



Social protection and informal job market reform for tackling the climate migration nexus

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- Building capacity to act on the implications of changing ecology and economics for equitable and climate-resilient development in the drylands.

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By 2050, water stress, sea-level rise and crop failure from climate change may displace 31–72 million people across sub-Saharan Africa, South Asia and Latin America. Distress migration generates grave socioeconomic consequences — both for migrants and the families they leave behind. Through regression analysis and case studies, this paper explores how climate impacts, lack of social protection and marginalisation push households in two diverse communities in India towards distress migration. It then recommends how to strengthen social protection programmes and informal job market regulations to support communities before, during and after migration.

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Summary

In 2020, climate-related hazards affected close to 20 million people in India and caused economic losses amounting to 0.9% of gross domestic product. These impacts are increasingly falling into the category of 'loss and damage'. When a community suffers loss and damage, it can no longer absorb the effects of climate risks or adapt to climate change.

Climate change adds another level of stress for households already suffering multidimensional risks due to development deficit, pushing people towards distress migration. Migration can occur from both slow- and rapid-onset climate distress. Slow-onset events such as drought, for example, threaten natural resource-based livelihoods such as agriculture, livestock and fishery. These events then compromise people's ability to earn a living, inciting them to search for better economic opportunities through migration. Similarly, when rapid-onset hazards such as hailstorms or floods damage crops, cultivable lands and property, communities may have few or no options for in-situ adaptation. Under such situations, migration is the only viable option for survival.

While migration can help people cope during a climate crisis, it also generates socioeconomic, health and other secondary and tertiary consequences and risks. This is true both for migrants and their families left behind (mostly women, children and elderly people) or those not able to migrate.

According to the Intergovernmental Panel on Climate Change (IPCC), extreme weather events have displaced on average more than 20 million people per year since 2008. Even with aggressive efforts to cut global emissions and the most optimistic scenarios for warming this century, these pressures will increase. The IPCC projects that water stress, sea-level rise and crop failure will displace between 31–72 million people across sub-Saharan Africa, South Asia and Latin America by 2050.

This paper analyses two diverse contexts in India — slow onset (drought) in Jharkhand and rapid onset (floods and cyclone) in Odisha. It uses regression analysis to understand how climate impacts, lack of social protection and marginalisation push households towards distress migration. It also analyses case studies to understand how social protection programmes and job market regulations are supporting or failing them at all stages of migration. Finally, it examines how to strengthen and better align these programmes and

regulations to support communities forced to migrate, as well as those left behind.

Findings

A binomial logistic regression analysis was undertaken to present how climate impacts, lack of social protection and marginalisation push communities towards distress migration in the rapid-onset and slow-onset contexts in India.

Occurrence of loss and damage, caused by extreme climate events, increased the odds of migrating by 687% and 172% in rapid-onset and slow-onset contexts, respectively.

Access to social protection was an important driver of migration. Availability of a job card under the public works programme reduced the odds of migrating in both rapid-onset (by 66%) and slow-onset (by 59%) contexts. Shortage of food for the household members was found to increase the odds of migrating in the slow-onset context by 71%. Each Indian rupee of monthly income decreased the likelihood of migrating by 34% in Odisha and 70% in Jharkhand.

Marginalisation was found to be a driver of migration in a slow-onset context. In Jharkhand, families of socially backward castes had higher odds of migrating (by 338%) than the families of other social groups.

Case study analysis highlighted the following issues faced by migrants:

Before migration

Frequent cyclones and associated flooding in coastal areas are causing salination of agricultural land. Similarly, high-intensity rainfall and long dry spells are destroying crops, eroding land and reducing forest cover. These result in loss and damage of lives, livelihoods, homes and assets along with drinking water scarcity, food insecurity and reduced demand for agricultural labour or jobs in other non-farm sectors.

Government social protection programmes like the job guarantee programme (MGNREGS) are inefficient and inadequate to help communities tide over such crises. For instance, there is limited access to MGNREGS job cards and no work even for those with job cards. Access to food subsidy entitlements is constrained by ability to navigate through administrative and operational procedures.

Limited choices for livelihoods forces communities to undertake migration decisions under distress, to support family. Migration is mostly male-dominated, but families also migrate. Even older men (approaching 60 years) are likely to undertake distress migration. These migrations are facilitated by intermediaries and labour mates that do not have any formal registration. Aspiring migrants have low bargaining power for wage negotiations, employer's contribution to social security and issuance of any offer letter. There is limited awareness about government platforms (as in Jharkhand, Chhattisgarh, Madhya Pradesh, Rajasthan) that are supporting safe migration. Even those aware of them perceive them to involve high transaction costs due to corruption.

During migration

Most of the migration occurs unnoticed, unreported, and undocumented, and the identity cards (for example, Aadhaar, mobile SIM cards) of migrants are often confiscated by intermediaries. Migrants' safety along the migration routes is jeopardised without support network and absence of social protection. Men, young women and girls are vulnerable to trafficking and/or forced and exploitative labour. Any kind of support for shelter or employment search while en route or at destination is dependent on individual networks or intermediaries.

After migration

Migrants end up working in informal sectors, where both men and women are vulnerable to physical and verbal abuse. They work without safety equipment and are often engaged in hazardous work, which increases likelihood of accidents. Many deaths are reported, but in the absence of insurance there is no compensation from employers or intermediaries. There is also no guarantee of jobs or decent worksite facilities (unlike the MGNREGS job guarantee in native villages). Lack of certified skills among migrants reduces options for work in the organised sector. Without skill certification, migrants are paid wages of unskilled workers, even if they are skilled.

Lack of comprehensive portability of social protection programmes at destination means there is no safety net for their basic needs like shelter, health and food. Even schemes that offer portability do not recognise families split across two locations and are plagued

by operational issues. For example, in theory, food subsidies — under the Public Distribution System (PDS) — can be accessed anywhere in the country, but in reality there are technological challenges of databases not in sync with states, a preference of local ration shop dealers to distribute to local residents rather than migrants, and mismatches in the entitlement baskets in the destination states.

Without a safety net or support, and often far from families, people working in informal jobs are particularly exposed to mental stress and depression. The latest report of the National Crime Records Bureau (September 2022) shows that one in four of the recorded 1,64,033 suicide cases during 2021 was a daily wage earner. The graph of daily wagers taking their own lives has steadily risen in the past few years — from 15,735 in 2014 to 37,666 in 2020 and 42,004 in 2021. This shocking trend sadly underscores the grim fact that informal workers have been virtually left to fend for themselves.

Taking action

Communities exposed to climate and other crises typically need support 'before migration' so that they are not forced to decide about migration under duress. Once they decide to move, they need support 'during migration'. This keeps them protected en route and able to take informed decisions on where to go, seek shelter and get work. Once they reach a destination, they need support 'after migration' to protect them against exploitation and ensure their rights and entitlements are adequately protected.

Policymakers need to strengthen social protection and informal labour market regulations and better align them as follows:

Before migration

Set up a comprehensive social protection system to address climate risks. Social protection programmes need to complement each other and offer access to a range of services — such as education, health, nutrition and skill enhancement — to vulnerable communities. This also needs to consider:

- Marginalised groups, including vulnerable groups like single women, elderly people, children and disabled people
- A decentralised framework that offers rights-based social protection systems (such as access to decent work, food security, shelter, and so on)
- Robust management, including nuanced delivery to ensure immediate relief, revitalised social protection programmes to prevent slippage back into poverty after a crisis, and greater progress towards universal social protection.

Integrate shock-responsive mechanisms within social protection instruments. Programmes like MGNREGS need to integrate climate risk management strategies into their design. This should ensure the programme is delivering shock-responsive wages, creating climate-resilient infrastructure and strengthening institutions' use of climate information.

Develop robust information systems and use technology to improve risk responsiveness. Social assistance systems need to benefit from updated projections of climate impacts on different geographies and across temporal scales. This requires innovative data collection, risk modelling, and financial and market-based instruments, among others. Such an approach would permit well-planned, timely and targeted responses to risk.

Make people ready for migration-related employment. Out-migration hotspots should be mapped to identify migration pathways of vulnerable communities in times of crisis. Participatory community-level assessments could identify migration patterns, education and skill levels, and migrants who seek employment in destination sites.

Facilitate decent employment at destination sites. Skill enhancement could be complemented with services that offer job placements, rights awareness, helplines and support for remittances.

Engage communities forced to displace in relocation planning. Leaders must be willing to listen to and allow communities to participate meaningfully in decision processes and have a sense of ownership in relocation planning.

During migration and displacement

Put in place a migration advisory and helpline service. A toll-free helpline number would: help migrants with 'dos and don'ts' during transit; identify temporary shelters/hostels; offer advice on how to escape trafficking or slavery-like conditions; inform them about how to register with social protection programmes; and make them aware of their basic rights and entitlements at the job site.

Support development of a network of nongovernmental organisations (NGOs) to support migrants en route and at destination site. An extended network of NGOs and civil society organisations could complement the official government-run system, acting as informal resource centres for migrants. The network can also provide food, immediate counselling and logistical support during transit and at destination site. Where needed, it can also rescue and bring migrants home.

After migration

Help households choose migration as an opportunity, not as a response to distress. Development planning needs to prepare in-migration hotspots for inflows of migrants, and ensure they can integrate them. This involves creating livelihood opportunities in tier 2 and 3 cities or in industrial hubs along with basic infrastructure and facilities to help migrants move in such cities. It should identify migrant feeder areas to such cities and map skills of people in light of skill requirements in these cities or industrial locations.

Ensure portability of social assistance for migrants through a national database or registry, and provision of comprehensive entitlement and facilities that can help families cope and survive under climate-induced distress (or other crises like COVID-19) in both source and destination areas.

Ensure coordination between social protection programmes and labour market reform. Social protection programmes that cover basic needs (shelter, food, health) of migrant workers should be aligned with labour market reforms that protect migrant rights. This will help ensure that migrants are not exploited because of a distress situation. Labour market reforms can also promote equity in access and opportunity for men and women.

1

Introduction

Why distress migration and displacement induced by climate change are urgent concerns

Developing countries are now dealing with increasingly harmful effects of climate change. Many countries are experiencing new types and forms of climate impact, and at higher intensity than they are equipped to handle (Bharadwaj and Shakya 2021). In 2020, climate-related hazards affected close to 20 million people in India (CRED, n.d.) and caused economic losses amounting to 0.9% of gross domestic product (GDP) (WMO 2021). In 2017, the Caribbean faced three category 5 hurricanes — an unprecedented event. In some countries, damage exceeded annual GDP. Cyclone Ana hit Fiji in January 2021, just a month after Cyclone Yasa struck the country's northern islands. Ana left 10,000 people homeless and caused widespread damage to both infrastructure and crops (Heinrich Boll Stiftung et al. 2021). These impacts are increasingly falling into the category of loss and damage (L&D). The capacity of affected communities and countries is compromised to such an extent through L&D that they can no longer absorb the effects of climate risks or adapt to climate impacts.

The interplay of these recurring and high-intensity climate-extreme events couple with socioeconomic factors like population density, income inequality and the degrading environment. Together, they increase the risk of survival, food insecurity and livelihood loss. In so doing, they compel vulnerable communities to migrate to find alternate ways for livelihoods and survival.

Migration can occur from both slow- and rapid-onset climate distress. Slow-onset events such as drought, for example, threaten natural resource-based livelihoods such as agriculture, livestock and fishery. These events

then compromise people's ability to earn a living, inciting them to search for better economic opportunities through migration. Similarly, when rapid-onset hazards such as hailstorms or floods damage crops, cultivable lands and property, communities may have few or no options for in-situ adaptation. Under such situations, migration is the only viable option for survival.

Our previous research (Bharadwaj et al. 2021) shows that climate change acts as a stress multiplier to socioeconomic factors, pushing people towards distress migration. Across three states (Madhya Pradesh, Uttar Pradesh and Rajasthan) of India, more than 70% of respondents indicated that drought/irregular rainfall is a significant stressor, while 23% mentioned flood and 8.3% mentioned hailstorms. Overall, 69.74% of households across all three states reported they migrate immediately after drought, flood, hailstorms or heat waves.

Our assessment of L&D (Bharadwaj and Shakya 2021) caused by climate change over 12 different geographies across the world was also revealing. It showed that a climate crisis resulted in distress migration or forced displacement. This was true whether the crisis was caused by desertification, salination, landslides, sea-level rise, drought, floods and cyclone, or some other type of extreme weather event.

