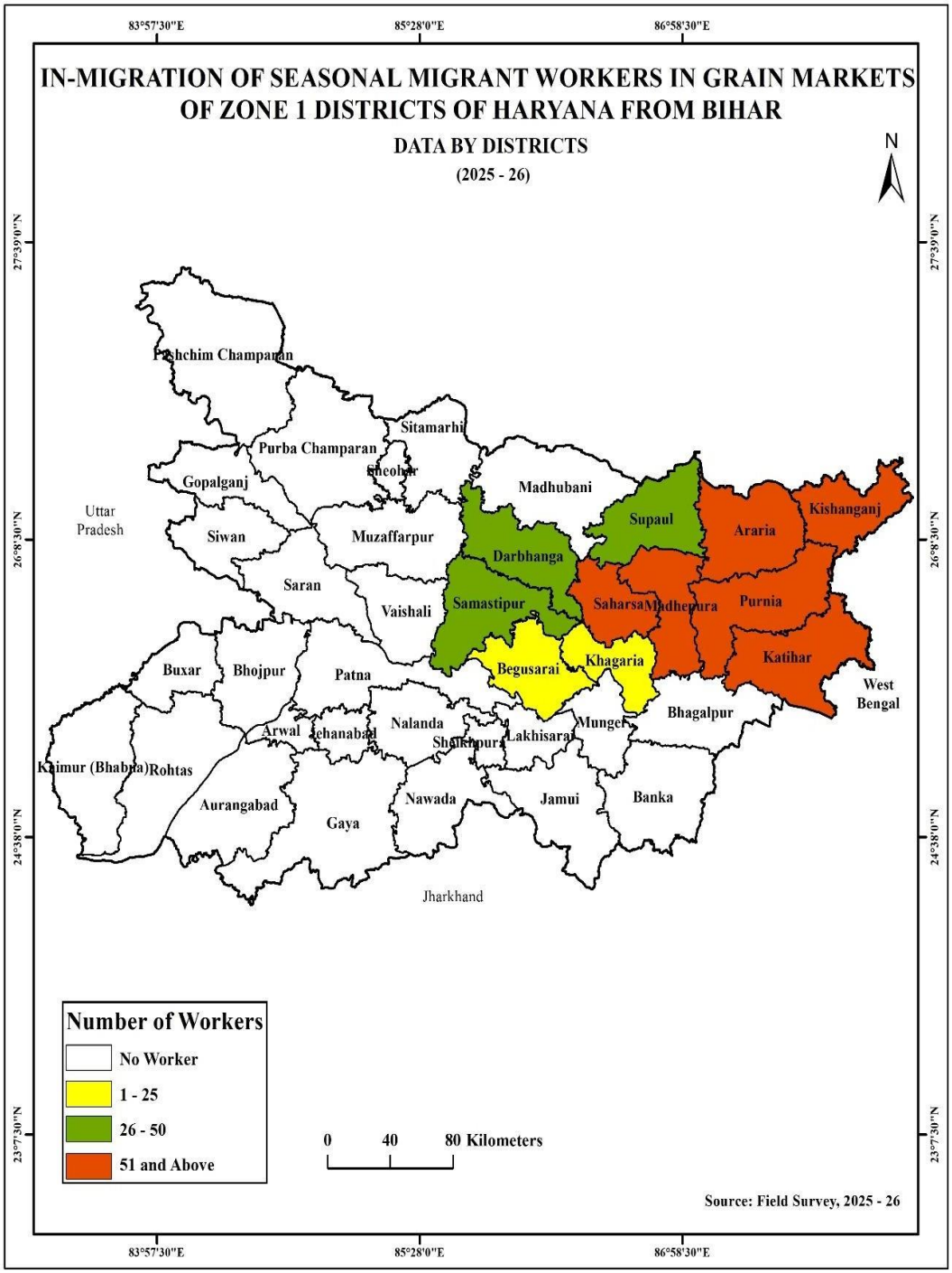
Table 3 Migration of Seasonal Migrant Workers in Grain Markets of Zone 1 Districts of Haryana from Bihar

Stream Dominance	State of Origin	Major Contributing Districts (Ranked High to Low)	No. of Respondents	Per cent	Overall Total Per cent of State
Primary Tier (High Density)	Bihar	Purnia	95	12.7	82.98
		Araria	85	11.4	
		Katihar	75	10.1	
		Kishanganj	70	9.4	
		Saharsa	60	8	
		Madhepura	55	7.4	
		Supaul	50	6.7	
		Darbhanga	45	6	
		Samastipur	45	6	
		Khagaria	22	2.9	
		Begusarai	17	2.3	

Source: Field Survey, 2025-26

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Map 4 In Migration of Seasonal Migrant Workers from Districts of Bihar



Source: Field Survey, 2025-26

Table 2 clearly demonstrates that Bihar is the most prominent region of origin of migrants. This dominance indicates an effective and well-established migration route between Bihar and Haryana's grain markets. Bihar's contribution is highly concentrated in a few areas. Purnia is considered the most significant district, followed by Araria, Katihar and Kishanganj. These four districts account for more than half of the total migrants. Other important source districts include Saharsa, Madhepura, Supaul, Darbhanga, and Samastipur, with relatively lower numbers from Khagaria and Begusarai. Various push factors in the state can explain why migrants come from Bihar. These include high population pressure on agricultural land,

fragmented landholdings, lack of non-farm employment opportunities, repeated floods in the Kosi basin, low agricultural productivity, and widespread rural poverty. For typical families in these districts, seasonal migration to Haryana has emerged as a significant livelihood strategy. Over time, kinship ties, labour contractors (*Thekedar*), and social networks have also encouraged migration.

Table 4 Migration of Seasonal Migrant Workers in Grain Markets of Zone 1 Districts of Haryana from Uttar Pradesh

