Intersecting Inequalities: Climate-Induced Migration and Its Effects on Women Farmers and Agricultural Workers in India

(With a focus on Maharashtra, Telangana, and Punjab)

Prepared by:
Society for Promoting Participative Ecosystem Management (SOPPECOM)
in collaboration with
Mahila Kisan Adhikar Manch (MAKAAM)

Date: November 2025

Authors:
Reema Sathe

Society for Promoting Participative Ecosystem Management (SOPPECOM)

Foreword

The study Understanding the Nature, Forms and implications of Structural Violence Against Rural Women in the context of Agrarian distress in Maharashtra, Telangana and Punjab (2021-2023) conducted by SOPPECOM and MAKAAM, sought to foreground the systemic and everyday forms of violence embedded in agrarian structures, institutions, and political economy. The study highlighted how landlessness, precarious labour, indebtedness, ecological degradation, and institutional exclusions disproportionately shape women's lives and work in agriculture.

During and after the completion of the study, it became evident that climate change and its gendered impacts on agrarian livelihoods, had not been adequately addressed. Climate variability, extreme weather events, and ecological shifts are increasingly central to agrarian distress, yet their interactions with gender, caste, and class relations remain insufficiently analysed within feminist agrarian research and movements.

In this context, SOPPECOM initiated this desk study to foreground the issue of climate change and the ways in which it intersects with existing structures of inequality to deepen vulnerabilities for women farmers and agricultural workers. The report also critically reviews climate change policies in India, with a specific focus on Maharashtra, Telangana, and Punjab, and to examine the extent to which these policies recognise and address the gendered dimensions of agrarian distress. The study analyses national and state-level climate policies, action plans, and adaptation frameworks to assess how women farmers and agricultural workers are represented, targeted, or rendered invisible within climate governance.

This document is intended not only as a research output but also as a discussion and strategy resource for MAKAAM. We hope it will contribute to collective reflection, movement debates, and advocacy efforts on climate justice from a feminist agrarian perspective, and support MAKAAM's engagement with climate policy, agrarian reform, and women's rights in agriculture.

We thank the author, Reema Sathe for undertaking this study and contributing to this emerging and critical area of feminist agrarian research. We also acknowledge the contributions of MAKAAM members and collaborators whose insights and struggles continue to shape this work.

Seema Kulkarni, Senior Fellow, SOPPECOM

Acknowledgements

The author is thankful to SOPPECOM for providing the opportunity to review the existing work and policies on climate change and gender. This report has benefited from discussions, feedback, and critical engagement with several colleagues and collaborators. The author is especially grateful to **Seema Kulkarni** for her sustained engagement with the research questions and analytical framing, and for her contributions in shaping the direction and refinement of the report at various stages. We also thank **Anupama Uppal, Asha Latha, Rukmini Rao, and Indira N** for sharing insights from their field experiences and for helping ground the analysis in region-specific realities, particularly in relation to agrarian change, gendered labour, and climate impacts across different states.

Contents

Executive Summary

This report examines how climate change, agrarian distress, and gendered labour relations intersect to shape the lives and livelihoods of women farmers and agricultural workers in India. While migration is one visible outcome of these intersecting crises, the analysis takes a broader view—addressing how climate stress, economic precarity, and policy neglect are collectively redefining rural livelihoods and gender relations. The focus is not only on women who migrate but on all women whose work, rights, and wellbeing are being reshaped by the slow and uneven impacts of climate change.

Drawing on case studies from Maharashtra, Telangana, and Punjab, the report finds that slow-onset climate events—including drought, rainfall variability, and groundwater depletion—have intensified livelihood insecurity and agrarian distress. These pressures are transforming patterns of work and migration, particularly among women from smallholder, landless, Dalit, and Adivasi households. State Action Plans on Climate Change (SAPCCs) acknowledge these issues only superficially. Their technocratic focus on productivity and mitigation leaves little room for social vulnerability, labour rights, or gender-responsive adaptation. Migration, when mentioned, is seen as a problem to be contained rather than a process requiring planned support and governance coordination.