These findings also resonate with the latest report from the Intergovernmental Panel on Climate Change (IPCC 2022). According to the report, extreme weather events have displaced on average more than 20 million people per year since 2008. Many of these events were exacerbated by climate change.

The report also highlights several projections for displacement and migration due to climate change. By one estimate, between 31–72 million people across sub-Saharan Africa, South Asia and Latin America would be displaced by 2050 due to water stress,

sea-level rise and crop failure. Even with aggressive efforts to cut global emissions and the most optimistic scenarios for warming this century, these pressures are going to increase. A World Bank study also projects that climate change will create 216 million internal displaced communities by 2050 (Clement et al. 2021).

Issues and challenges faced by migrants and their families

Migration helps people cope during a climate crisis, but it generates other social consequences and risks. This is true both for migrants and their families left behind (mostly women, children and elderly people) or those not able to migrate. Migration leads to breaking up of families and affects gender roles. As males migrate, the women who stay back often end up overburdened. They are forced to run the household, care for children and the elderly, and earn a living; migrating men are not able to send remittances immediately after moving. Women who migrate with men are exposed to sexual exploitation, overwork and hard living conditions (Bharadwaj and Shakya 2021).

At destination site, desperate for work, migrants have little bargaining power. They mostly find jobs as informal workers, where labour and workplace safety laws are widely disregarded. Informal employment refers to working arrangements that either legally, or in practice, are not subject to national labour legislation, income taxation or entitlement to social protection or certain other employment benefits (advance notice of dismissal, severance pay, paid annual or sick leave, and so on).

In the absence of labour market regulations, migrants are often forced to overwork, are paid less and are exposed to polluting working conditions without safety equipment. For example, migrants working in brick kilns often return home with lung disease from inhaling dust and polluted air. Most migrants work on informal contracts and are often engaged through intermediaries. This means they are exposed to exploitation and have no accident or life insurance coverage. Moreover, they do not have any employment security.

Receiving areas are often inadequately prepared to accommodate migrants in terms of basic shelter and sanitation facilities. This leads to migrants often living in unsanitary conditions, exposing themselves to disease. Most migrants do not have proper housing facilities, access to sanitation and subsidised healthcare facilities. In such conditions, access to social security can help tide them over some immediate difficulties. But most social security schemes lack portability across regions.

Once they journey from their villages to distant cities in search of work, they lose access to the social safety net. Those who migrate with family are not able to send their children to government schools or avail government-subsidised health services or school meals at the destination. This results in higher expenditure on food, health and shelter (Bharadwaj et al. 2021).

Migrants and their family need the support of:

- Social protection programmes to ensure their basic needs around housing, healthcare, food and education are met, both for the family members on the move and those left behind.
- Effective job market regulation to ensure that basic human rights and worksite entitlements are protected.

The challenges faced by migrants are primarily created because social protection programmes and labour market regulations work in siloes. They are not designed to address the needs of migrants or consider climate vulnerability in their design framework, both at migration destination and source sites.

There is a need to expand coverage of these programmes and regulations, to integrate them and to increase coherence among them. Ultimately, they should work together to provide coverage of decent work, shelter, healthcare, education and food to communities in the face of climate and other crises.

What this paper is trying to achieve

A well-designed and integrated social protection and labour market reform can play an important role in equipping communities to better cope and recover from climate shocks and stresses, particularly those that induce migration.

But the policy, planning and response framework within programmes and regulations is not adequate to deal with such reform. Actions to date have been largely reactive, like providing shelter or temporary relief camps to displaced communities after a disaster strikes. But different types of climate-related hazards generate different types of mobility and vulnerability (Box 1).

What's needed are social protection programmes and job markets more adequately aligned to mobility patterns that account for all phases of migration — before, during and after moving. To develop recommendations on these three phases, we present detailed country-level analysis based on primary and secondary research in India.

BOX 1. MOBILITY PATTERNS DURING CLIMATE CRISIS

Rapid-onset events, such as cyclones and floods, usually result in short-term displacement followed by a return to affected areas. By contrast, slow-onset events, like sea-level rise or erosion, may result in permanent displacement. Although people often wish to return to their homes, some remain in protracted situations for years or become displaced several times. Similarly, drought-related migration patterns could change from short-term seasonal migration to permanent out-migration with longer-term impact on land degradation or water availability.

We chose India for the analysis because the risk of internal displacement (IDMC 2021a) is highest among all South Asian countries (IDMC 2021b). The same report identifies flooding and slow-onset hazards like drought as key drivers of displacement. In 2020, 3.9 million people were displaced in India due to these disasters. About 2.3 million people are expected to be displaced annually due to sudden-onset hazards (IDMC 2021b).

The analysis covers the following:

- First, a regression analysis presents how climate impacts, lack of social protection and marginalisation push communities towards distress migration in two diverse contexts in India — slow onset (drought) in Jharkhand and rapid onset (floods and cyclone) in Odisha.
- Second, there is a case study analysis based on interviews with migrants to understand their issues and challenges at different stages of mobility (before, during and after migration) and how social protection programmes and job market regulations are supporting or failing to support them.
- Finally, it examines how to strengthen and better align social protection and labour market regulations to support communities forced to migrate due to climate impacts, as well as those left behind.

2

Influence of climate impacts, access to social protection and marginalisation on migration

After a brief discussion of regression analysis and methodology, this section examines how different factors influence a household's decision to migrate. It considers loss and damage from climate change, coverage of social protection, lack of adequate food from a subsidised programme, monthly income and caste.

India is probably one of the most vulnerable countries to climate change. Global Climate Risk Index 2021 ranks India as the seventh most vulnerable country based on 2019 data. A significant proportion of poor people, including smallholder farmers and landless agricultural workers with low adaptive capacity, will be hit hard by increasing climate variability. This, in turn, will damage crops and livelihoods. Internal migration as a subsistence strategy is on the rise. Around 200 million rural people already use short-term circular migration as a livelihood strategy — 15.38% of India's total population (Desai and Vanneman 2015). Climate change will further drive this migration as agriculture-dependent livelihoods come under increasing climatic stress.

For this paper, we built on an earlier study that examined climate change, migration and vulnerability to trafficking (Bharadwaj et al. 2022). The original data were gathered through both qualitative and quantitative tools, including a household survey, focus group discussions (FGDs)

and key informant interviews (KIIs). They focused on two contrasting geographies: rapid-onset events in Kendrapara district in Odisha and slow-onset events in Palamu district in Jharkhand. In all, 420 households were covered, 210 in each location. The sample was distributed evenly across 14 villages (7 in each location). The sample comprised households with migrants and without migrants.

For this paper, we carried out a regression analysis (see Box 2 and Annex for more detail on methodology) on the data obtained from the household survey and FGDs. The analysis tried to understand the degree of influence of different factors on a household's decision to migrate. The factors considered for analysis included:

- Climate change L&D suffered
- Coverage of a social protection programme that guarantees 100 days of work (and another 50 days during climate crisis) to every rural family during a year — the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)
- Unavailability of adequate food under a government subsidy scheme
- Monthly income
- Caste (social stratification) status of the household.

Research findings

Among the five variables used for regression analysis, L&D damage from slow- and rapid-onset events is associated directly with climate change impacts.

Caste is an indicator of marginality. Availability of the MGNREGS job card, shortage of food and monthly income are directly related with social protection. The result of the regression analysis on how these factors

influence migration has accordingly been presented in these three categories. To provide context to the findings of regression analysis, we have noted results of previous research where required.

Our analysis also showed that being forced into distress migration or displacement increases the probability of household exposure to trafficking¹ or modern slavery² (see Box 3).

BOX 2. REGRESSION MODEL AND METHODOLOGY

A logistic regression model was developed with households' decision to out-migrate as the dependent variable. The independent variables (X_i) included occurrence of loss and damage (L&D) because of climate change events, coverage of the household by the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), unavailability of adequate food for household members, marginalisation based on caste (social stratification) and monthly income of the household.

The model used in the analysis is:

$$\ln \left[\frac{P_x}{1-P_x} \right] = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} \dots + \beta_k X_{ki}$$

where, the subscript i is the i th observation in the sample, P_x is the probability of an event occurring for an observed set of variables X_i , that is the probability that the household decides to migrate, and $(1-P_x)$ is the probability of deciding not to migrate. β_0 is the intercept term, and $\beta_1, \beta_2, \dots, \beta_k$ are the coefficients of the independent variables X_1, X_2, \dots, X_k .

Both in Kendrapara and Palamu, the independent variables — occurrence of L&D (X_2), shortage of food for household members (X_3) and caste (X_5) — were positively associated with the dependent variable (decision to out-migrate). Availability of MGNREGS job card (X_1) and monthly income were negatively related with the dependent variable in both areas.

In Palamu, all five independent variables were statistically significant ($P < 0$). In Kendrapara, variables — availability of the MGNREGS job card, occurrence of L&D because of extreme events and monthly income — were statistically significant. Two other variables — shortage of food for household members and caste — were not statistically significant. More details on the methodology are provided in the Annex.

BOX 3. MIGRATION AND TRAFFICKING TREND IN STUDY AREA

Findings from the previous research using the same data set showed that 76% of households covered under the two study areas were migrants. The migrant respondents comprised 140 (67%) households in Kendrapara and 149 (71%) in Palamu.

Migrants in both locations become vulnerable to trafficking and suffer human rights violations. A series of questions was asked to identify migrants in trafficking or a slavery-like situation. This related specially to forced labour, bonded labour, debt bondage, wage withholding and exploitative working conditions. The percentage of trafficked migrant households in Palamu (slow-onset event area) is much higher at 42% than in Kendrapara (rapid-onset event area), where it is 16%.

Palamu suffers from slow-onset events like drought, which may explain the different trends in the two locations. Areas with slow-onset events often do not get the same level of relief and support as rapid-onset event areas like Kendrapara, which is exposed to floods or cyclones. The government has better cyclone and flood early warning systems, but drought early warning systems are not available. Further, for moderate droughts, states have to use their own budget for relief operations. As a result, they often wait until the drought becomes severe so they can qualify for relief from the central government under MGNREGS. With many droughts either unreported or declared late, communities can be forced into distress migration to survive and feed their families.

Source: Bharadwaj et al. 2022.

¹ Human trafficking is the process of trapping people through the use of violence, deception or coercion and exploiting them for financial or personal gain. <https://www.antislavery.org/slavery-today/human-trafficking/>

² Modern slavery is the severe exploitation of other people for personal or commercial gain. <https://www.antislavery.org/slavery-today/modern-slavery/>

Climate change impacts

Migration has been a way of life, especially for households in Kendrapara and Palamu. But patterns have changed dramatically over the last two to three decades due to climate impacts. Participants of FGDs and KIs in both study locations reported that the rate of migration has increased substantially in recent decades.

In Kendrapara, more than 60% of respondents indicated flood as a major climate stressor, while 87% of respondents in Palamu said they were vulnerable to droughts. Figure 1 presents the L&D reported by communities due to climate change impacts in the two locations.

Extreme climatic events like floods, cyclones, droughts and heat waves have become more frequent in both Kendrapara and Palamu over the last two decades. This has increased the vulnerability of communities in these areas. All Kendrapara respondents reported a change in precipitation and higher temperatures over the last five years. More than half reported that environmental stressors (floods, cyclones, erosion, and so on.) have become more hazardous and frequent in the last decade. Drought and heat waves are similarly destroying crops in Palamu. These changes are being attributed to climate change. The households incurred financial losses because of damage of crops, livestock and equipment. Loss of lives, because of climate events, was also reported.

In the present analysis, the odds ratio (OR) describes the chances of a household deciding to migrate than not to migrate. The ratio was calculated from the regression coefficient (to measure the association between the independent variables (X_i) and dependent variable (Y)). The OR is the likelihood of a thing occurring rather than not occurring.

Interpretation of OR values (climate impacts) for Kendrapara:

- Occurrence of loss and damage due to floods and cyclones increases the odds of migrating by 687%.

Interpretation of OR values (climate impacts) for Palamu:

- Occurrence of loss and damage due to drought increases the odds of migrating by 172%.

The regression analysis output shows how L&D suffered due to climate change increases the likelihood of migration. Community members in the FGDs and KIs reported that people migrated primarily for economic reasons. But migration stems from the increasing unsustainability of agriculture, forest and fishery resources — a tell-tale impact of changing weather patterns and extreme weather events. The failure of agriculture and decline of yield from forest

resources are directly responsible for unemployment or underemployment. Further, droughts induced by climate change also cause financial loss for farmers. In Kendrapara, households suffered losses beyond crop damage due to sudden-onset disasters like floods and cyclones. Damage to assets, houses and livestock influenced their decision to migrate.