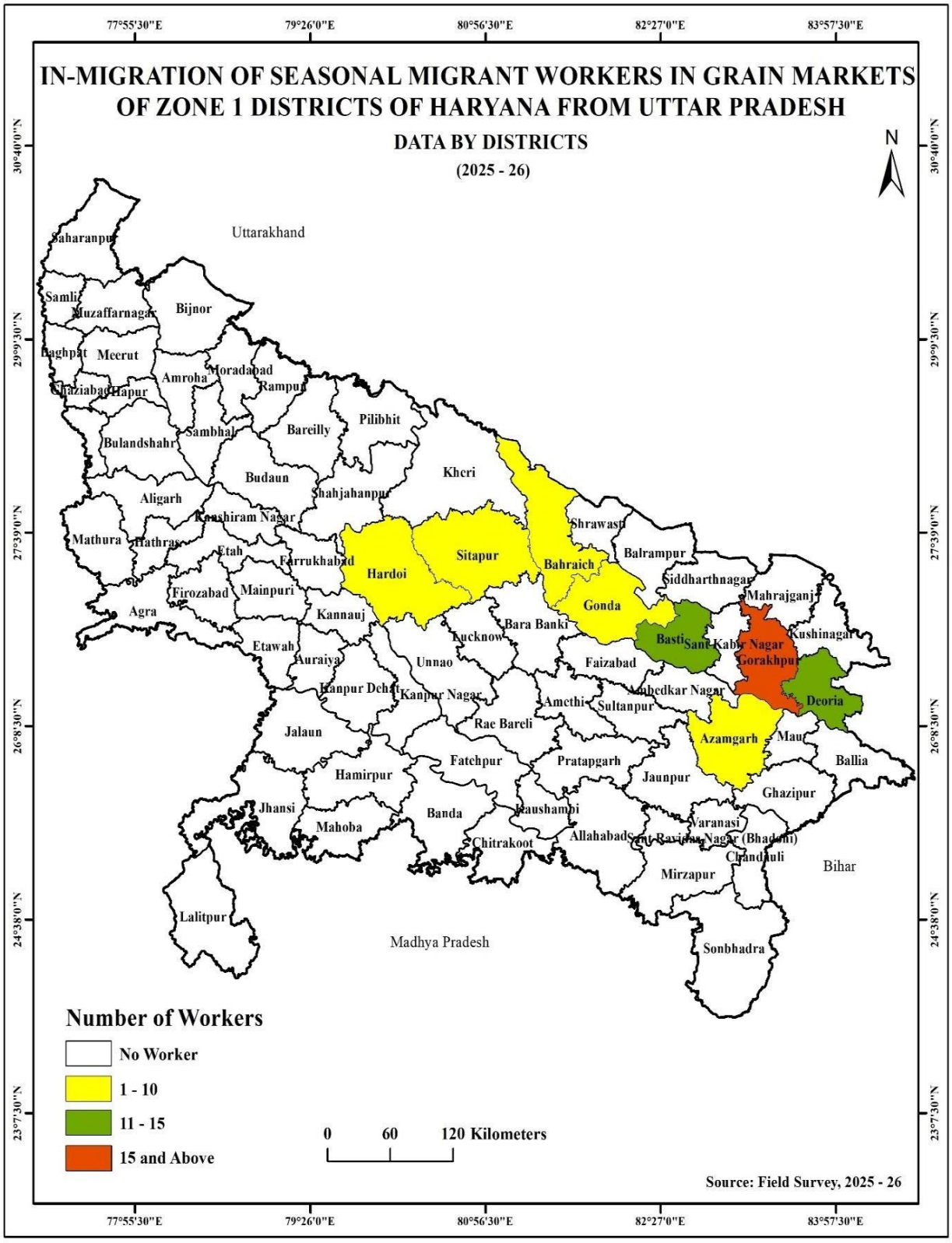
Stream Dominance	State of Origin	Major Contributing Districts (Ranked High to Low)	No. of Respondents	Per cent	Overall Total Per cent of State
Secondary Tier (Moderate Density)	Uttar Pradesh	Gorakhpur	20	2.7	10.99
		Deoria	15	2	
		Basti	12	1.6	
		Gonda	10	1.3	
		Bahraich	8	1.1	
		Azamgarh	7	0.9	
		Sitapur	5	0.7	
		Hardoi	5	0.7	

Source: Field Survey, 2025-26

Table 4 presents the district-wise contribution of seasonal migrant workers from Uttar Pradesh to the grain markets in Haryana's Zone I districts. The migration pattern is categorised as a secondary-tier stream with moderate density, indicating that Uttar Pradesh is an important source region for seasonal agricultural labour in the study area. The distribution of migrant workers across districts reflects the geographical spread of labour migration and the varying contributions of individual districts. Among the major contributing districts, Gorakhpur leads, accounting for 2.7 per cent of the total migration share. It is followed by Deoria, which contributes 2.0 per cent, while Basti accounts for 1.6 per cent. These three districts emerge as the principal source areas of seasonal migrant labour from Uttar Pradesh. Their relatively higher contributions indicate a stronger migration linkage with the grain markets of Haryana. Gonda ranks next, contributing 1.3 per cent, followed by Bahraich, which accounts for 1.1 per cent of the total share. Azamgarh contributes 0.9 per cent, whereas Sitapur and Hardoi each represent 0.7 per cent. Uttar Pradesh's overall contribution is reported as 10.99 per cent of the total state-level migration share. This indicates that the state plays a significant role in supplying seasonal migrant labour to the grain markets of Zone I districts of Haryana. However, the relatively dispersed distribution of migration across the identified districts suggests that the movement is not restricted to a single geographical pocket but extends across several parts of Uttar Pradesh. The comparatively higher contributions from Gorakhpur, Deoria and Basti highlight their prominence as major source areas, while the remaining districts represent relatively smaller but noteworthy migration streams. Overall, the findings demonstrate that Uttar Pradesh serves as an important secondary source region in the seasonal labour supply system of Haryana's grain markets. The district-wise variation in migration shares reflects the uneven geographical distribution of labour mobility and highlights the importance of regional employment linkages in shaping seasonal migration patterns.

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Map 5 In Migration of Seasonal Migrant Workers from Districts of Uttar Pradesh



Source: Field Survey, 2025-26

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Table 5 Migration of Seasonal Migrant Workers in Grain Markets of Zone 1 Districts of Haryana from West Bengal, Madhya Pradesh, and Jharkhand