The report highlights how women farmers and agricultural workers bear the cumulative burden of these intersecting vulnerabilities. Many manage farms without secure land rights or access to credit, inputs, or schemes, while others migrate into informal, exploitative work under unsafe and unequal conditions. These forms of mobility and immobility are shaped by structural inequalities—gender, caste, class, and location—that continue to be absent from India's climate and rural development frameworks. At the institutional level, both national and state policies still assume static populations and fixed addresses of governance, ignoring the scale and significance of human mobility. Climate-induced migration, especially from slow-onset events, challenges these assumptions—that resilience means immobility and that policy delivery depends on permanence. The absence of disaggregated data and human mobility indicators results in adaptation frameworks that overlook those most affected by climate change.

Key Recommendations

For Government

India's climate policy must integrate human mobility as a legitimate and planned dimension of adaptation, not a failure of development. Future revisions of the NAPCC, SAPCCs, and disaster management frameworks should:

1. Recognise **migration and displacement** as core climate issues, with dedicated strategies and budget allocations.
2. Institutionalise **inter-departmental coordination**—linking climate, labour, rural development, and social welfare ministries—to ensure coherence and accountability in implementation.
3. Advance **decentralised and locally accessible systems** of delivery so that women farmers and agricultural workers can access schemes without bureaucratic barriers.
4. Engage with **global climate frameworks** (UNFCCC, GCF, WIM) to make accountability enforceable through transparent reporting and rights-based climate finance, drawing from the "two-level game" principle of political negotiation—where domestic justice and international commitments must reinforce one another.

5. Embed **gender and intersectionality** within adaptation policy, ensuring that dignity, safety, and equality remain central to resilience-building.
6. Invest in **evidence-based policymaking** using longitudinal and intersectional data that links climate stress with livelihood and migration outcomes.
7. Shift from **reactive relief** to **anticipatory and preventive governance**, with early-warning systems, pre-emptive cash transfers, and social protection plans that reduce crisis dependency.

For Civil Society

Civil-society networks such as MAKAAM and SOPPECOM play a crucial role in bridging ground realities and policy reform. Their focus should be on:

1. **Evidence generation:** producing community-led documentation that demonstrates how climate stress drives livelihood loss and migration, feeding directly into policy and climate finance dialogues.
2. **Policy influence:** translating evidence into actionable inputs for NAPCC, SAPCCs, and local climate planning, positioning gender and human mobility as key dimensions of adaptation.
3. **Women's leadership and governance:** strengthening representation of women farmers and workers in Gram Panchayats, watershed committees, and climate committees through training, rights awareness, and collective organising.
4. **Community support and GBV prevention**: creating safe spaces, crisis-response networks, and awareness campaigns on gender-based violence, linked with state protection systems to ensure accountability and redress.
5. **Cross-sectoral coalitions**: fostering collaboration between labour unions, environmental groups, and social movements to advocate for integrated, gender-just climate governance at both local and national levels.

In conclusion, the report calls for a paradigmatic shift—from viewing migration as a failure to understanding it as a climate reality that demands planning, protection, and equity. Recognising women farmers and agricultural workers—whether mobile or rooted—as rights-holders and agents of resilience is central to creating just, inclusive, and sustainable climate adaptation pathways for India.

1. Introduction

Climate change is fundamentally reshaping patterns of human mobility around the world. Intensifying **droughts, desertification, sea-level rise, and other slow-onset events** are degrading livelihoods for millions, particularly in agriculture-dependent regions. As a result, migration has become a common coping and survival strategy in many developing countries. Globally, policymakers and researchers now recognize climate change as a **driver of internal displacement and migration**, alongside economic and social factors. The World Bank's *Groundswell* report[1], for example, projects that climate impacts could force over 140 million people in sub-Saharan Africa, South Asia, and Latin America to migrate within their countries by 2050 in the absence of climate action. Such projections underscore the urgency for policy frameworks to anticipate and manage climate-induced migration. However, much of the discourse to date has focused on rapid-onset disasters (floods, storms) and international migration. This report centres on the often overlooked domain of **slow-onset climate events** – such as drought, rainfall variability, and heat stress – and their impacts on *agriculture and rural livelihoods*. Slow, cumulative climate stress can be just as devastating as a sudden catastrophe: successive droughts can decimate crops, deplete water sources, erode incomes, and ultimately **push farming communities into distress migration**. Unlike a cyclone or flood, these changes are gradual, making the resulting migrations less visible and often considered "voluntary." Yet, as we explore, many are in fact *climate-distress migrations* driven by lack of options.