Lack of social protection

Social protection programmes can help vulnerable households absorb the effects of climate risks, adapt to climate impacts and transform their capacities and strategies to address growing climate stresses. Such programmes can act as a safety net and help diversify livelihood options for poor and vulnerable populations. In addition, they can allow these groups to practise less resource-intensive livelihood options. Finally, they can invest in the capacity of poor and vulnerable households to prepare, cope and recover from shocks, build their resilience, and ensure they do not get trapped or slip into poverty as a result of recurring climate crises (Bharadwaj and Shakya 2021).

Interpretation of OR values (access to social protection) for Kendrapara:

- Availability of the MGNREGS job card decreases the odds of migrating by 66%
- Each additional rupee of monthly income decreases the odds of migrating by 34%
- Regression coefficient of shortage of food was not found to be statistically significant.

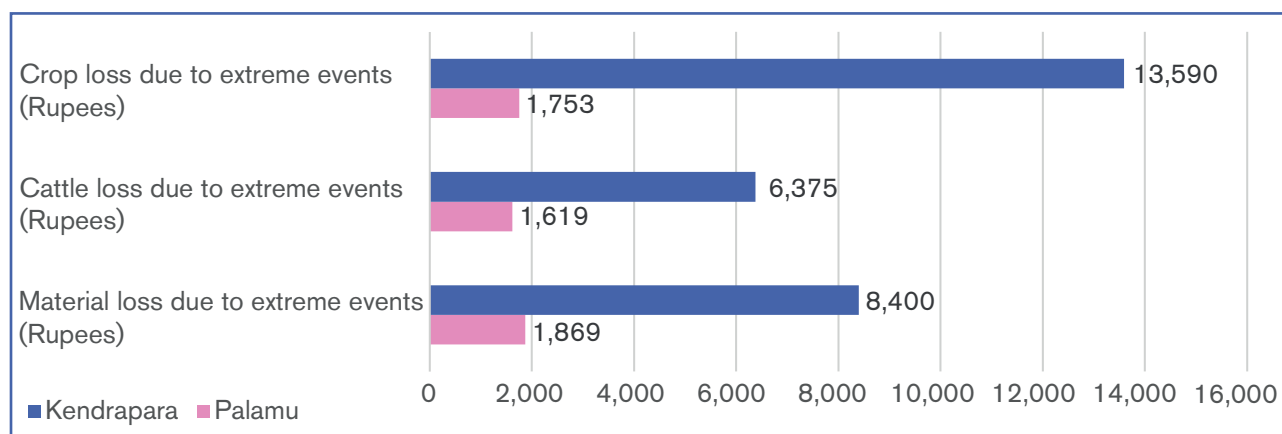
Interpretation of OR values (access to social protection) for Palamu:

- Availability of the MGNREGS job card decreases the odds of migrating by 59%
- Shortage of food for household members increases the odds of migrating by 71%
- Each additional rupee of monthly income decreases the odds of migrating by 70%.

Regression analysis output shows that social protection mechanisms in both rapid-onset and slow-onset contexts did not help households absorb climate shocks or efficiently cover all eligible households.

Availability of MGNREGS job card. MGNREGS guarantees 100 days of wage employment to every rural household in India and provides an additional 50 days of employment in case of climate crisis such as floods and droughts. In that context, access to MGNREGS benefits become important for households to tide them over a crisis.

Figure 1 Loss due to climate extreme events in the two locations in rupees



Regression analysis outputs show that access to MGNREGS job cards decreases the likelihood of migration in both locations. This signifies the potential of the public works programme as an adaptation tool to reduce the negative impacts of climate stress. Increased coverage of the MGNREGS programme among the climate-vulnerable regions can potentially reduce migration. However, in Kendrapara, the coverage of the MGNREGS job card was only 33%. Similarly, in Palamu, only 42% had a MGNREGS job card. A substantially higher percentage of the trafficked migrant category of respondents did not have the job card. Thus, this category of households would not be able to receive employment from the programme. This could be a crucial factor increasing the vulnerability of these households and a driver of trafficked migration.

Prior to COVID-19, everyone with a job card could find work in Kendrapara, but coverage was less than 15% in Palamu. After COVID-19 and during the lockdown, less than 9% of respondents in both locations could get work under MGNREGS. This shows the programme suffered from administrative and operational deficiencies during the crisis, creating a double whammy for communities.

Shortage of food for household members is estimated to be the most dominant driver of migration in Palamu. In the case of Kendrapara, the regression coefficient of the independent variable-shortage of food was not found to be statistically significant. This could be because the coverage of Public Distribution System (PDS) shops through which government provides subsidised food grain to eligible families was reported to be high in Kendrapara at 68%, while it was negligible in Palamu (0.47%). This indicates that increased coverage and efficiency of the PDS is necessary to address food insecurity. FGD and KII participants from Manatu and Chainpur blocks of Palamu said that variations in precipitation, increased drought and extended frost conditions led to food scarcity. In Palamu, 43% of total respondents said they often have only one meal per day. The percentage was higher among trafficked households.

Lack of household income drives the household to be trafficked. Average monthly income earned by the household at its source location varies greatly: around 7,793 rupees in Kendrapara and around 1,953 rupees in Palamu. The main livelihoods of respondents in both study locations were in climate-sensitive sectors like agriculture, forestry, fishing and livestock rearing (50% in Kendrapara; 87% in Palamu). In the case of agriculture, households in both contexts owned marginal landholdings. While average landholding in India is 1.08 hectares, only 22% of sample households of Kendrapara owned more than 1 hectares. Close to half of Kendrapara households were landless. In the case of Palamu, although the vast majority of households had some land, their landholdings were insignificant. The average size of agricultural landholding among surveyed households was only 0.04 hectares. Among the three strata (non-migrants, non-trafficked migrants and trafficked migrants), non-trafficked migrant households had larger landholdings. This indicates that increased coverage is required to address livelihood security programmes in the climate-vulnerable regions. Mean monthly income at source was only 1,953 rupees in Palamu. FGD and KII participants reported lack of income at source to manage the household needs as one of the major factors that drive migration.

Marginalisation

Interpretation of OR values (caste/social marginalisation) for Kendrapara:

- Regression coefficient of caste was not found to be statistically significant.

Interpretation of OR values (caste/social marginalisation) in Palamu:

- Being Scheduled Caste (SC)/Scheduled Tribe (ST) increases the odds of migrating by 338%.

In Kendrapara, respondent households were predominantly from the general caste category (not considered marginalised). Only 9.52% of sample households were from the SC³ category. Respondents from Kendrapara did not report on social issues such as discrimination on the basis of caste, class and religion.

In Palamu, the community in the study area was divided into two groups. In one group were the better-off households who belonged to the general caste category (Brahmins and Yadavas). They owned land and had higher education and could take up formal employment. Agricultural lands in the area belong predominantly to this group. In the other group are poorer, asset-less households who mostly depend on subsistence farming and forest resources for their livelihoods. These people belong predominantly to the SC and ST⁴ community. Among the survey respondents of Palamu, more than 98% belonged to the SC and ST category. This drought-prone district also has a long history of feudal exploitation and bonded labour. Respondents of FGDs and KIs in Palamu said general caste category families belonging to dominant castes have gradually grabbed their land. Elderly people shared stories about working as bonded labourers for the dominant caste, but youth today prefer to migrate. For youth, working as a slave at a dominant caste's home is demeaning, while migrating to earn wages is seen as respectable. But even in destination sites they are exploited. They are desperate to find work during climate stress, which means men migrate with low bargaining power and low self-respect. This, in turn, results in trafficking or being trapped in a slavery-like situation.

Decision to migrate – multiple pressures lead to tipping point

In the study area, climate extremes in coastal Odisha are predominantly rapid-onset events like cyclones, floods and storm surges. Jharkhand primarily experiences drought, which is typically a slow-onset event.

The analysis of migration and trafficking drivers in two contrasting contexts has offered some interesting insights. Kendrapara had been one of the most fertile and prosperous regions of Odisha. But climate extremes, in the form of rapid-onset events, have proven that even stable ecosystems and prosperous economies can collapse.

People in Kendrapara have better literacy and awareness levels than those in Palamu. Average landholding in Kendrapara, though less than the national average, is better than Palamu. Average household income in Kendrapara is also higher than in Palamu. Most non-trafficked and trafficked migrants from Palamu belonged to SC and STs. In Kendrapara, migrants were predominantly from general caste communities. They were not observed to face social discrimination in their villages. The area, unlike Palamu, is free of Left Wing Extremism. The villages of Kendrapara have better infrastructure facilities than those in Palamu.

Despite these assets, the vulnerability of people in Kendrapara has increased tremendously, primarily due to climate change. More frequent cyclones and floods coupled with sea-level rise and sea water intrusion have caused L&D of livelihood assets, soil erosion and land degradation. Consequently, socioeconomic problems such as decline in income, unemployment and indebtedness have cropped up in the last few decades. Efficient social protection coverage might potentially enhance people's absorptive and adaptive capacity. But social protection programmes are inadequate and undercovered. As a result, the vulnerable sections of the area are forced to migrate. The most vulnerable households are prone to trafficking.

In contrast, Palamu is chronically underdeveloped in terms of socioeconomic–political factors. Palamu district is one of the most exposed and vulnerable regions to climate change impacts. Over time, the climate of Palamu has shifted from sub-humid to semi-arid, causing frequent and prolonged drought and frost. The poor access to social protection entitlement means communities have no option but to migrate in the face of livelihood loss, food insecurity and water scarcity. Our analysis showed that households engaged in trafficked migration are more vulnerable than those with non-trafficked migrants and non-migrants. The trafficked migrants need coverage of social protection and safeguarding of rights when on the move and at destination site.

³ Scheduled Caste are those castes/races in the country that suffer from extreme social, educational and economic backwardness arising out of the age-old practice of untouchability and certain other castes/races on account of lack of infrastructure facilities and geographical isolation, and who need special consideration for safeguarding their interests and for their accelerated socioeconomic development. These communities were notified as Scheduled Caste as per provisions contained in Clause 1 of Article 341 of the constitution. <https://vikaspedia.in/social-welfare/scheduled-caste-welfare-1/scheduled-caste-welfare-in-india>

⁴ Article 366 (25) of the Indian Constitution defines Scheduled Tribes as "such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this constitution." Article 342 prescribes procedure to be followed in the matter of specification of Scheduled Tribes. The criterion followed for specification of a community, as Scheduled Tribes, are indications of primitive traits, distinctive culture, geographical isolation, shyness of contact with the community at large, and underdevelopment. This criterion is not spelt out in the constitution but has become well established. <https://vikaspedia.in/social-welfare/scheduled-tribes-welfare/scheduled-tribes-in-india>

3

Access to social safety net and protection under job market regulation: issues faced by migrants before, during and after migration

This section examines the needs of migrants throughout their experience, including: social protection and status concerns before migration; the need to move safely during migration; and fault lines with informal job markets available to migrants after migration.

India spends more than 2% of its GDP on core safety net programmes. The budget estimates of India's central and state governments for social security and welfare amounts to more than 1.6 trillion rupees, which has grown exponentially since the last decade (Kanwal n.d.).

The COVID-19 pandemic exposed issues and challenges with social protection systems in India. Migrant workers lost their jobs and shelter without notice, following the nationwide lockdown. They could not access social protection schemes at destination site to receive subsidised food grain and health coverage.

As a result, they were forced to head back home despite lack of transport facilities. Some walked hundreds and thousands of kilometres under treacherous conditions. This was because the social protection entitlements that could have helped tide them over in this difficult situation were only available in their native villages. The crisis laid bare the issues with social protection mechanisms. They have failed to recognise the circular and seasonal migration patterns that are increasingly being adopted by communities when climate crisis destroys their crops, homes and livelihoods.

Communities exposed to climate and other crises typically need support 'before migration' so they are not forced to decide about migration under duress. Once they decide to move, they need support 'during migration'. This keeps them protected en route and able

to take informed decisions on where to go, seek shelter and get work. Once they reach a destination, they need support 'after migration' to protect them against exploitation and ensure their rights and entitlements are adequately protected.

The following section examines the issues migrants face due to poor coverage and access to social protection and informality in job markets in these three stages of mobility. The case studies draw on interviews with migrants.