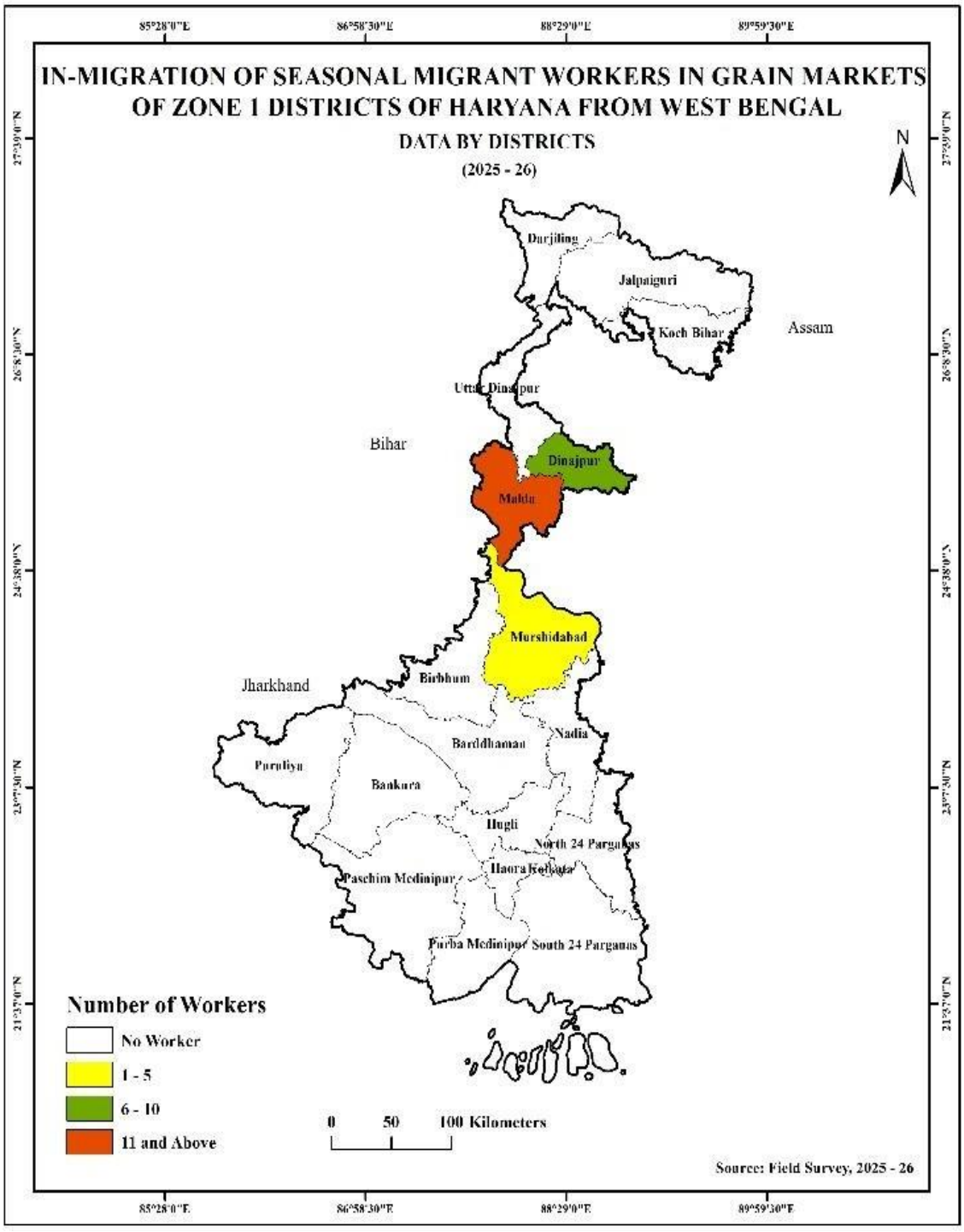
Stream Dominance	State of Origin	Major Contributing Districts (Ranked High to Low)	No. of Respondents	Per cent	Overall Total Per cent of State
Tertiary Tier (Low/ Scattered)	West Bengal	Malda	11	1.4	3.35
		Dinajpur	9	1.2	
		Murshidabad	5	0.7	
	Madhya Pradesh	Chhatarpur	7	0.9	1.61
		Tikamgarh	3	0.4	
		Satna	2	0.3	
	Jharkhand	Godda	3	0.4	1.07
		Sahibganj	3	0.4	
		Pakur	2	0.3	

Source: Field Survey, 2025-26

The tertiary tier (Table 5) presents the district-wise contribution of seasonal migrant workers from West Bengal, Madhya Pradesh, and Jharkhand to the grain markets in Zone I districts of Haryana. These states have been classified under the tertiary-tier migration stream, characterised by low and scattered migration density. The pattern indicates that these states make relatively smaller contributions to the seasonal labour supply compared to the major source regions. Among the three states, West Bengal records the highest overall contribution, accounting for 3.35 per cent of the total state-level migration share. Within West Bengal, Malda leads, contributing 1.4 per cent, followed by Dinajpur at 1.2 per cent and Murshidabad at 0.7 per cent. These figures indicate that Malda and Dinajpur are the principal source districts of seasonal migrant labour from West Bengal. Madhya Pradesh contributes 1.61 per cent to the overall migration share. Chhatarpur emerges as the leading contributing district, accounting for 0.9 per cent, followed by Tikamgarh at 0.4 per cent and Satna at 0.3 per cent. Similarly, Jharkhand accounts for 1.07 per cent of the total migration share. Within the state, Godda and Sahibganj each contribute 0.4 per cent, while Pakur represents 0.3 per cent. Overall, the findings show that West Bengal is the largest contributor among these three states, followed by Madhya Pradesh and Jharkhand. Their combined contribution represents 6.03 per cent of the total state-level migration share. The relatively low percentages and scattered distribution across districts indicate that these states serve as supplementary source regions of seasonal labour for Haryana's grain markets. Their presence also highlights the wider geographical reach of seasonal labour migration beyond the major neighbouring states.

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Map 6 In-migration of Seasonal Migrant Workers from Districts of West Bengal