India is an important case in point. A 2020 report by ActionAid and the Climate Action Network[2] estimated that 14 million Indians were displaced due to climatic and environmental disruptions and projected that over 45 million people may be forced to migrate from their homes by 2050—with nearly 30% of the climate-displaced population in the Global South expected to be in India. The agrarian sector supports nearly half of India's workforce, a large share of whom are smallholders, landless labourers, and women. When monsoons fail or temperatures soar, rural families face crop losses and debt, forcing them to seek work elsewhere.

It is important to bring into focus the unprecedented scale of climate events that India has witnessed in 2025. Until October, the country has experienced extreme rainfall, flash floods, and an unusually high frequency of thunderstorms. While no consolidated academic assessment is yet available, a Newsbytes[3] report estimates that climate-related events this year have caused losses exceeding USD 12 billion, inflicting extensive damage to agricultural land, water resources, and rural livelihoods across several states. The northern Himalayan states—Himachal Pradesh, Uttarakhand, and Sikkim—have faced severe landslides and floods due to their fragile ecology. In western India, Maharashtra's Marathwada region has faced one of the worst climate shocks in recent memory. Traditionally drought-prone, the region received over 150% of expected rainfall in August and September 2025, leading to flash floods across 451 of 481 revenue circles. Official reports note that 86 lives were lost and over 11,500 persons displaced, with more than 7 million hectares (approximately 40–50% of the state's agriculture) affected during the kharif season[4].

Farmers are calling for this disaster to be declared a "wet drought" [5] for the region, similar to the declaration in 2022 when heavy rains impacted agriculture across Maharashtra. Seasonal migration from drought-prone areas has long been a coping mechanism, and Marathwada particularly sees tens of thousands of farmers migrate annually to sugarcane-growing districts as harvest labourers. This year, however, farmers have lost their standing kharif crops, and rabi sowing has been delayed

due to heavy silt deposits from flooding. Landless and women farmers have been among the worst affected, viewing migration as their only viable option to recover lost income[5]. These movements are often portrayed as economic migrations, but this study instead frames them as climate-induced distress migration, examining how gender influences both the causes and consequences of mobility in the context of climate stress.

Women constitute a large portion of India's farm workforce yet tend to have **lower asset ownership, more precarious employment, and heavier unpaid care responsibilities** than men. These inequalities mean that when climate stress strikes, women are often hit "first and worst." If a household migrates for work, women may face heightened vulnerabilities at every stage: whether migrating with family, left behind, or as independent migrants themselves. Preliminary evidence from grassroots organizations (like MAKAAM[6]) suggests that migrating women and girls encounter issues such as early marriage, loss of education, poor health care, and exploitation, detailed later in this report. Recognising these gender-differentiated experiences is critical for designing just climate adaptation policies.

While migration is a critical lens for understanding how climate change reshapes livelihoods, this report is not limited to studying migration alone. Its scope encompasses the entire spectrum of women farmers and agricultural workers situated across different agrarian roles and relations—those who migrate seasonally, as well as those who remain in villages facing declining productivity, water scarcity, and economic distress. Migration is thus viewed as one of several strategies through which women negotiate uncertainty and survival—choices shaped as much by necessity as by resilience within fragile agrarian systems.

By considering this full spectrum, the report seeks to identify policy gaps and interventions needed at both ends of the migration cycle: to strengthen resilience and livelihood security for those who stay, and to ensure safe, dignified, and fairly compensated work for those who move. Understanding these interlinked realities allows for a more comprehensive approach to climate adaptation—one that recognises women's agency, addresses structural inequalities, and builds resilience across the continuum of rural mobility and agrarian life. However, women agricultural workers—especially landless labourers and marginal farmers—form the primary focus of this analysis.