Before migration: social protection status and concerns

The effectiveness of social protection measure is dependent on: **access** by targeted individuals to the benefits, when they need it; **coverage** of the eligible families and individuals; **adequacy** of the benefits and entitlements to meet the needs of the eligible households and individuals; and the **inbuilt resilience** of the system to deliver effectively, scale up efforts and reach the targeted beneficiaries in time, during crisis.

India has a long history of implementing social assistance programmes. In all, the Indian government funds more than 950 such programmes. Most are small, fragmented and plagued by administrative leakages (Ministry of Finance 2017). They are also typically characterised as fraught with operational inefficiencies and inequities in budget allocation. Numerous studies have documented their incomplete coverage of the poor, the extensive leakage of benefits to the rich, significant operational inefficiencies, and high potential for fraud and corruption (Coady and Prady 2018). For example, despite its broad coverage of the population, a sizeable under-coverage of lower-income groups still exists under PDS, which provides subsidised food grains to poor families. It has also been estimated that 36% of PDS spending never reaches intended households due to 'ghost beneficiaries' and the large illegal diversion of subsidised goods resold on the open market — of every 100 rupees spent on the programme, only 64 rupees reach households (Ministry of Finance 2017).

Are recent advancements to improve operational efficiencies through the 'JAM trinity' working?

In search of a more efficient system, India's policy on social assistance has been heading towards Universal Basic Income in the past few years (Coady and Prady 2018). It started with the establishment of the 'JAM trinity' (Jan Dhan — bank accounts for all; Aadhaar — biometric identity cards for all; and Mobile phones). This provides the technological base for performing cash transfers directly into the accounts of individuals and

families. Progress so far has been encouraging. The Aadhaar biometric identification system has covered 99% of the population aged 18 and above. The Jan Dhan scheme has enabled 46% of households to access bank accounts. Finally, mobile phone coverage has been extended to 87% of the population (Coady and Prady 2018; INFORM 2020).

Digital interface and identity cards are meant to reduce inefficiencies and enhance access to social protection benefits. But they are not aligned with the practical realities and needs of local communities. The case study of Mokta Gope (Box 4), a migrant from Jharkhand, had four lessons:

- It is not easy to open bank accounts, especially for women unable to go to distant locations while caring for young children
- Discrepancies in the Aadhar card (due to the fault of government agents) mean beneficiaries are not recognised in the government database; there are no local centres to rectify this issue at village level
- Lack of awareness, poor digital skills and illiteracy among members who are non-migrating women (spouses of migrant workers residing in source areas) meant they could not make complaints or get simple issues resolved until migrant members returned
- Local centres or community-level agents to support the family of migrant workers with these issues are lacking.

PHIA foundation, a grassroots NGO, has developed an innovative model of village helpdesks run by women leaders (Bharadwaj and Kaur 2022). These help families get access to their entitlements under social protection programmes. PHIA staff train local women leaders about social protection programmes, eligibility criteria and entitlements and how to identify and support vulnerable community members. The women use a range of participatory tools, such as community surveys, risk and vulnerability mapping, and resource and livelihoods mapping, to collectively identify the most vulnerable households. PHIA mentors support them to fill out forms/applications for these households to access their entitlements. The mentors also help them take applications to government officials for approval. Since this initiative started in 2018, the women leaders have established a rapport with the government functionaries. The women have become confident enough to develop and take these applications to government offices on their own. Even if this initiative is only working at a small scale, policymakers should take note of its potential. They should consider using this model to develop grassroots women leaders as delivery agents for social protection. This would provide guidance and ensure entitlements reach the most needy and vulnerable at the local level.

BOX 4. BEARING THE BURDEN OF HIGH TRANSACTION COSTS FOR ACCESSING SOCIAL PROTECTION

Motka Gope, a resident of Village Kursi, District West Singhbhum, supports a family of seven persons (mother, wife and four young children).

Rainfall in his native region was erratic, concentrated to a maximum of seven to ten days during the months of July–August. The extreme weather and lack of sufficient work under MGNREGS has forced Motka and many of his peers (in their 20s and 30s) from Kursi and neighbouring villages to supplement their local wage incomes. To that end, they migrate to urban centres in states like Odisha, Chhattisgarh, Gujarat, Andhra Pradesh and Telangana.

With the help of a labour mate from the same village, Motka found work at a tile production cluster in Morbi, Gujarat. He manages to make about 12,000 rupees per month, which he remits home. His wife stayed back in the village to take care of the family members and supplements the monthly family income by 2,000 rupees through sundry daily wage labour activities (about five to six days of work in a month).

While migration used to be seasonal, most migrants now return only for a short duration to attend to some urgent family matters or paper work. Motka is back in the village without any paid leave from his employer to get important paperwork done — fixing mistakes in his wife's Aadhar card; entering his younger daughter's name as a beneficiary in the family ration card; and opening his wife's zero-balance account (the Jan Dhan account) as the administrative system back home is difficult for his illiterate wife to navigate.

The trip home inflicts a high opportunity cost for Motka. He is losing an assured net earning of 12,000 rupees (net of 2,000 rupees deducted by his employer for board and lodging). Moreover, he has no other employment benefits (such as Provident Fund, Employees' State Insurance). He wants to return to Morbi quickly, despite the lack of 'decent working conditions', a conspicuous absence of administrative platforms to cater to migrant workers from Jharkhand in Morbi, and an absence of any local group/centre to facilitate access to social protection for his family in the village.

Job guarantees and nutritional security programmes are failing to deliver

MGNREGS, one of the largest social protection programmes in India, can be essential for coping with climate shocks. But our research shows that MGNREGS did not act as a viable safety net to rural families in the study area (Box 5). Administrative delays in sanctioning work, lack of transparency and delay in wage payment are some reasons why families do not consider MGNREGS as a fall-back option during a crisis. Having only 100 days of work a year at most, at comparatively lower wages than urban rates, does not help. Migrants feel they will be able to sustain their families better if they migrate, even though it exposes them to hardship at destination sites.

Respondents in the research area had many suggestions on how to strengthen MGNREGS. They would like the programme to deliver jobs and wages more quickly, for example. Other suggestions relate to revising the scheme, such as increasing wage rates and minimum number of guaranteed days of employment; these need more careful consideration by government.

The case study of the Lakra couple (Box 5) also shows the impact of a single ration card for undivided households (though each household manages its livelihoods separately). Such an approach poses a

challenge to access entitlements under the National Food Security Act (NFSA) for several of such migrants. Despite portable food subsidy entitlement through use of PDS cards, rights holders still feel that access to entitlements depends on personal networks and is not necessarily their right.

Challenges to accessing social protection extend beyond the NFSA entitlements, including access to government schools for the children of migrants at destination sites. The challenge is further compounded when the families of migrants are split across both the source and destination locations. There is a need to explore extension of social protection to rights holders of migrant families who are divided across source and destination areas.

Migrant Workers' Cards issued through support and outreach from the state-run Migration Control Room (Bharadwaj 2022), a novel initiative of Jharkhand state government, are beginning to build the confidence of those starting their migration journey. But many migrants from remote villages are likely to go unnoticed and migrate uninformed. There is a need to reach out to the range of informal intermediaries that may be connecting workers from source areas with potential contractors and employers. These intermediaries (labour mates/labour supervisors) should be encouraged to insist that aspiring migrants register at the State Migration Control Room before embarking on their journeys.

BOX 5. MEETING THE DEMAND FOR WORK UNDER MGNREGS IS A HUGE CHALLENGE

Anima and Dominik Lakra (30 and 34 years old, respectively) live in Urmi village in Jharkhand. They are a young couple willing to take risks in the hope of better livelihoods and a better future for their children. Parents to four children, they belong to a below poverty line (BPL) family, and have no landholdings in their name.

Lack of regular wage employment for both does not leave much scope for potential savings. Working as daily wage labour, the couple makes about 10,000 rupees per month. Work is available to Anima for between seven to ten days near her village. Meanwhile, Dominik commutes daily to Gumla town to look for odd daily wage employment. He earns a daily wage of 300 rupees. The couple has struggled to get work under MGNREGS. Highlighting the ineffectiveness of the job scheme, Anima adds that she generally refrains from demanding work under MGNREGS. For her, work is generally not available when required. In addition, backhoe loaders and excavators are deployed for the earth work, which otherwise could have given some work to people like her.

While they both confirmed having a job card under the scheme, they could not find either one in their house. Interestingly, Anima who is Class 3 pass (her husband having studied till Class 5) was quite eager to share her various entitlement cards and documents. But the missing MGNREGS job card suggests the card may have been left with the office of the Village Panchayat. Anima is also unaware of “unemployment allowances under MGNREGS if the government fails to provide jobs within 15 days of demanding work”.

In the absence of regular work opportunities in the village, the couple has decided to migrate for work. Incidentally, almost every household in the village has at least a single male migrant working in brick kilns of Bihar, Uttar Pradesh, West Bengal and Chhattisgarh. A few also sometimes go to the northeastern state of Tripura.

The Lakras share their ration card with Dominik's elder brother's family. The card is registered in the name of the wife of Dominik's elder brother. Anima's name and her husband's name are registered as part of the NFSA entitlement card. The wife of Dominik's elder brother (Anima's sister-in-law) manages claims for entitlements and distributes grains at the family level. A single ration card for both households has become a challenge for Anima as she moves to Ghaziabad in a few days. She is completely unaware of the processes for claiming her entitlements at the new location.

The One Nation One Ration Card (ONORC) under the Public Distribution System of the government of India is backed by a strong technological portability platform. But rights holders still feel that access to entitlements is a function of personal networks to navigate through the “maze of administrative procedures”.

Challenges to accessing social protection extend beyond the NFSA entitlements. Anima's youngest child (a four-year-old girl) has been getting supplementary nutrition at the Anganwadi Centres. But Anima does not have any idea how she would access this in her new workplace in Ghaziabad City.

Anima's apprehensions are reflected in some fundamental queries: “Where will we stay? How will we be able to use the various cards? Who will be our first port of call in an emergency? Will it be the State Migration Control Room or the Self-Help Group Didis (the JSLPS group that she is a member of) or both?” A myriad of such questions bother Anima and her husband Dominik, even as they prepare for their journey to ‘greener pastures’ with mixed feelings of hope and fear.

During migration: moving without safety net exposes people to trafficking

There are no social protection programmes designed to support migrants en route such as information hubs, advice or temporary shelters. The Lakra couple, for example, were excited to assemble all the needed papers, well in time, but they found it problematic to manage multiple cards (Box 5). Since Anima and Dominik Lakra do not have a smart phone, they carried

photocopies of these papers for use during travel, while storing the originals safely. Anima's apprehensions were still reflected in some fundamental queries: “Where will we stay? How will we be able to use the various cards? Who will be our first port of call in an emergency? Will it be the State Migration Control Room or the contractor that gets them a job?” A myriad of such questions bothers aspiring migrants and fills them with mixed feelings of hope and fear. Policymakers need to take up these issues when designing social protection programmes.

The absence of safe pathways for migration puts individuals who choose this option at greater risk. The case of Lakshmi (Box 6) indicates how climate stressors coupled with limited non-farm wage employment opportunities force young girls and women of the ST community (school dropouts) to explore alternative opportunities. This may leave them vulnerable to human trafficking. These phenomena are observed in tribal pockets of states like Jharkhand, where older women who have 'contacts' in urban locations act as channels for the young women and girls to escape their poverty. These young girls are generally taken to cities like New Delhi and Mumbai. With such cities having a huge demand for domestic help (deployed by households to do cleaning, cooking and washing), the job market for young girls and women appears attractive at first sight. But the usual pattern is for contractors to retain all identity cards of individuals, along with mobile SIM cards of their mobile phones, before they embark on the journey. With no written contract from the contractor or employer or any discussion about their monthly

remuneration, these women end up as victims of human trafficking and forced labour. Despite its growing size, the job market for domestic help is not regulated, and such young women and girls are left to fend for themselves. There is no mechanism for these young girls and women to demand their rights or create pressure on contractors to refrain from such practices.

Linking up young girls who are school dropouts with providers of vocational skills can perhaps ensure them better livelihood opportunities in their own community or even in distant locations. Also registering aspiring migrants with the Migration Resource Centres can ensure a safer migration. But not all states have such centres.

With no access to information about the nature of jobs and where they are available, prospective migrants are forced to rely upon local contractors/labour mates or friends and family who have already migrated for work opportunities. Dependence on such informal channels is risky for many reasons. A written work contract is

BOX 6. THE STORY OF LAKSHMI: LURED INTO BONDED LABOUR

Lakshmi (aged 18 years), from Sarbil in Chaibasa district, dropped out of school after Class 9. This is common for girls who either lack government school facilities or the safety to commute to a nearby school.