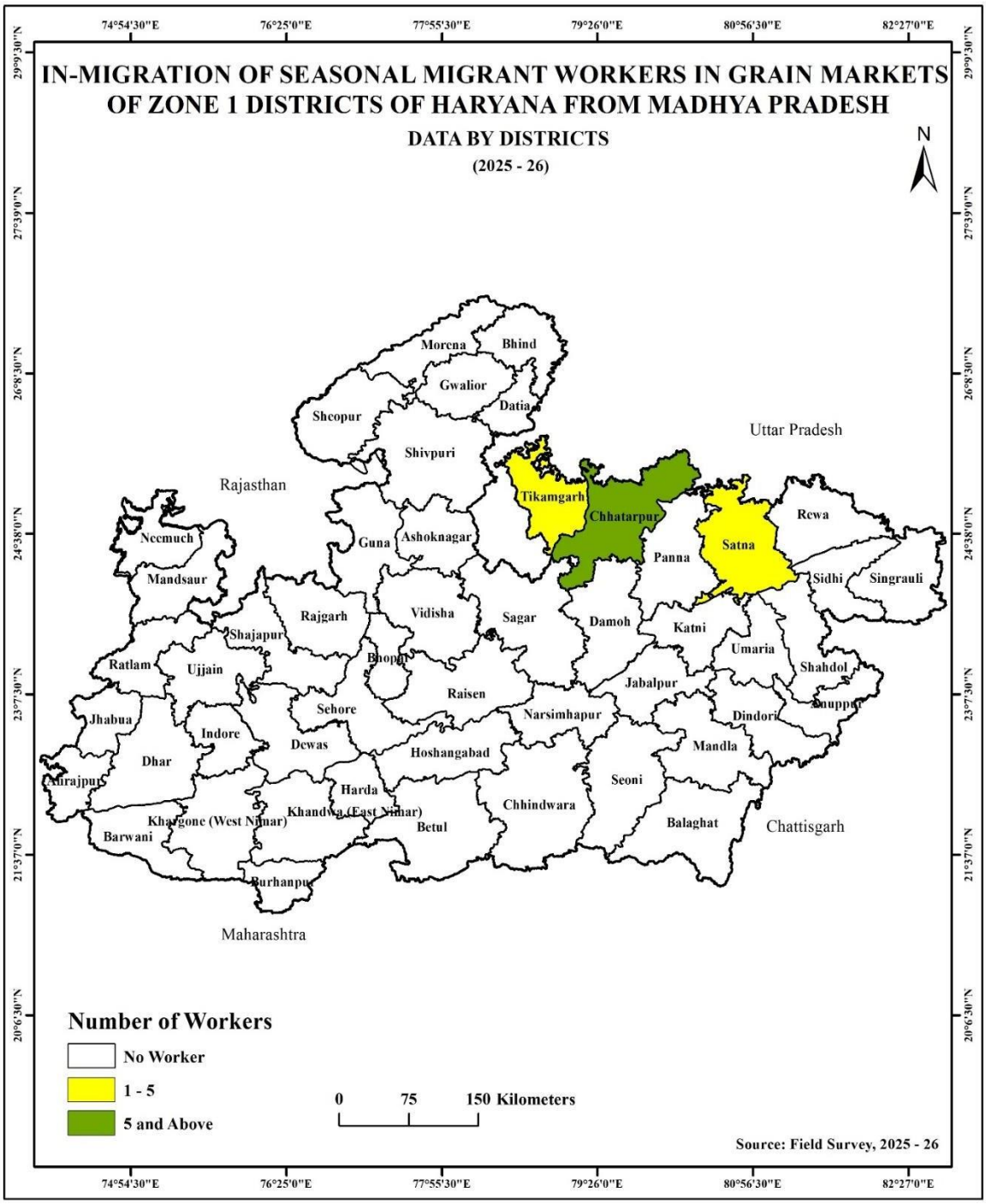


Source: Field Survey, 2025-26

West Bengal accounts for 3.35 per cent of the total seasonal migrant labour contribution to the grain markets of Zone I districts of Haryana. The major source districts are Malda, Dinajpur and Murshidabad, with Malda contributing the highest share, followed by Dinajpur and Murshidabad. The migration of workers from these districts is facilitated by established migrant contacts, social networks and the exchange of employment-related information. Such networks help prospective migrants

identify seasonal job opportunities, arrange transportation and establish connections with employers. These linkages encourage continued labour migration from West Bengal to Haryana during the harvesting season.

Map 7 In-migration of Seasonal Migrant Workers from Districts of Madhya Pradesh

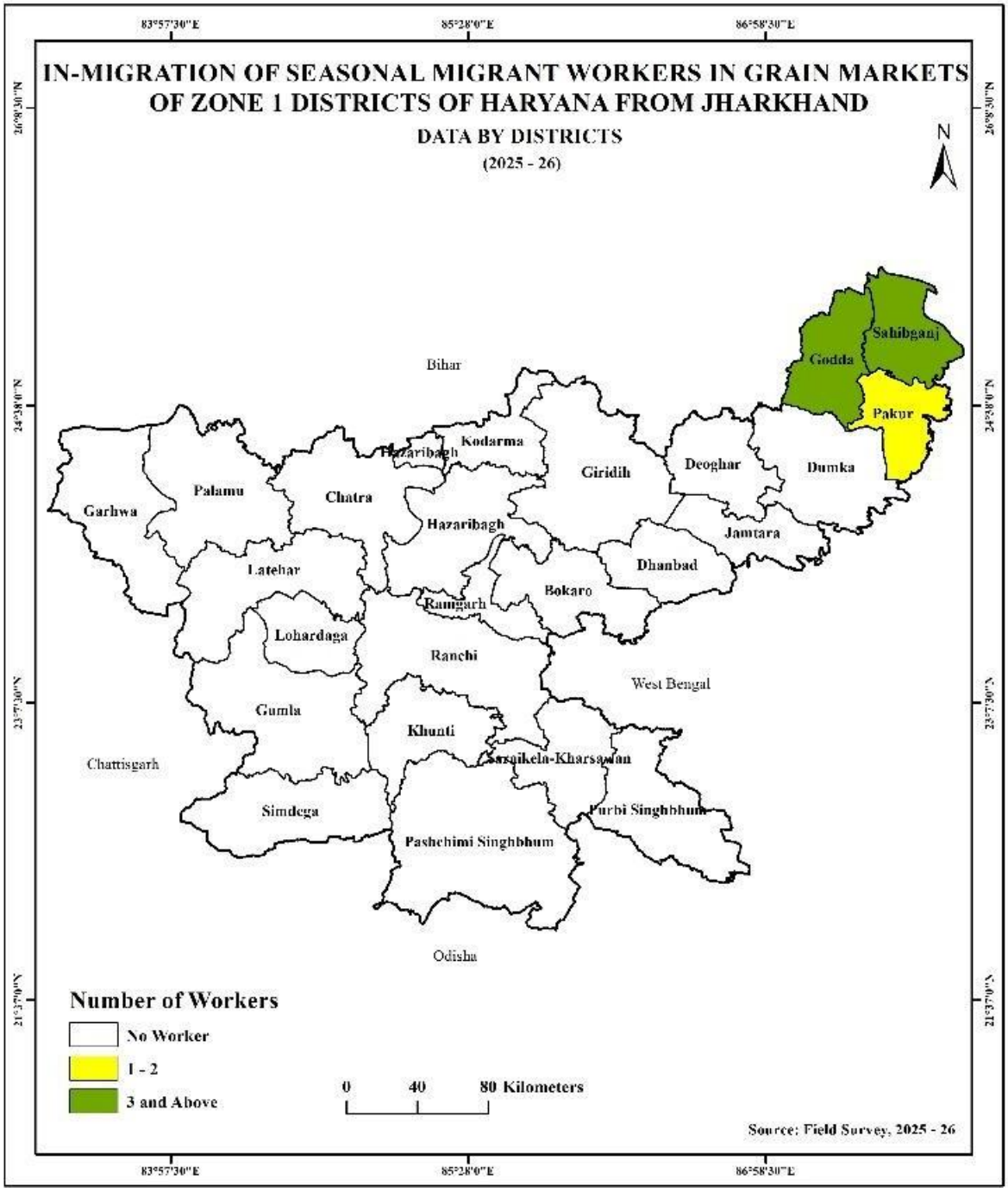


Source: Field Survey, 2025–26.

Madhya Pradesh accounts for 1.61 per cent of the total seasonal migrant labour contribution to the grain markets of Zone I districts of Haryana. The major source districts are Chhatarpur, Tikamgarh and Satna, with Chhatarpur contributing the highest share, followed by Tikamgarh and Satna. The migration of workers from these districts reflects established labour mobility patterns and employment-related connections between the source and destination regions. Fellow migrants and labour

contractors play an important role in sharing information about job availability, wages and working conditions. These established networks facilitate workers' movement towards Haryana during the harvesting season.

Map 8 In-migration of Seasonal Migrant Workers from Districts of Jharkhand



Source: Field Survey, 2025–26.