Research Questions: To investigate these issues, this report addresses the following key questions:

- *How is climate-induced migration currently framed in global discourse and in India's policy landscape?* Which international frameworks and national policies acknowledge (or overlook) the link between climate change, agriculture, and human mobility?
- *Do India's national and subnational climate strategies – including the NAPCC, State Action Plans, and relevant missions – incorporate provisions for migration due to slow-onset climate events?* Or are these migrations dealt with, if at all, in siloed development and disaster plans?
- *What evidence exists of climate stress driving migration among rural agricultural communities, and how are these patterns gendered?* In particular, what are the impacts on women agricultural workers (and intersecting groups such as lower-caste and landless women), in terms of livelihoods, health, and social wellbeing?
- *What are the gaps in current policies and institutions in addressing climate-induced migration in agriculture, and what are the implications for climate justice?* How can adaptation planning become more responsive to the needs of migrant women and other vulnerable groups?

By exploring these questions, the report aims to illuminate the intersectional vulnerabilities at play when climate change, gender inequality, and agrarian distress collide. The ultimate goal is to inform policy and practice – suggesting ways that climate adaptation and rural development frameworks can integrate mobility and gender equity, rather than treating migration as a blind spot. The next section lays out the conceptual lens for this analysis, defining key terms and frameworks used throughout the report.