With old, non-working parents and a patch of homestead land, Lakshmi's life in Sarbil (along with her two teenage brothers and a younger sister) was hand-to-mouth. Only her elder brother managed to eke out a meagre earning of 2,500 rupees per month doing odd local wage work.

Climate stressors coupled with limited non-farm wage employment opportunities pushed Lakshmi to explore other options. After connecting with another woman (a contractor) from the neighbouring village, Lakshmi decided to migrate with her to Noida — a city in the vicinity of New Delhi. It has huge demand for domestic help (full-time or part-time servants) deployed by households to do cleaning, cooking and washing.

The contractor, Surjo, provided for her initial accommodation in New Delhi. However, she took away Lakshmi's mobile SIM and her Aadhar card (unique ID issued by the government of India to all citizens). While that bothered Lakshmi, she still hoped to find decent work through the contractor. In quick succession over the following week, the contractor asked her to change employers twice.

Much to her chagrin, the second employers were rude and harsh. She was forced to work long hours with hardly any break in between. The meagre food provided by her employer coupled with heavy physical labour (lifting heavy loads of ration from the ground floor to the third floor of the building) made the situation unbearable for Lakshmi.

With no written contract either issued by the contractor or the employer or any discussion about her monthly remuneration, Lakshmi was at the end of her wits to simply escape. She had no idea where to find Surjo and no subsequent contact with her. Consequently, Lakshmi realised she had fallen prey to human trafficking resulting in forced labour.

Befriending a part-time house maid (most likely from Nepal, as per Lakshmi) deployed by the same household, she managed to reach out to her brother over the phone and share her plight.

Lakshmi's brother was quick to act on her distress call. With the help of local police in Jagannathpur, the Migration Control Room at Ranchi and the local police in Noida, Lakshmi was finally rescued from her bondage and brought back to her parental village in Sarbil. Needless to mention, the incident has shaken her confidence. It will be a while before she considers exploring other opportunities outside her village home.

non-existent (other than when people find opportunities in state-run corporations, for example). Prior information shared about monthly wages may be incorrect or misleading. Communication channels are controlled (many migrants risk confiscation of their mobile phones and government IDs by either the contractor or employer). Living conditions at destination are also sub-optimal. Such informal migration pathways raise the risks for migrants like Mangra Kharia (Box 7).

After migration: fault lines with informal job markets available to migrants

Irrespective of where migrants find work — in the organised or unorganised sector — the nature of work is mostly informal, which leaves them without a social security net. Nearly 90% of the Indian workforce is informal. While it is spread across both unorganised and organised sectors, the bulk falls under the unorganised sector (91%). Moreover, 92% of India's workforce with informal employment is drawn from migrant labour (NCEUS 2007). This adds another layer of vulnerability for migrants.

Employment in India, even in the formal sector, is increasingly informal, which has an impact on the labour force. Contractual or outsourced jobs in the formal sector are rising. In these cases, larger companies or factories contract agencies/intermediaries to cater to specific types of jobs. These companies or intermediaries then hire workers and supply them to larger companies or factories. They keep their workers off-record and do not provide the health and accident insurance and other job benefits necessary under law. This helps companies bring down their overheads and get the same work done at a lower cost. This trend is leading to informalisation of the sector with its inherent issues of job insecurity, lower wages, poor working conditions, and so on. Addressing issues of low skill levels among the informal labour force, labour market rigidities and barriers to registration for small- and medium-sized enterprises (SMEs) can pave the way for greater formalisation of employment.

Absence of strong governance around existing provisions, such as the Inter State Migrant Workmen (Regulation of Employment and Conditions of Work) Act, 1979, adds to the woes of migrant labour. The Act does lay down guidelines (MoLE 1979) on wages to be

BOX 7. FORCED LABOUR — A LONG WAY TO DECENT WORK

Mangra Kharia (aged 60 years, a Class 9 dropout) was struggling to make ends meet on his 1.6 hectares land due to a gradual reduction in agricultural productivity (soil erosion of cultivable land during heavy rainfall the likely culprit). Incidentally, Mangra did not have a NREGA job card in his name. On average, he was managing to find about five to ten days of work each month at a rate of 250–300 rupees per day. He worked as an unskilled house construction worker or a farm labourer in the villages contiguous to Murkunda Patra Toli.

The meagre agricultural production and NFSA entitlements failed to meet the needs of his three family members (self, wife and a 19-year-old son). Thus, Mangra was forced to explore other avenues of employment. His search for a recruitment channel led him to Prakash (a resident of a neighbouring village). Prakash mentioned an opportunity with a fishing company at the border of Karnataka and Goa. He said they were looking for men for trawling and they were willing to pay 10,000 rupees per month, including food and stay as other perquisites. While no formal work order was issued, Mangra was willing to try his luck and generate some capital to build assets back home.

Believing in Prakash's word, Mangra and another five to six persons from the vicinity set off in November 2021 with the promise of an alternative livelihood. The work involved fishing at night in the seas. They were provided with accommodation in huts at the site and received food twice a day from a centralised kitchen.

When Mangra and his peers demanded weekly wages after about ten days of work, they were met with hostility from the employer, who even physically assaulted one of them. Mangra soon realised the only way out of the precarious situation was through an early exit. Seeking help was proving to be difficult as he had been forced to deposit his mobile phone and Aadhar card with the labour supervisor on his arrival at the 'fishing island'. Luckily for him, Prakash (who might have been in cahoots with the employer and labour supervisor) still had access to his mobile phone. He called up an 'aunt' who then contacted the Gumla police. The State Migrant Control Room (MCR) at Ranchi also got involved in the rescue operation when the local police reached out to them. Unsurprisingly, Mangra had not registered himself with the MCR before embarking on the journey. A high level of coordinated action by MCR and the Jharkhand police led to the rescue of Mangra and his Gumla group.

Sadly, Mangra was only paid a sum of 700 rupees as compensation for approximately 30 days of work on the trawlers. He still holds a grudge against the labour supervisor and the employer for not paying all of his wages.

paid, displacement and journey allowance, amenities for migrant workmen such as suitable accommodation, protective clothing, provisions for raising industrial disputes, and so on. But implementation leaves much to be desired. The Building and Other Construction Workers Act (MoLE 1996) seeks to regulate their employment and conditions of service in the construction sector in terms of safety, welfare and health measures. But, again, it is poorly enforced. Most workers are unaware of its provisions.

Labour mates: critical stakeholders in designing safe migration pathways.

The informal system of labour mates feeds recruitment of labour from the rural hinterland to the urban and peri-urban informal economy. This system is largely embedded and accepted in rural areas. The case of Goma Gope (Box 8) shows how these persons wear two hats. On the one hand, they are senior labourers at destination sites. On the other, they are recruiters for contractors from defined catchments in rural areas. Labour mates typically work on a retainership fee (around 15,000 rupees per month) and they intervene on behalf of workers for better pay, and so on. Turnaround time is short for supplying workers to the contractors. Labour mates maintain regular contacts in feeder areas of people willing to migrate at a short notice. It is understood that migrants will not know where they will be employed or their terms of employment and will not receive any formal papers.

Their ability to help peers find employment gives labour mates social standing in the community. As a result, distressed groups of workers may not bother about formalities before migration (such as a formal offer

letter from the contractor, wage rates, and discussion about other benefits, such as accommodation, medical insurance and leaves). Labour mates offer the government a great opportunity to develop a localised approach to registering migrants at source and ensuring their coverage under social protection programmes at destination. But such a model needs to create awareness among labour mates and also incentivise their action.

Addressing the skills challenge in job markets.

Migrants also suffer from lack of skills. India enjoys a demographic dividend with more than half of the population in the working age group (median age in India is 28.1 in 2022) (World Population Review 2022). But this dividend gets overshadowed by the reality that skilling youth is challenging when most jobs are in the informal sector. Further, the national technical and vocational education and training policies tend to focus exclusively on the needs of the formal economy.

The dearth of market-linked skills and lack of certified skills reduce options for migrants. Lack of certification or documentation means that even if they are skilled, they are paid wages of unskilled workers. These jobs are all in the informal market, far from the reach of labour laws. This means there is no mechanism for workers to raise grievances whether related to pay or working conditions. We revisit the case of Motka Gope (Box 9) from Kursi village in Chaibasa town of Jharkhand.

The situation tends to be more difficult for women. Women are limited by their mobility and/or existing skills level. Moreover, lack of suitable work opportunities in their village means they are forced to consider work

BOX 8. LABOUR MATES — LEVERS FOR IDENTIFYING MIGRANTS IN SOURCE AREAS

Goma Gope, of village Kursi in Chaibasa, started out as a migrant labourer in his 20s to Bangalore and then found his calling at Morbi in Gujarat.

Initially a worker in various SMEs, Goma (who studied till Class 8) was quick at establishing rapport with the contractors in Morbi town. About 15 years ago, Goma seized the opportunity and became a labour mate for contractors in Gujarat.

Goma now largely stays in the village with his wife and three daughters. He works on a retainership of 15,000 rupees per month for supplying workers to the contractors at short notice. For instance, for the month of July 2022 he aimed to send 75 workers spread over three batches. He is given money for arranging the travel and food of the workers during transit.

According to Goma, the contractors do not provide written work orders or employment offers. The process is all based on the trust of villagers in him. He is fairly comfortable to go by verbal requests over the phone for supplying labour to Morbi-based contractors.

He is completely unaware of the need for government to register workers and does not even deem it necessary. For him, issues of social protection and related matters of registration are best handled by the government officials. He would prefer not to get involved in these matters.

outside their limited support network. Even women who can find work under MGNREGS struggle with the absence of support mechanisms. These include lack of day-care facilities for their children or lack of access to Anganwadi Centres (to support lactating mothers and children below five years) in their vicinity. This implies they may not be able to take up work even when it is available. Often, women are also challenged to find work in line with their education/skill level. Most work available in rural areas under MGNREGS is unskilled. There are hardly any opportunities for women who may have been educated up to intermediate levels. A case in point is that of the Chamoli widows (Box 10).

For any skill development initiative to succeed in the informal sector, policymakers should consider several key factors: sectoral composition of workers, educational level of the labour force, types of employment opportunities and size of the enterprises (Sanghi and Sensarma 2014). Developing viable, market-linked, future-fit skills is central to addressing the challenge of low wages in the informal sector. Such skills can be a stepping stone for fulfilling the aspirations of the migrant workforce. There are learnings to be drawn from the high rate of unemployment among those graduating from vocational institutes. These possibly point to glaring partnership gaps between skilling

BOX 9. PRESSING ISSUES OF INFORMAL WORKERS

Motka Gope, as is the case with most prospective migrants, began his search for jobs in urban areas by reaching out to his peers. His brother-in-law, who was then working as a welder, helped him find a job paying 270 rupees per day in Jashpur, where he stayed for 1.5 years. Dissatisfied with the differential wages given to skilled workers compared to newcomers like him, Motka moved to yet another location: Vishakhapatnam. The stay here could not last long, even though wages were a shade better than at Jashpur. The contracts paid scant attention to occupational safety and health. No safety equipment (like goggles for welders) meant that Motka faced the risk of accidents and weakening eyesight. This forced him back to his village where he stayed for another 10–12 years. At that point, faced with rising pressures of caring for his family of seven, he was forced to migrate again in search of better opportunities.

He had worked as a welder earlier but not been certified for his skills either from his employers in Jashpur and Vishakhapatnam or from an educational institution. This implies that he will still not be paid at the rates given to skilled workers. There are no institutionalised systems for ensuring contractors and employers in the micro-, small- and medium-sized enterprise sectors promote skilling and certification of their workers at the lower rungs of the skill pyramid. Therefore, Motka is likely to lose out at least 3,000 rupees per month because he lacks skills certification in tiles manufacturing.

BOX 10. LACK OF SUITABLE WORK FOR WIDOWS OF CHAMOLI GLACIAL MELT

Hemanti Devi (age 25 years), Rinki Devi (age 30 years) and Nima Kumari (age 22 years) are victims of a common tragedy. They lost their husbands to the glacial melt in February 2021 in the Chamoli region of Uttarakhand. Their husbands — in the age cohort of 25–35 years — were swept away during the floods in the Chamoli disaster. The men had been working at the power plant at Chamoli operated by the National Thermal Power Corporations (NTPC).

Belonging to BPL families, the three women have been receiving grains under NFSA entitlements. But they are finding it difficult to meet their needs from their 5kg per person allotment. They are desperate to find jobs that could help generate some regular cash flow.