Jharkhand contributes only 1.07 per cent, with Godda, Sahibganj and Pakur. These districts represent relatively scattered migration streams, with workers relying on informal contacts and recruitment networks rather than a highly concentrated migration channel. Table 2 shows a relatively concentrated spatial pattern of seasonal labour migration, with Bihar as the primary source region and eastern Uttar Pradesh as the secondary source region.

2.3 Spatial Distribution of Migrant Grain Markets Workers

The market-wise distribution of migrant workers reveals a clear spatial differentiation in the origin composition of seasonal migrant labour across the 26 selected grain markets of Haryana.

The distribution is not uniform across the study area. Although workers from Bihar make up the largest share of the overall sample, the relative contribution of Uttar Pradesh, West Bengal, Madhya Pradesh, and Jharkhand varies considerably from one market to another. This variation can be interpreted in terms of geographical proximity, transport accessibility, market location along major transport corridors, proximity to state boundaries, availability of seasonal employment, and established migrant networks.

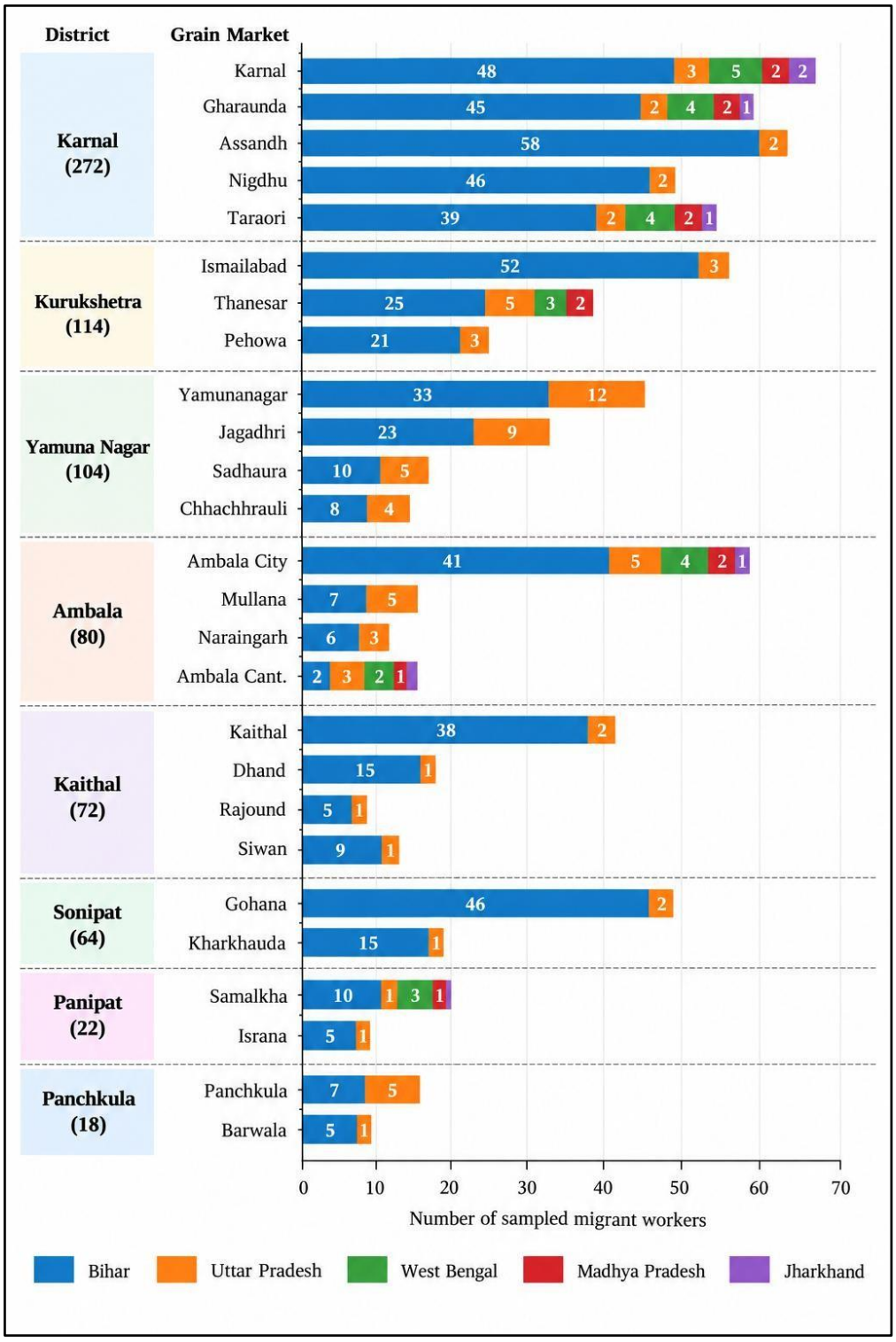
Table 6 District-wise and Grain Market-wise Distribution of Sampled Migrant Workers

S. No.	District	Total sampled workers	Grain Market	Sampled Workers	Bihar	Uttar Pradesh	West Bengal	Madhya Pradesh	Jharkhand
1	Karnal	272	Karnal	60	48	3	5	2	2
			Gharaunda	56	45	2	4	2	1
			Assandh	60	58	2	0	0	0
			Nigdhu	48	46	2	0	0	0
			Taraori	48	39	2	4	2	1
2	Kurukshetra	114	Ismailabad	55	52	3	0	0	0
			Thanesar	35	25	5	3	2	0
			Pehowa	24	21	3	0	0	0
3	Yamuna Nagar	104	Yamunanagar	45	33	12	0	0	0
			Jagadhri	32	23	9	0	0	0
			Sadhaura	15	10	5	0	0	0
			Chhachhrauli	12	8	4	0	0	0
4	Ambala	80	Ambala City	51	41	5	4	2	1
			Mullana	12	7	5	0	0	0
			Naraingarh	9	6	3	0	0	0
			Ambala Cant.	8	2	3	2	1	0
5	Kaithal	72	Kaithal	40	38	2	0	0	0
			Dhand	16	15	1	0	0	0
			Rajound	6	5	1	0	0	0
			Siwan	10	9	1	0	0	0
6	Sonipat	64	Gohana	48	46	2	0	0	0
			Kharkhauda	16	15	1	0	0	0
7	Panipat	22	Samalkha	16	10	1	3	1	1
			Israna	6	5	1	0	0	0
8	Panchkula	18	Panchkula	12	7	5	0	0	0
			Barwala	6	5	1	0	0	0
Total			**26 Grain Markets**	**746**	**619**	**84**	**25**	**12**	**6**

Source: Field Survey, 2025-26

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Figure 4 District-wise and Grain Market-wise Distribution of Sampled Migrant Workers



Source: Field Survey, 2025-26

The district-wise distribution presented in Table 6 further illustrates this spatial differentiation. Migrant workers are distributed among the selected grain markets of Karnal, Kurukshetra, Yamuna Nagar, Ambala, Kaithal, Sonipat, Panipat, and Panchkula. The number of sampled workers differs considerably among these districts, reflecting differences in the selected markets and

their role in absorbing seasonal labour. Within individual districts, the composition of workers by place of origin also varies from one market to another. Thus, the table provides an important basis for understanding the spatial organisation of seasonal migrant labour within Haryana's grain-market system.