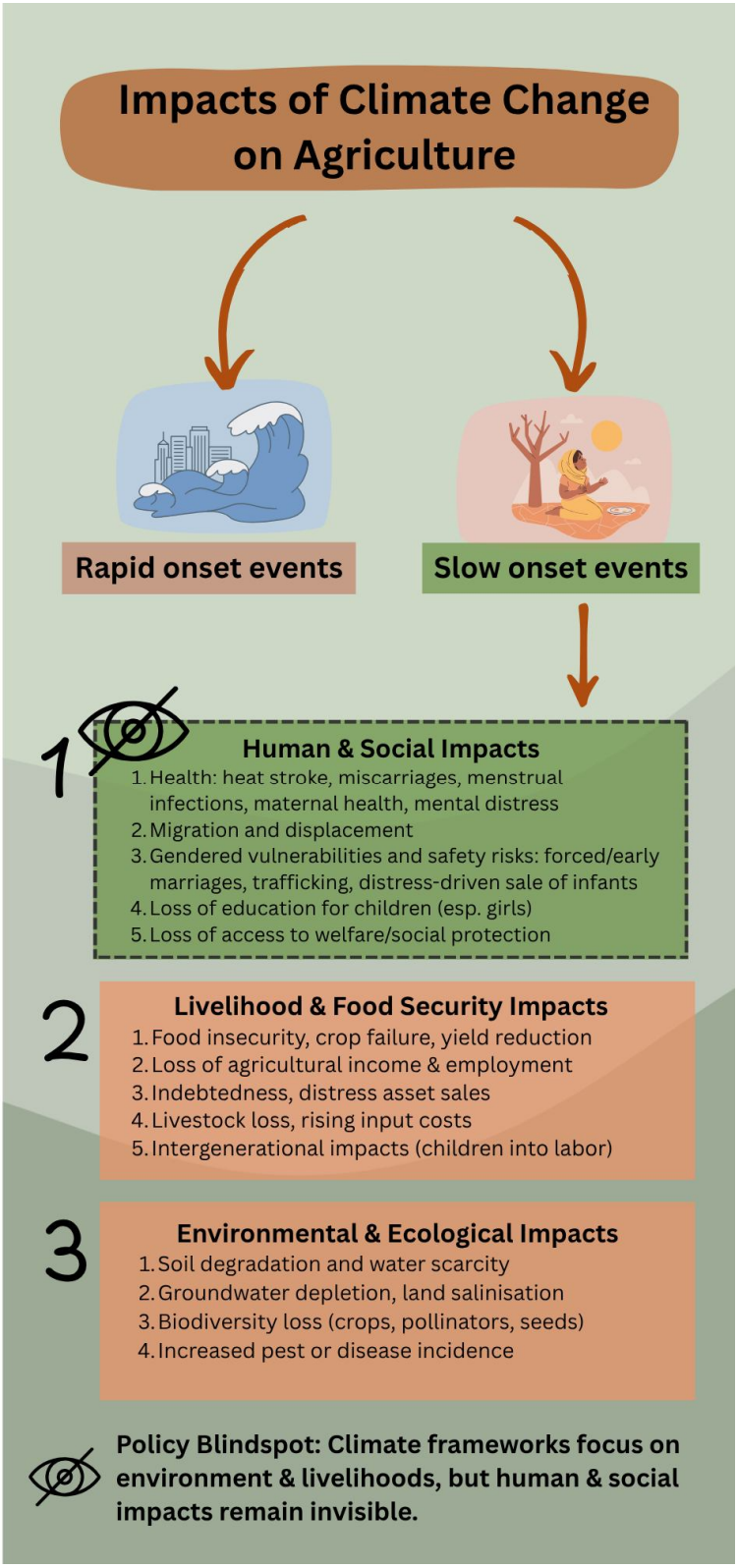
2. Conceptual Framework

Climate Stress and Human Mobility

We distinguish between rapid-onset climate events (e.g. cyclones, flash floods) and slow-onset events (e.g. drought, gradual temperature rise, desertification). Rapid-onset disasters tend to cause immediate displacement and humanitarian crises. In contrast, slow-onset changes unfold over months or years, often leading to what appears as "voluntary" migration – for instance, seasonal labour migration after a crop failure. In reality, the line between adaptation and distress in such migration is often blurred. Migration can be an adaptive strategy when it is planned, with migrants accessing better opportunities or diversifying incomes safely. But when migration is essentially a last resort for survival – taken up due to livelihood collapse, with few supports at the destination – it becomes distress migration. In this report, climate-induced migration refers broadly to any human

mobility where climate change (including variability) is a significant driver. This falls under the wider umbrella of "human mobility" in climate discussions, which encompasses displacement, migration, and planned relocation.

Figure 1. illustrates how climate change impacts agriculture through rapid onset events (like floods and cyclones) and slow onset events (like droughts and groundwater depletion). While disaster risk management frameworks often address rapid shocks, slow onset crises remain neglected in policy planning. The cascading impacts are grouped into three domains: Human & Social impacts, Livelihood & Food Security impacts and Environmental & Ecological impacts. Despite their severity, **human and social impacts** remain invisible in climate policies, which continue to privilege environment and livelihoods. This blind spot underscores the urgency for frameworks that place women, children, and vulnerable groups at the centre of adaptation strategies.



Adaptive vs. Distress Migration

If climate-related migration outcomes for rural communities are placed on a spectrum, one end would represent planned seasonal migration, where—with adequate support—it can serve as an adaptation strategy. For example, a farming family might diversify income by working elsewhere during a dry season and return home with earnings that enhance resilience. At the other extreme lies distress migration, which occurs when climate impacts (such as multi-year drought) leave families with no choice but to migrate under duress—often in precarious conditions that deepen vulnerability. In practice, many cases fall between these poles. For instance, a seasonal sugarcane harvesting job may be nominally voluntary, but if it involves exploitative labour with no viable alternatives, it leans toward distress. Terms such as "voluntary-but-vulnerable" help describe these grey-zone migrations, while "trapped populations" refers to those unable to migrate despite worsening conditions. The concept of loss and damage is also relevant: when people are forced to migrate without support—losing homes, health,

or dignity in the process—it constitutes a form of non-economic loss7 (Bharadwaj, 2024) often excluded from standard adaptation cost–benefit analyses.

Gendered Vulnerabilities

A core premise of this research is that climate-induced migration is not gender-neutral. Gender norms and inequalities shape who migrates, why, and with what consequences. We adopt an intersectional lens, recognising that gender intersects with caste, class, age, ethnicity, and other identities to influence vulnerability.