Exploring options for a job has been a trying saga for Hemanti. Even though she is a Class 10 pass, she was willing to work under MGNREGS. Despite repeated visits to the Panchayat and the Block Programme Manager for the scheme, she has returned empty handed. They tell her there is no relevant work for her. Incidentally, the long list of 260 types of permissible works under MGNREGS does not mention 'soft work' that could be given to job seekers who may not be fit for heavy earth work or may be nursing mothers.

Rinki, who is a Class 12 pass and a certified Data Entry Operator (by CL Edutech), has also failed to find employment.

Papers for all three women were submitted to the NTPC (in June 2022) for seeking a job on compassionate grounds (with the Patratu Thermal Power Unit). But they have not yet heard back from the institution.

institutions, labour markets and probable employers. The three stakeholders additionally can play an important role in developing apprenticeships as a vehicle for skilling the informal labour force and in developing market-linked work opportunities.

Without a safety net or support, and often far from families, people working in informal jobs are particularly exposed to mental stress and depression. The latest report of the National Crime Records Bureau (September 2022) shows that one in four of the recorded 164,033 suicide cases during 2021 was a daily wage earner. The

graph of daily wagers taking their own lives has steadily risen in the past few years — from 15,735 in 2014 to 37,666 in 2020 and 42,004 in 2021. This shocking trend sadly underscores the grim fact that informal workers have been virtually left to fend for themselves.

Table 1 summarises issues faced by communities exposed to climate impacts and their problems at different stages of mobility during distress migration. This is based on the case study assessment and secondary review presented in section 3.

Table 1. Issues and consequences of migration

ISSUES	CONSEQUENCES ACROSS STAGES OF MIGRATION		
	BEFORE	DURING	AFTER
<p>Rainfed agriculture</p> <p>Shifting and erratic rainfall with limited irrigation destroying crops</p> <p>High-intensity rainfall and long dry spells destroying crops and eroding land and reducing soil fertility</p> <p>Frequent cyclones and associated flooding in coastal areas causing salination of agricultural land</p> <p>Reducing forest cover impacting livelihoods based on non-timber forest products</p> <p>Drinking water scarcity and food insecurity</p> <p>Loss and damage of lives, livelihoods, homes and assets</p>	<p>Reduced demand for agricultural labour or other non-farm sectors due to climate change impacts.</p> <p>Forest-dependent livelihoods for tribal population are constricted.</p> <p>Government job guarantee programme inefficient and inadequate — limited access to MGNREGS job cards, no work even for those with job cards.</p> <p>Access to food subsidy entitlements constrained by ability to navigate through administrative and operational procedures.</p> <p>Limited choices for livelihoods leads to distress migration (seasonal/circular) to urban/construction centres to support family.</p> <p>Male-dominated migration but families also migrate (lower proportion). Even older men (approaching 60 years) likely to undertake distress migration.</p> <p>Labour contractors engage labour mates in source areas — for a ready supply of labour.</p>	<p>Unnoticed, unreported, and undocumented migration.</p> <p>Identity cards (eg Aadhaar, mobile SIM cards) confiscated by intermediaries.</p> <p>Limited possession of smart phones to store identity details and access information.</p> <p>Safety along the migration routes jeopardised without support network and absence of social protection.</p> <p>Men, young women, and girls vulnerable to trafficking and/or forced and exploitative labour.</p> <p>Choice of destination — function of single member migrating or family migration.</p> <p>Support for shelter or employment search while en route or at destination dependent on individual network or intermediaries.</p> <p>No insurance for the travel.</p>	<p>Migrants end up working in informal sectors — young women find work as domestic help and men work in industry, construction or mining sectors.</p> <p>Both men and women are vulnerable to physical and verbal abuse.</p> <p>No safety equipment and often engaged in hazardous work, which increases likelihood of accidents. Many deaths are reported, but in the absence of insurance there is no compensation from employers or intermediaries.</p> <p>Lack of comprehensive portability of social protection programmes at destination to provide support for basic needs like shelter, health, food.</p> <p>Limited ownership of smart phones — challenge of managing multiple cards (PDS, Ayushman Bharat, Aadhar, Labour cards).</p> <p>No guarantee of job and decent worksite facilities in the urban sector (unlike MGNREGS job guarantee in native villages).</p>

ISSUES	CONSEQUENCES ACROSS STAGES OF MIGRATION		
	BEFORE	DURING	AFTER
	<p>Migration facilitated by intermediaries and labour mates without any formal registration. Aspiring migrants have low bargaining power for wage negotiations, employer’s contribution to social security, issuance of any offer letter.</p> <p>Limited awareness about government platforms (as in Jharkhand, Chhattisgarh, Madhya Pradeesh, Rajasthan) supporting safe migration. Even those aware perceive it as involving high transaction costs by migrants due to corruption.</p>		<p>Families split across two locations unable to easily access entitlements for food subsidies (under PDS) that offer portability — technological challenges of databases not in sync with states, local ration shop dealers prefer to distribute to local residents rather than migrants, mismatch in the entitlement baskets in the destination states.</p> <p>Limited penetration of intermediaries (workers associations/trade unions) to espouse the cause of the workers — such as no paid leave or medical care; high opportunity costs for returning to source (for short periods).</p> <p>Lack of association/ union of informal workers to create collective pressure for improvement in worksite facilities and adherence to workforce regulations.</p> <p>Lack of certified skills — lower wages for same work compared to those possessing certified skills.</p> <p>No efforts by the contractor or principal employers to support skills improvement for workers while on the job.</p>

4

Recommendations

This section provides recommendations for policymakers on how to strengthen social protection and labour market regulations and better align them. Ultimately, they should support communities forced to migrate due to climate impacts, as well as those left behind. The recommendations have been classified to support migrants and their families during the three stages of mobility: before, during and after migration.

Before migration

Pre-emptive measures should ensure distress migration and displacement are avoided, but when people choose migration they should be supported.

The community often views migration as a last-resort option to survive and sustain their families. But there are many risks associated with such mobility that create additional vulnerabilities for migrants. When people are forced into distress migration and displacement, the risk of modern slavery and trafficking is shown to increase. Migrants have low bargaining power in the destination job market and lack information and support networks. Policymakers need to consider the following in responding to this issue:

Setting up a comprehensive social protection system to address climate risks. Poor households, when hit by a disaster, often cope by reducing essential food consumption, healthcare and education investments, and by selling or depleting productive assets. All this ultimately pushes them to consider migration to support their families. Such distress migration should be avoided, and the capacity of the community enhanced to cope and recover from climate risks. To that end, social protection programmes need to complement each other and offer vulnerable communities access to a range of services, such as education, health, nutrition, skill enhancement, and so on. This needs to be done with the following considerations:

- **Special focus on marginalised groups:** social protection programmes need to factor in the diverse needs of women and men, as well as more vulnerable groups like single women, elderly people, children, disabled people. Eligibility for social assistance programmes should be underpinned by a universal database that also includes exposure to climate or natural hazards (along with socioeconomic vulnerability). This would allow prioritisation of targeting criteria. In this way, individuals exposed to high climate risks could typically get access to all resilience initiatives through a single registry. This represents an opportunity to enhance the effectiveness and complementarity between different social protection programmes.
- **A rights-based framework and decentralised implementation architecture:** the design features of national-level social protection programmes could include a rights-based social protection system and a decentralised implementation architecture. Rights-based social protection systems (such as rights-based access to decent work, food security, shelter, and so on) provide assurance of a basic safety net in times of crisis. Well-functioning decentralised national social protection programmes distribute benefits more effectively, particularly in times of crisis.
- **Robust management structures:** many countries have a plethora of small social protection programmes managed by a range of ministries with limited coordination. An overhauling of management structures is necessary to establish a comprehensive social protection system with cost-effective and efficient delivery. This overhauling could involve: (i) development of nuanced approaches to delivery mechanisms to ensure immediate relief, (ii) revitalised social protection programmes to prevent communities from slipping back into poverty after a crisis, and (iii) strengthening progress towards universal social protection.

Integrating shock-responsive mechanisms within social protection instruments. Public works-based social protection programmes are particularly suitable for addressing climate vulnerability in places that depend largely on natural resource-based livelihoods like agriculture, fishery and forestry. In the event of a climatic shock, or an economic downturn from a pandemic like COVID-19, public works programmes can provide assured jobs at the local level. In so doing, they act as a productive safety net by creating assets for long-term resilience. For example, during the 2011 drought in the Horn of Africa, the Ethiopian Productive Safety Net Programme was able to absorb an additional 3.1 million people through public works-based employment. In so doing, it effectively warded off a humanitarian crisis. IIED's research shows that MGNREGS in India is already playing a significant role in building resilience to climate risks among the poorest households. Of the 651 respondents surveyed across Andhra Pradesh, Jharkhand, Odisha and Sikkim, 64% reported a change in their livelihood capital to absorb, adapt or transform for addressing the impacts of climate change. IIED's findings indicate that the level of climate exposure and the nature of livelihood capital influence the type of resilience outcomes that households can achieve. By providing guaranteed wages and creating public natural resource management infrastructure, MGNREGS helps households accumulate the natural and financial capital they need to maintain consumption when exposed to infrequent and low- to medium-intensity climate hazards. But for households to adapt and transform their livelihoods in response to high-intensity climate shocks, programmes like MGNREGS will need to integrate climate risk management strategies into their design. The integration should ensure the programme is delivering shock-responsive wages, creating climate-resilient infrastructure and strengthening institutions' use of climate information.

Develop robust information systems and use technology to improve risk responsiveness.

The effectiveness of social protection programmes depends on robust climate information systems. It also depends on the capacity of these programmes to identify and pre-register beneficiaries, and take action before the climate crisis strikes. Such an approach makes sense: building resilience before a crisis hits is more cost effective than responding later with a humanitarian response. Every US\$1 spent on disaster resilience, for example, resulted in reduced humanitarian spending, avoided losses and development gains of US\$2.8 in Ethiopia and US\$2.9 in Kenya (CHASE 2012). Social assistance systems need to be informed through periodically updated projections of climate impacts on different geographies and across temporal scales to implement well-planned, timely and targeted responses. This requires experimentation and innovation in data collection, risk modelling, structuring of

financial mechanisms and market-based instruments, testing of forecasts and triggers, feedback loops and disbursement channels.

Similarly, innovative technologies such as digital payment systems hold significant potential to improve disaster risk finance solutions. The 'JAM trinity' initiative of India is a classic example, among developing countries, of applying technology to advance the social assistance system towards higher efficiency and effectiveness. But such technological interventions need to be matched with approaches that focus on awareness generation, digital literacy and access to ensure 'last mile' connectivity.

Making people ready for migration-related employment. Even with social protection cover, people will want to migrate for better livelihood opportunities or where natural resources-based livelihoods increasingly become unviable because of climate impacts. In Kendrapara, India, for example, flooding and salination are increasingly making agriculture unviable. There are opportunities to engage migrant workers in large construction, infrastructure projects and other economic activities. But many migrants have little or no education and are broadly in the category of unskilled workers, creating a mismatch between supply and demand of labour skills. There is a need to map out-migration hotspots based on layered climate change, and socioeconomic, political and institutional drivers to identify migration pathways of vulnerable communities in times of crisis. This could be complemented with participatory community-level assessments that identify migration patterns (for example, whether people migrate alone or with family), migrants' education and skill level, and where they seek employment in destination sites. Mapping the skill requirement in destination sites and developing a systematic programme for enhancing such skills within vulnerable communities would help prepare migrants for successful employment. Assessment results should be used to prepare workers for migration. Skills training could be accompanied with certification. Lack of certification or documentation for skills is a major reason why many workers, even if they are skilled, are paid unskilled wages. In India, for example, the national biometric Aadhar/UDAI card mentions education level and other demographic details of every individual. This could be updated to record skills and trainings undertaken.

Facilitating decent employment at destination sites. Distress migrants are at a disadvantage in the urban labour market and often exploited. Migrants work in places where labour and workplace safety laws are widely disregarded. They are often forced to overwork, are paid less and are exposed to polluting working conditions without safety equipment. Skill enhancement could be complemented with placement services. These could be offered through mobile application

or village institution or extension services. A mobile app or a village-level registry could list opportunities for workers with different skill types in industry or government construction or infrastructure projects. This would provide migrants with options and a secured job opportunity before leaving their village. This, in turn, would bypass exploitative intermediaries and contractors. Often, they place un-named workers on employment registers, thereby avoiding responsibility for their welfare or safety at worksites. Direct placement would remove this informality in the labour market and ensure workers have access to basic work facilities mandated by law. Migrant workers should also be provided with additional services such as rights awareness, helplines and remittance services. Such support could be facilitated in convergence with other social protection programmes and in partnership with NGOs. This will help diminish migrants' exposure to risks and enhance their capacity to protect themselves from exploitative work conditions.