2.4 Seasonal Agricultural Context and Market Selection

The spatial pattern should also be understood in relation to the agricultural calendar. In the Rabi season, wheat is the principal crop generating large grain arrivals in many parts of the study area. In contrast, in the Kharif season, paddy becomes particularly important in the rice-producing districts of north and north-eastern Haryana. The same migrant worker may therefore experience different labour opportunities across the two seasons. During the wheat marketing period, labour demand increases around wheat unloading, cleaning, bagging, packaging, stacking and dispatch. During the paddy season, the volume of arrivals and the intensity of handling operations can similarly increase the requirement for packaging, loading, unloading, sorting and cleaning workers.

The agricultural geography of the districts supports this seasonal interpretation. Paddy-wheat systems are found in districts including Karnal, Kurukshetra, Kaithal, Panipat, Sonipat, and Ambala, while Yamuna Nagar also has paddy-wheat and other crop systems. Kurukshetra is particularly noted for fertile, irrigated land suitable for wheat and paddy and is described as an important rice-producing area. Thus, migrant labour demand should not be considered constant throughout the year; it rises and falls with crop arrivals and the associated grain-market operations.

Field observations also indicate that workers generally prefer markets where they can secure work for a substantial part of the peak season rather than for a single day. This matters for seasonal migrant workers because they must recover travel costs from Bihar or other source regions through earnings at the destination. Consequently, markets receiving large quantities of wheat in the Rabi season or paddy in the Kharif season can become important temporary employment destinations when the arrival period creates a concentrated labour demand.

2.4.1 Karnal District: Major Concentration of Seasonal Migrant Labour

Karnal has 272 sampled migrant workers distributed across Karnal, Gharaunda, Assandh, Nigdhu and Taraori grain markets. The district shows a pronounced Bihar-origin component. Karnal market has 60 workers, including 48 from Bihar, 3 from Uttar Pradesh, 5 from West Bengal, 2 from Madhya Pradesh and 2 from Jharkhand. Gharaunda has 56 workers, including 45 from Bihar; Assandh has 60 workers, of whom 58 are from Bihar; while Nigdhu and Taraori each have 48 workers.

Favourable conditions for migrant workers in Karnal are closely linked to the scale and continuity of grain-market activity. Karnal is located on the major north-south transport corridor linking Delhi with Panipat, Karnal and Ambala. The Delhi–Sonipat–Panipat–Karnal–Ambala corridor provides a key transport link. Karnal also has an established railway station and rail connectivity towards Delhi and North India, a key transport link in Haryana. For seasonal migrant workers travelling in groups, the combination of road and rail access reduces uncertainty in reaching the destination.

Karnal's agricultural base is another important attraction. The district's paddy-wheat cropping system means that migrant labour can find opportunities in both major crop seasons. In the Kharif period, paddy arrivals generate work related to unloading, cleaning, packaging, and moving produce, while in the Rabi period, wheat arrivals generate similar requirements. This seasonal complementarity can make the district attractive because workers can plan repeated movement around predictable agricultural cycles. The district's grain-market activity also lets workers take on several related tasks rather than relying on a single type of work.

Field-level realities strengthen this attraction. Migrant workers commonly depend on *arhtiyas*, contractors and fellow workers for access to employment. In Karnal's larger markets, a worker arriving with an existing contact can often move directly into packaging, loading/unloading, sorting or cleaning work instead of searching for employment independently. Accommodation near or behind market shops, although often basic, further reduces the immediate cost of migration. These factors help explain why Karnal has become an important destination within the sampled grain-market network.

2.4.2 Kurukshetra District: Concentration around Ismailabad, Thanesar and Pehowa

Kurukshetra accounts for 114 migrant workers arriving at the grain markets of Ismailabad, Thanesar and Pehowa. Ismailabad has 55 workers, including 52 from Bihar and 3 from Uttar Pradesh; Thanesar has 35 workers, including 25 from Bihar, 5 from

Uttar Pradesh, 3 from West Bengal and 2 from Madhya Pradesh; and Pehowa has 24 workers, including 21 from Bihar and 3 from Uttar Pradesh.

A major favourable factor in Kurukshetra is its strong agricultural base and high dependence on irrigated crop production. Kurukshetra's fertile alluvial soils and extensive irrigation suit wheat and paddy, making it an important rice-producing area. This produces two important periods of labour demand: paddy-related activity during Kharif and wheat-related activity during Rabi. For migrants, these two crop cycles provide repeated opportunities for seasonal employment.

The location of Ismailabad, Thanesar and Pehowa within a well-connected agricultural region is also relevant. Kurukshetra has road connections towards Karnal, Ambala and other northern Haryana markets, while railway connectivity through Kurukshetra provides an additional route for migrants. Workers can therefore combine road transport, rail travel and local transport to reach the market. Established migrant contacts around Thanesar and other markets further reduce the uncertainty of destination selection.

Thanesar's comparatively diverse origin composition is particularly relevant. Its larger concentration of migrant workers comes from Uttar Pradesh, West Bengal and Madhya Pradesh suggesting that this market draws labour through several networks. Differences in grain arrivals, market size, packaging requirements and loading/unloading demand create space for workers from different source regions. Workers favour Thanesar because they have information of availability of jobs from previous migrants. The combination of agricultural demand, transport access and established networks therefore makes the district an important seasonal destination.

2.4.3 Yamuna Nagar District: Greater Representation of Uttar Pradesh

Yamuna Nagar has 104 sampled workers from Yamunanagar, Jagadhri, Sadhaura and Chhachhrauli grain markets. Yamunanagar has 45 workers, including 33 from Bihar and 12 from Uttar Pradesh; Jagadhri has 32, including 23 from Bihar and 9 from Uttar Pradesh; Sadhaura has 15, including 10 from Bihar and 5 from Uttar Pradesh; and Chhachhrauli has 12, including 8 from Bihar and 4 from Uttar Pradesh.

The relative presence of Uttar Pradesh workers is consistent with the district's location in the north-eastern part of Haryana and its proximity to the Uttar Pradesh side of the Yamuna. This geographical relationship can reduce the cost and time of repeated seasonal movement for workers from western Uttar Pradesh. At the same time, a sizeable number of migrants from Bihar reveals established employment networks which make a distant market more attractive than an unfamiliar nearby market.

Yamuna Nagar also has a mixed agricultural economy in which paddy-wheat systems occur alongside sugarcane, maize, sunflower and vegetable systems. For migrant workers in grain markets, this means a constant demand throughout the year. Paddy-related arrivals create Kharif employment, while wheat arrivals generate Rabi employment. Markets connected with multiple agricultural activities can provide a broader seasonal employment environment, particularly when workers combine grain-market work with other temporary activities during lean periods.

Transport accessibility is also important. Yamunanagar and Jagadhri connect to the wider northern Haryana transport system, and Jagadhri is an important railway hub. From the workers' perspective, the availability of rail and road routes facilitates group travel and repeated seasonal return. Field observations also indicate that workers prefer destinations where they can arrange accommodation near the workplace and where a known *arhtiya* or fellow migrant can help them find work quickly.

2.4.4 Ambala District: Mixed but Bihar-dominated migration

Ambala has 80 sampled migrant workers across Ambala City, Mullana, Naraingarh and Ambala cantonment (Cantt.) grain markets. Ambala City has 51 workers, including 41 from Bihar, 5 from Uttar Pradesh, 4 from West Bengal, 2 from Madhya Pradesh and 1 from Jharkhand. Mullana has 12 workers, Naraingarh has 9 and Ambala Cantt. has 8.

Ambala is favourable for migrant accessibility because it sits at a key junction between Haryana, Punjab, Himachal Pradesh, and Chandigarh. The Delhi–Ambala north-south corridor reaches the district, while Ambala also has major railway connectivity. This combination of highway and railway access is especially useful for seasonal migrants travelling from distant source states.

Ambala's agricultural setting also follows a paddy-wheat pattern, creating seasonal labour demand in both Kharif and Rabi. In practice, migrant arrival timing can therefore be linked to paddy movement during the Kharif procurement period and wheat

during the Rabi procurement period. Workers prefer markets where the arrival season is sufficiently active to provide continuous handling and packaging work rather than isolated employment.

Ambala City provides an additional advantage because it is a larger urban and commercial centre. Workers can obtain information, transport and basic supplies more easily than in a very small market. Field observations also indicate that *arhtiyas* provide basic accommodation close to shops, which is particularly valuable for group migrants. Such arrangements reduce travel between residence and workplace and allow workers to remain available during peak arrival periods.

2.4.5 Kaithal District: Strong Dependence on Bihar-origin Workers

72 migrant workers were related from Kaithal district, where they working in the grain markets of Kaithal, Dhand, Rajound and Siwan. Kaithal has 40 workers, including 38 from Bihar and 2 from Uttar Pradesh; Dhand has 16, including 15 from Bihar; Rajound has 6, including 5 from Bihar; and Siwan has 10, including 9 from Bihar.

Kaithal's attraction is strongly linked to its agricultural economy and the regular need for labour around grain procurement. Its paddy-wheat cropping system creates two distinct periods of grain-market activity. During Kharif, paddy arrivals can create demand for unloading, cleaning, packaging and stacking, while Rabi wheat arrivals create another period of intensive work. For workers who depend on seasonal migration, this crop calendar provides a predictable basis for planned movement.

Kaithal also has road connectivity to the wider Haryana market system, including links towards Karnal, Kurukshetra, Jind and other grain-producing areas. Although it lacks the major-corridor character of Karnal or Panipat, road access is sufficient for labour contractors and migrant groups to move between source villages and markets.

The strong Bihar concentration indicates that social networks are particularly important. A worker who has already worked in Kaithal may return with fellow villagers or relatives in the next season. Known employers, known wage arrangements, and available accommodation make the market more attractive than a place where workers must search for employment after arrival.

2.4.6 Sonipat District: Concentration in Gohana and Kharkhauda

Sonipat has 64 sampled workers from Gohana and Kharkhauda grain markets. Gohana has 48 workers, including 46 from Bihar and 2 from Uttar Pradesh, while Kharkhauda has 16 workers, including 15 from Bihar and 1 from Uttar Pradesh.

One of Sonipat's key advantages for migrant workers is its location within the Delhi–Panipat transport corridor. The Delhi–Sonipat–Panipat–Karnal–Ambala highway connection makes this belt one of the most accessible transport axes in the study area. Sonipat also has railway connectivity, which is important for workers arriving from Bihar and Uttar Pradesh. Sonipat's proximity to Delhi also allows migrant workers to reach here easily.

This transport advantage is combined with agricultural and market accessibility. Sonipat follows a paddy-wheat system, with wheat providing substantial Rabi-season employment and paddy contributing to Kharif-season. Workers can therefore schedule their movement according to the arrival of the relevant crop. Proximity to Delhi also creates an additional advantage: workers can access a large urban and regional market while staying within Haryana's established grain-market network.

From a field perspective, such locations are attractive because transport is easier, groups can travel together, and workers can return home more readily when the peak season ends. The presence of known *arhtiyas,* shopkeepers and fellow migrants further reduces uncertainty. Thus, the strong Bihar representation in Gohana and Kharkhauda reflects the interaction between transport accessibility and established labour networks. During the lean period, migrants work as unskilled workers in the booming real estate sector.

2.4.7 Panipat District: Smaller Sample with Diverse Origins at Samalkha

Panipat has 22 sampled workers from Samalkha and Israna grain markets. Samalkha has 16 workers, including 10 from Bihar, 1 from Uttar Pradesh, 3 from West Bengal, 1 from Madhya Pradesh and 1 from Jharkhand. Israna has 6 workers, including 5 from Bihar and 1 from Uttar Pradesh.

Panipat has a particularly favourable transport location. It lies on the Delhi–Panipat–Karnal–Ambala national highway corridor, and the NH-44 section through Panipat provides an important route with substantial commercial connectivity. Panipat also has railway connectivity, providing another practical route for seasonal migrants. These road and rail options reduce the difficulty of reaching the market and are especially useful for workers travelling in groups.

Panipat's paddy-wheat agricultural system provides another seasonal basis for grain-market employment. The Rabi wheat season and Kharif paddy season can generate separate peaks in handling requirements. Samalkha's position within this wider transport and agricultural network may explain why workers from several states are represented despite the smaller sample.

The presence of West Bengal, Madhya Pradesh and Jharkhand workers at Samalkha is also consistent with the role of labour networks. Once a contractor, *arhtiya*, or fellow migrant establishes a reliable recruitment channel, workers may travel from relatively distant states because they already know the expected employment. For these workers, the certainty of work can matter more than geographical proximity alone. Panipat is also known for its handloom sector, which provides migrants with job opportunities during lean periods, where they help in loading and unloading raw and finished goods.

2.4.8 Panchkula District: Smallest migrant workers concentration

Panchkula has 18 sampled workers from Panchkula and Barwala grain markets. Panchkula has 12 workers, including 7 from Bihar and 5 from Uttar Pradesh, while Barwala has 6 workers, including 5 from Bihar and 1 from Uttar Pradesh.

Panchkula's main advantage is its proximity to Chandigarh and its connection to the Ambala–Chandigarh transport corridor. The regional road network connects Panchkula with Ambala and Chandigarh, providing wider transport and employment linkages than might be available in an isolated rural market.