Relocation planning for communities forced to displace must involve community. Recurring climate impacts and slow-onset events like sea-level rise are making some places uninhabitable. Communities in such places should be moved to safety before they are permanently displaced or exposed to hazards. But such relocation programmes must be co-designed with affected communities to be effective. This will require political will to hold meaningful consultations that are not just a 'tick box' exercise. Leaders must be willing to listen to communities and allow them to participate meaningfully in decision processes and have a sense of ownership. Community engagement will also lead to more viable plans in the long run that are grounded in local realities. Absence of such plans may lead to situations where relocated households are pushed towards displacement again (see Box 11).

This engagement must also include the most marginalised and vulnerable within communities, such as women, youth, disabled people and Indigenous Peoples.

Moving to a new place may also require communities to learn new skills for different livelihood options at destination sites. Good planning and management of demographic transitions will be required. This will need to help diversify livelihoods that are not tied to climate-sensitive sectors and transition towards the next generation of education, skills and jobs in the receiving areas.

There will also be a need to create sense of mutual respect and symbiotic co-existence among people already living in the relocation destination and those moving in.

Local NGOs and civil society organisations (CSOs) are on-the-ground and often play a crucial role in creating

BOX 11. INDIA'S FIRST CLIMATE REFUGEES

Kendrapara in coastal Odisha witnessed one of India's first cases of planned relocation due to slow shoreline changes and coastal erosion. The disappearance of Satabhaya villages (locally known as seven villages) between the 1980s and 1990s due to cyclones and sea-level rise, sparked involuntary displacement and migration. When the last village disappeared in 2011, the state government started to plan relocation. In 2016, 571 families from Satabhaya villages were moved 12km to the new Bagapatia resettlement colony. The families, described by some as India's first 'climate refugees', were compensated with agricultural plots, housing and other facilities. But in 2021, people were migrating from Bagapatia as a livelihood coping strategy. Their farm lands were being either sand cast or salinated, pushing several families to the brink of poverty. Of 4,000 in the villages, 1,700 — both men and women — have migrated to Kerala and Tamil Nadu to work in the plywood (men) and textile (women) industries (Panda 2020; Barik 2021; Yashwant Faleiro 2021).

awareness and supporting community. For example, grassroots women federations and slum dweller networks in the Philippines were able to effectively support the relocation process of communities displaced due to flooding damages. Similarly, local NGOs in rural Bangladesh have often worked as catalysts in communities, playing a significant role in local-level disaster management. Experience shows that communities do not always listen to governments when asked to evacuate during a crisis. Either they do not trust governments or past experiences has undermined their faith in them. In these cases, the government can partner with local leaders (local NGOs, CSOs, women's groups) to mobilise communities effectively around such a plan and create awareness about climate risks.

Supporting communities during migration and displacement

Appropriate policies and investments to enable safe and dignified mobility for people forced to move during a climate crisis.

Migration advisory and helpline service. A toll-free helpline number where migrants can call and seek advice and support will be needed to help people on the move. This helpline service should be able to guide the migrants on 'dos and don'ts' during transit. For example, it could tell them how and where to get registered

before leaving their native community so they can be tracked. It could also offer extended support during crisis, including what to ask contractors or employers before taking up the job at destination. It could identify what facility they can use while en route (for example, temporary shelter/hostels for migrants to stay overnight during their transit). It could also inform them on what they can do if they feel trapped in trafficking or slavery-like conditions or in case of an accident. In addition, it could inform them about all the social protection programmes they can avail at their destination site and how they can get registered. Finally, it could make them aware about their basic rights and entitlements at the job site (for example, safety equipment, working hours, sick leave, and so on) and who they can contact in case those are not met.

For such a helpline to work, there will also be a need for the following:

- A mass awareness campaign to reach out to migrants and their families back home through newspapers, posters, radio, social media and word-of-mouth campaigns publicising the helpline number.
- Ownership and support from within the government at the highest level. The success of a similar helpline (Bharadwaj 2022) in Jharkhand state in India shows that a major reason for its effectiveness was support from Jharkhand's chief minister and chief secretary. They allowed the helpline to use their offices to issue letters, organise coordination meetings with other state governments and get support from counterpart offices in other states where migrants had moved to.
- Institutionalisation of the helpline within the Department of Labour in convergence with welfare schemes for skills training and placement of workers.
- Compassion from the team responding to the calls. People often call in despair; they need to feel they are being heard and will get help. It is important that helpline staff are committed to their work and they don't see it as routine call centre work.

Network of NGOs to support migrants en route and at destination site. Government will need to develop an extended network of NGOs and CSOs to complement the official support system. The migration resource centres typically run by government in India have limited outreach. Migrants often find it difficult to approach them due to formal administrative procedures within such offices. Sometimes they have to lose a day's wages to reach them. In these contexts, CSOs and NGOs can act as extended arms of such resource centres to reach out to migrants through informal channels. NGOs/CSOs near construction sites or industrial hubs can be particularly engaged. They can also ensure that worksites respect workers' rights and entitlements. Such a network will also be useful for state/subnational governments to extend support to

migrants in other states or regions where they do not have jurisdiction. The CSO network can also provide food, immediate counselling and logistical support during transit and at destination site. It can also rescue and bring migrants home, where needed.

After migration

Ensuring that both sending and receiving areas are well-equipped to meet the needs and aspirations of migrants and their families.

Migrants should be taken towards opportunities, not distress. Climate-induced migration and displacement can change population dynamics and distribution in urban centres. Often, displaced communities migrate towards large urban centres where they believe economic opportunities are most likely to exist (for example, capital cities like New Delhi, Mumbai, Dhaka). But these cities have limited carrying capacity, in terms of services and infrastructure. This results in poor housing, lack of health facilities and lack of access to basic services for migrants.

Development planning needs to be proactive in preparing in-migration hotspots for inflows of migrants, and to ensure they are fully prepared to integrate them. For this, livelihood opportunities need to be created in tier 2 and 3 cities or in industrial hubs along with basic infrastructure and facilities to facilitate the movement of migrants in such cities. Migrant feeder areas to such cities could be identified. Skill mapping people in these areas should be done with the skill requirement in these cities or industrial locations in mind. Where needed, skill training and certification should also be facilitated. New possibilities and incentives will enable migrants to make informed decisions on 'where to go' and 'why to go'. Young men and women, for example, can be offered on-the-job skill training and certification in these locations along with insurance cover and decent housing.

Ensure portability of social assistance for migrants. Most social protection programmes do not recognise migrants within their ambit of coverage. Nor do they address the implications for migrants or their families left behind. As a result, when people and families are forced to migrate without any safety net or protection, both migrants and family members left behind face negative consequences.

Social protection programmes have a fundamental flaw: they only provide a safety net to communities as long as they are in their native village and do not acknowledge that climate-induced migration leads to breaking of families. Both migrants and family members left behind must receive entitlements. For example, MGNREGS provides a rights-based job guarantee to all rural households with minimum wage rate, decent working conditions and worksite facilities. But if the same workers have to undergo distress migration or

displacement, they are not covered by these rights. Often, they must stay and work in sub-human conditions for survival, devoid of any rights, benefits or entitlements. Government policy response needs to extend rights and social safety nets by redesigning and strengthening social assistance programmes. They need to do the following:

- Offer portability of entitlements as families/individuals move. This can be ensured by making use of a national database or a registry.
- Provide comprehensive entitlement and facilities that can help families cope and survive under climate-induced distress (or other crises like COVID-19) in both source and destination areas. This would mean extending social protection benefits to family members who have migrated, as well as to those who have stayed back in villages. A pragmatic mix of climate action and convergence with other social protection programmes is needed. In source areas, this would involve supporting and protecting the livelihoods of women. It would also mean strengthening social support systems, such as food grain at subsidised prices, school meals for children and community childcare facilities for single mothers, and providing nutrition for lactating mothers. These support services can enable single women to manage the additional burden of caring for household and livelihood activity. At destination site, government policy response needs to extend rights and social safety nets to migrant workers by ensuring safe and decent work, affordable housing, access to health services and improved water and sanitation facilities. For migrating families, the specific requirements of women and children, including secondary and tertiary impacts, need to be considered.

Ensure coordination between social protection programmes and labour market reform. Most countries have social protection and job market regulations, which if well implemented can support and protect the rights of migrant workers. But in many cases, they are fragmented and unharmonised. Different parts of governments introduce their own programmes at various times. The lack of coordination among them means workers are not able to get comprehensive cover. There is a need for an integrated system where social protection programmes cover basic needs (shelter, food, health) of migrant workers and labour market reforms protect their rights. This will help ensure that migrants are not exploited because of a distress situation. Even if short-term migrants are engaged in short-duration jobs, they should be covered through formal contracts and not treated as invisible workers. They should be registered and provided adequate cover under labour laws and policies. These should ensure job security, health and accident insurance, decent working conditions and basic minimum worksite facilities. Labour

market reforms can also be geared towards promoting equity in access and opportunity for men and women. In addition, they can help migrants enter the labour market through active labour market programmes. These include skill certification, job search assistance and supportive labour market policies, particularly for youth. They would also include social care, with a focus on assisting the elderly, women, disabled people and at-risk children.

Framework for integrating social protection and informal labour markets

Figure 2 depicts a framework on how social protection and informal labour markets can be integrated to support migrants, before, during and after migration.

Before migration

Context

Nodes 1a and 1b indicate that adverse climate impacts at source locations coupled with socioeconomic factors such as low literacy levels and lack of livelihood options act as stressors for marginalised and vulnerable households.

Node 2 points out that marginal and vulnerable households undertake distress migration as a response to stressors. Depending on various factors (for example, access to social protection, livelihood opportunities for other family members at source location, work opportunity at destination location), either a single member or the entire family might decide to migrate. In some cases, the decision to migrate is more 'aspirational' rather than as a response to stressors.

Node 4c suggests that adult members of vulnerable families (who are typically unskilled or possess low to medium levels of skill) may choose to: work as agricultural workers either on their own or others' fields; do odd construction work (including public employment programmes); or work as local artisans and self-employed service providers/vendors.

Checking distress migration at source

Node 7a indicates the potential resilience of a social protection mechanism that: includes a unified database riding on robust technology platform; has scalable and portable schemes; has expanded scope to cater to diverse demographic segments; and is convergent across schemes.

Node 7b shows that facilitating social/economic upliftment for marginalised households through better access to social protection schemes (MGNREGS, ONORC and Ayushman Bharat to name a few) can help partly check distress migration at source.

Nodes 9a, 9b and 9c show that improved access to social protection is possible through the combination of a robust technology platform; the progressive role played by community institutions in capturing the needs of marginalised households; and the incorporation of identified needs into Gram Panchayat Development Plans and Village Poverty Reduction Plans (VPRPs), as well as by providing resource support for projects.

During migration

Safe migration pathways (as indicated in Figure 2) can be provided to those intending to migrate through the introduction of formal elements in the informal labour markets, as well as registration on state/centre portals (such as the e-shram portal or Migration Resource Centres).

After migration

Context

Node 3 indicates that migrants typically land in informal labour markets at destination locations with limited awareness and accessibility to social protection.

Nodes 4a and 4b further describe the vulnerability of migrants engaged in informal activities at the destinations: migrants find work that may be either unskilled or low-medium skilled, which yields relatively lower wages. The employment contracts are essentially through labour contractors, beyond the ambit of labour regulations and with minimal social security, health and pension benefits compared with their formal sector counterparts.

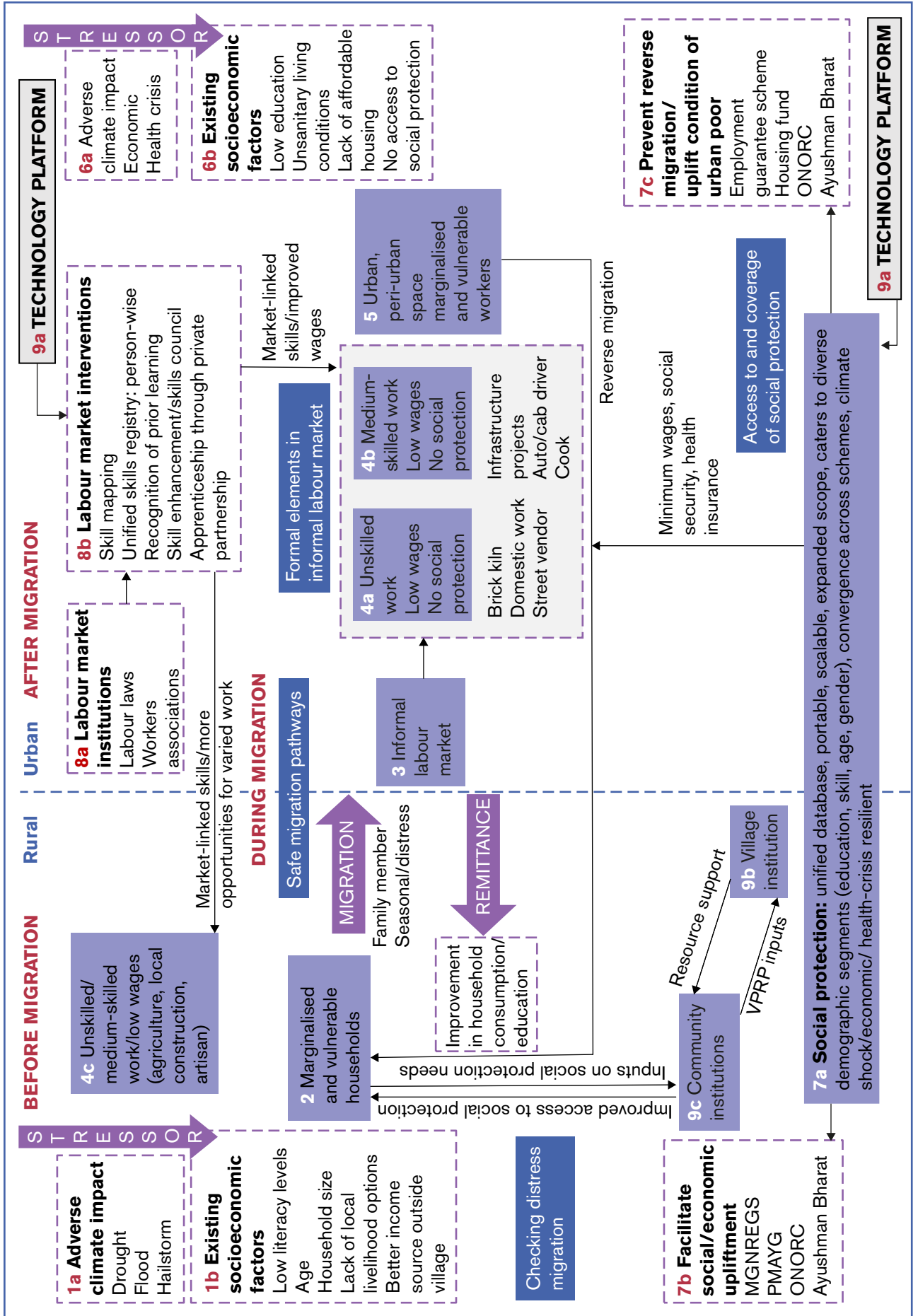
Node 5 further explains the choice of residence among migrants in the destinations that enhances their vulnerability after migration: in urban/peri-urban spaces, migrants settle down in locations that may not have sanitation facilities, low-cost housing and other basic amenities.

Nodes 6a and 6b point out the interplay of vulnerabilities of migrants engaged in the informal employment and, therefore, their exposure to compounded intensity of stressors: any adverse event at destination location (economic/climate induced/ health crisis) acts as a stressor for migrants staying in urban/peri-urban spaces. In the absence of access to social protection and low-cost amenities at destination locations or adequate savings, they are compelled to undertake reverse migration to escape their difficulties.

Checking reverse migration at destination

Nodes 7c, 8a and 8b seek to highlight the potential role of labour market institutions (regulations), labour market interventions (such as skills mappings and skills registry) and provision of social protection and basic services (such as affordable rental housing) in improving the resilience of migrants in the destination locations. Improved access to social protection coverage can help check reverse migration at destination location. This can take place through scalable/portable schemes and expanded coverage. Other strategies include: introduction of formal elements in informal labour markets such as minimum wages, health insurance, skill mapping, developing market-linked skills, social security, and recognition of prior learning. Better wages, improved working conditions, access to low-cost basic amenities and remittances can go a long way towards improving quality of life for both migrants and their families at source locations.

Figure 2. Suggested framework for integrating social protection and informal labour markets



Annex. Overview of methodology

Measuring the association between the status of migration and the drivers of migration – logistic regression analysis

A logistic regression model was developed to explore the social, economic, climate and social protection factors influencing a household’s decision to migrate. This model and its binary outcomes help researchers explore how each explanatory variable affects the probability of the occurrence of events. It also thus helps explore the degree and direction of the relationship between dependent and independent variables in the status of migration at the household level. The logistic regression model is an appropriate statistical tool to determine the influence of independent variables on dependent variables when the dependent variable has only two groups (dichotomous — for example, migrants and non-migrants), and the explanatory variables are continuous, categorical and dummy (Long and Freese 2006).

In the logistic model, the coefficients are compared with the probability of an event occurring or not occurring. The likelihood of an event occurring is bounded between 0 and 1 and exhibits a sigmoid curve conforming to the theory of adoption. The dependent variable becomes the natural logarithm of the odds when a positive choice is made. Hence, if the estimated values of these variables are positive and significant, it infers that households with higher values for these variables are more likely to migrate. If the estimated values are negative and significant, households with higher values of the particular variable are less likely not to migrate.

The dependent variable (Y) indicates whether a household member migrated out. A value of ‘1’ was assigned to households with members that migrated out (the migrants) and ‘0’ was assigned to households where none of the members migrated out (the non-migrants). Determinants of migration were chosen as the independent variables. These variables were carefully selected based on the preliminary data collected from the field through personal interactions and FGDs with community members. The independent variables (X_i) included occurrence of L&D because of climate change events, coverage of the household by MGNREGS, unavailability of adequate food for the household members, caste, monthly income of the household, and so on.

The model is specified as:

$$\ln \left[\frac{P_x}{1-P_x} \right] = \beta_0 + \beta_1 X_{1i} + \dots + \beta_k X_{ki}$$

where the subscript i is the ith observation in the sample, P_x is the probability of an event occurring for an observed set of variables X_i — that is, the probability that the household decides to migrate — and $(1-P_x)$ is the probability of deciding not to migrate. β_0 is the intercept term, and $\beta_1, \beta_2, \dots, \beta_k$ are the coefficients of the independent variables X_1, X_2, \dots, X_k . Results of the regression analysis are presented in the following tables.

Table 1. Results of logistic regression for Kendrapara

VARIABLE	REGRESSION COEFFICIENT (β)	SIG.	EXP(β)
X_1 Availability of MGNREGS job card (Yes=1; No=0)	-1.077	0.005	0.341
X_2 Occurrence of loss and damage (Yes=1; No=0)	2.063	0.000	7.868
X_3 Shortage of food for household members (Yes=1; No=0)	0.678	0.076	1.959
X_4 Monthly income in rupees	-0.415	0.000	0.660
X_5 Caste (SC/ST=1; Others=0)	0.206	0.588	1.229
Constant	5.375	0.000	215.906
Cox and Snell $R^2 = 0.337$; Nagelkerke $R^2 = 0.468$			

Table 2. Results of logistic regression for Palamu

VARIABLE	REGRESSION COEFFICIENT (β)	SIG.	EXP(β)
X ₁ Availability of MGNREGS job card (Yes=1; No=0)	-0.879	0.045	0.415
X ₂ Occurrence of loss and damage (Yes=1; No=0)	1.002	0.000	2.724
X ₃ Shortage of food for household members (Yes=1; No=0)	0.539	0.001	1.714
X ₄ Monthly income in rupees	-1.201	0.000	0.301
X ₅ Caste (SC/ST=1; Others=0)	1.477	0.000	4.380
Constant	1.027	0.200	2.793
Cox and Snell R ² = 0.450; Nagelkerke R ² = 0.642			

Correctness of the prediction of association between the dependent variable and the independent variable was 81% (cut off value 0.5 or 50%).

Correctness of the prediction of association between the dependent variable and the independent variable was 85.7% (cut-off value 0.5 or 50%).

Cox and Snell R² and Nagelkerke R² values explain how much variation in the dependent variable is explained by the model. The values range between 0 and 1. An R² value that is closer to 1 indicates that the model adequately explains the variation in the dependent variable. In the Palamu survey, Cox and Snell R² and Nagelkerke R² values were 0.450 and 0.642, respectively. The two R² values were 0.337 and 0.468, respectively, in the Kendrapara survey.

Binomial logistic regression estimates the probability of an event (decision to migrate) occurring. If the estimated probability of the event occurring is greater than or equal to 0.5, the event is classified as occurring. If the probability is less than 0.5, the event is classified as not occurring. It is very common to use binomial logistic regression to predict whether cases can be correctly classified (that is, predicted) from the independent variables. The effectiveness of the predicted classification against the actual classification is estimated through probability calculation. In both surveys, correctness of the prediction was greater than 50% or 0.5.

Regression coefficient (β) values indicate the direction of the relationship between the independent variable and the dependent variable. A positive sign of the coefficient denotes a positive association between X and Y. An increase in the independent variable's value results in decrease in the value of the dependent variable. Similarly, a negative sign of the coefficient represents a negative association.

Both in Kendrapara and Palamu, the independent variables — occurrence of L&D (X₂), shortage of food for the household members (X₃) and caste (X₅) — were positively associated with the dependent variable (decision to migrate). Availability of MGNREGS job card (X₁) and monthly income were negatively related with the dependent variable in both the surveys.

The Wald test is used to determine statistical significance for each of the independent variables. The statistical significance of the test is found in the 'Sig.' column.

In Palamu, all five independent variables were statistically significant (P<0). In Kendrapara, three variables — availability of MGNREGS job card, occurrence of L&D because of extreme events and monthly income — were statistically significant. The other two variables — shortage of food for household members and caste — were not statistically significant.

Exp(β) indicates odds ratio (OR). An OR is a measure of association between an exposure and an outcome. The OR represents the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure. When a logistic regression is calculated, the regression coefficient (b^1) is the estimated increase in the log odds of the outcome per unit increase in the value of the exposure. In other words, the exponential function of the regression coefficient (e^{b^1}) is the OR associated with a one-unit increase in the exposure (Szumilas 2010).

When the OR is greater than 1 for an independent variable, it describes a positive relationship. The effects of explanatory variables are multiplicative on the odds scale. A unit increase in X₁ multiplies the odds by Exp(β). A unit increase in an independent variable increases the odds of the dependent variable by 100 x [Exp(β)-1].

Interpretation of OR values for Kendrapara:

- Availability of the MGNREGS job card decreases the odds (the probability of success over failure) of migrating by 66%.
- Occurrence of L&D because of drought increases the odds of migrating by 687%.
- Each additional rupee of monthly income decreases the odds of migrating by 34%.

Interpretation of OR values for the survey in Palamu:

- Availability of the MGNREGS job card decreases the odds (the probability of success over failure) of migrating by 59%.
- Occurrence of L&D because of drought increases the odds of migrating by 172%.
- Shortage of food for household members increases the odds of migrating by 71%.
- Each additional rupee of monthly income decreases the odds of migrating by 70%.
- Being SC/ST increases the odds of migrating by 338%.

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Acronyms

BPL	Below poverty line
CSO	Civil society organisation
FCDO	Foreign Commonwealth and Development Office
FGD	Focus group discussion
GDP	Gross domestic product
ICRG	Infrastructure for Climate Resilient Growth
IPCC	Intergovernmental Panel on Climate Change
KII	Key informant interview
L&D	Loss and damage
MCR	Migrant Control Room
NFSA	National Food Security Act
NGO	Nongovernmental organisation
ONORC	One Nation One Ration Card
OR	Odds ratio
PDS	Public Distribution System
PHIA	Partnering Hope into Action
SME	Small- and medium-sized enterprise
VPRP	Village Poverty Reduction Plan

By 2050, water stress, sea-level rise and crop failure from climate change may displace 31–72 million people across sub-Saharan Africa, South Asia and Latin America. Distress migration generates grave socioeconomic consequences — both for migrants and the families they leave behind. Through regression analysis and case studies, this paper explores how climate impacts, lack of social protection and marginalisation push households in two diverse communities in India towards distress migration. It then recommends how to strengthen social protection programmes and informal job market regulations to support communities before, during and after migration.

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