The relatively visible contribution of Uttar Pradesh workers can be understood partly through accessibility and established North Indian migration routes. In contrast, Bihar-origin workers continue to arrive through longer-distance networks. The district's smaller grain-market sample should not be interpreted as an absence of migrant labour; rather, the selected markets have a smaller sampled workforce than the larger grain centres.

For workers who select Panchkula or Barwala, proximity to major urban centres, transport availability and the possibility of finding employment through existing contacts can be important. Accommodation availability near the workplace also matters because daily commuting from distant settlements can reduce the net return from short-duration employment.

2.4.9 Factors Influencing Migrant Workers' Choice of Grain Market

District-level evidence indicates that migrant workers select grain markets through a combination of economic, agricultural, transport, social, and destination-specific considerations. Employment availability is the first requirement. Workers prefer markets where grain arrivals are large and regular enough to provide work in packaging, loading and unloading, sorting, cleaning, bagging, and related activities. The timing of these opportunities is closely linked with the Rabi wheat and Kharif paddy marketing cycles.

Wage rates and the number of available working days determine whether migration is economically worthwhile. A worker travelling a long distance from Bihar or another state must recover travel expenses and temporary living costs. Therefore, a market offering regular employment for several weeks during the peak season can be more attractive than one with uncertain work, even if the latter is geographically closer.

Transport accessibility is particularly important in the study area. The Delhi–Sonipat–Panipat–Karnal–Ambala corridor provides a continuous road connection through several important grain-market locations. Railway connectivity at locations such as Sonipat, Panipat, Karnal, Kurukshetra, Ambala Cantt. and Jagadhari provides an additional means of movement. For seasonal migrants, having both road and rail options can reduce travel uncertainty and facilitate group migration and return movement.

Proximity to state boundaries also affects destination choice. Markets in the northern and north-eastern parts of Haryana can be relatively accessible to workers from Uttar Pradesh and neighbouring regions. In contrast, workers from Bihar may depend more heavily on rail connections and established recruitment networks. Nevertheless, the field distribution shows that social networks can overcome geographical distance: workers from Bihar are present in substantial numbers even in markets far from Bihar.

A district's agricultural specialisation determines the timing and nature of market demand. Districts with strong paddy-wheat systems can offer two major periods of grain-related labour demand. During Kharif, paddy markets require intensive handling as arrivals increase; during Rabi, wheat arrivals create another period of unloading, packaging, cleaning, and stacking. This seasonal alternation matters especially for migrants who organise their annual movement around agricultural calendars.

The behaviour of *arhtiyas*, contractors and shop owners is another practical consideration. Field observations show that migrant workers often depend on these actors for access to work and, in some cases, for accommodation near the market. A worker who knows a particular *arhtiya* and has previously received work may prefer to return rather than search for an unknown employer. Regular payment, acceptable treatment and clarity about work and wages can therefore strengthen repeat migration.

Accommodation is particularly important because many workers migrate in groups and remain close to the grain market throughout the peak season. Where *arhtiyas* provide rooms or space near shops, the worker's commuting cost is reduced, and the worker can report for work quickly when grain arrivals increase. Although such accommodation may be basic, its availability itself can be a significant practical advantage for low-income seasonal migrants.

Migrant networks reinforce all these factors. Friends, relatives, co-villagers, labour brokers, and fellow migrants transmit information about expected wages, work duration, market conditions, accommodation, and employer behaviour. Group migration is particularly useful because workers can travel together and enter a destination where at least one member already has a contact. Over time, this process produces a self-reinforcing geography in which particular source regions become strongly associated with particular markets.

2.4.10 District-wise Spatial Pattern and Overall Interpretation

Table 6 demonstrates that the spatial distribution of seasonal migrant labour is closely related to the economic geography of grain markets. Karnal, Kurukshetra, Yamuna Nagar, Ambala, Kaithal, Sonipat, Panipat and Panchkula do not function as identical labour destinations. Different combinations of agricultural production, grain-arrival intensity, transport connectivity, market size, employment availability, and migrant networks drive their attractiveness.

Bihar's strong representation across almost all selected grain markets indicates the importance of long-established migration networks. Uttar Pradesh has a comparatively visible presence in Yamuna Nagar and Panchkula, where geographical accessibility and regional connections may reduce migration costs. Migrant workers from West Bengal, Madhya Pradesh, and Jharkhand appear in smaller numbers but are more visible in grain markets such as Karnal, Gharaunda, Taraori, Thanesar, Ambala City, and Samalkha.

The Delhi–Chandigarh/Delhi–Ambala transport axis is especially important for understanding the central Haryana markets. Road and rail connectivity allows migrants to reach markets such as Sonipat, Panipat, Karnal and Ambala with comparatively greater ease. The same connectivity also benefits the movement of agricultural produce so that transport accessibility can influence both the supply of migrant labour and the demand for labour generated by grain arrivals.

The agricultural calendar adds another layer to this spatial pattern. Paddy-producing districts and markets become particularly important during Kharif procurement, whereas wheat-producing areas generate strong labour requirements during Rabi season. Because several districts have paddy-wheat systems, seasonal labour demand repeats rather than being confined to a single crop period. This helps explain why some migrants return to the same markets year after year.

Overall, the market-wise distribution represents a destination-oriented form of seasonal migration. Migrant workers favour markets where they can combine relatively assured employment with satisfactory earnings, accessible transport, known social contacts, accommodation and favourable working arrangements. The actual choice is therefore not based on a single factor. The combined effect of the agricultural calendar, market demand, transport geography, and migrant networks makes particular grain markets more attractive to seasonal workers.

3.1 Conclusions

This chapter examines the nature, volume and spatial characteristics of seasonal migrant workers engaged in grain markets of Agro-Climatic Zone I of Haryana. The findings reveal a highly concentrated migration pattern. Bihar is the dominant source state, contributing 82.98 per cent of the surveyed workers, followed by Uttar Pradesh (10.99 per cent), West Bengal (3.35 per cent), Madhya Pradesh (1.61 per cent), and Jharkhand (1.07 per cent). Within Bihar, migration is particularly concentrated in Purnia, Araria, Katihar, Kishanganj, Saharsa, Madhepura and Supaul. Eastern Uttar Pradesh, particularly Gorakhpur, Deoria, Basti and Gonda, forms the second important source region. Workers from West Bengal, Madhya Pradesh and Jharkhand constitute relatively smaller and more geographically scattered migration streams.

The spatial distribution across Haryana also varies considerably among the selected grain markets. Karnal has the largest sampled concentration with 272 migrant workers, followed by Kurukshetra (114), Yamuna Nagar (104), Ambala (80), Kaithal

(72), Sonipat (64), Panipat (22) and Panchkula (18). This distribution is associated with the agricultural intensity of the districts, seasonal wheat and paddy arrivals, transport accessibility, employment opportunities, accommodation, and established migrant networks.

Overall, seasonal migration to Haryana's grain markets represents a regular, recurrent, and socially organised livelihood strategy shaped by agricultural seasonality and established labour networks.

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