Land ownership is a key factor: households or individuals with secure land and assets may be able to leverage migration positively, whereas land-poor, lower-caste, or historically marginalised women often migrate under highly exploitative arrangements. According to the *Agricultural Census 2015–16*, only about **14.6% of operational landholdings in India are owned by women**[8], and in most cases these are small holdings (under 0.5 ha) rather than larger, productive farms. A review using *NFHS* and *AIDIS 2019* data suggests that women's sole ownership may, in fact, be closer to **5–10% of total landowners**[9] [10] in many states. These figures underline how limited access to land and assets constrains women farmers' bargaining power and heightens their vulnerability under climate stress.

Social norms in many agrarian communities dictate that men migrate first for non-farm work, while women either stay behind or migrate later — often as dependents or as part of family units. When men migrate and women are left behind, they face increased workloads, labour shortages, and growing insecurity. For those left behind when male members of agricultural households migrate, the situation is even more precarious: women are often unable to access agricultural policies and schemes because they are not officially recognised as landowners or patta-holders. Conversely, when whole families migrate or when women migrate independently for work, they are more likely to enter low-paid, informal jobs that lack basic protections. This framework thus views these gendered patterns as part of the **differentiated impacts of climate change** on livelihoods and mobility.

In this report, we draw on **internationally recognised terminology** from UN frameworks on climate change and human mobility — including those developed under the *UNFCCC*, *UN Women*, and the *Warsaw International Mechanism on Loss and Damage*[11]. These frameworks offer a shared language to describe how climate change drives movement and shapes vulnerability. While terms such as *migration*, *displacement*, and *human mobility* may overlap, we use them here in line with global usage, to situate our analysis of **women farmers and agricultural workers** within India's agrarian context.

Key terms used in this report:

- **Climate-induced migration** – internal or cross-border movement where climate change is a significant push factor (often intertwined with economic drivers). In this report, the focus is on internal, rural-to-rural or rural-to-urban migration prompted by climate stress.
- **Distress migration** – migration undertaken to escape untenable conditions (such as drought, debt, or disaster) rather than to seek opportunity. Distress migrants have minimal choice and often face severe hardship during and after moving.
- **Adaptive (or voluntary) migration** – migration undertaken with some degree of planning or choice, often as a livelihood strategy to build resilience (e.g., seasonal migration). Even "voluntary" migrants may remain vulnerable, but adaptive migration implies a measure of agency and potential benefit.

- **Human mobility** – an overarching term in climate policy that encompasses displacement (typically forced, short-term), migration (usually voluntary or longer-term relocation), and planned relocation (organised movement of communities).
- **Gendered impacts/vulnerabilities** – differences in how women, men, and gender minorities experience climate change and migration due to social roles, unequal power relations, and structural inequalities.

Our conceptual approach situates the **climate-induced migration of women farmers and agricultural workers** along the *adaptation–distress spectrum*, but this report focuses specifically on the **distress migration** end. We are interested in the conditions under which migration becomes a sign of deepening vulnerability rather than adaptive resilience. Institutional support plays a critical role: when governments extend social protection, mobility can help households cope with climate stress. In the absence of such support, migration becomes destructive — resulting in loss, damage, and increased precarity. As the *Warsaw International Mechanism on Loss and Damage* notes, climate change can lead to displacement and migration that exceed communities' adaptive capacity. Whether migration functions as adaptation or harm is thus shaped by the policy environment itself.

In summary, this conceptual framing highlights:

1. The **continuum from adaptive to distress migration under climate stress**, and our focus on the latter;
2. The **intersecting inequalities** (gender, caste, landholding) that shape migration experiences; and
3. The role of **policy support versus neglect** in determining whether migration mitigates or compounds vulnerability.

With these concepts in mind, the next section reviews the existing discourse and policy frameworks — from global to local — to examine how, and to what extent, they address the gendered dimensions of climate-induced migration.

3. Global and Regional Discourse on Climate Migration

Over the past decade, climate change and human mobility have gained prominence on the global policy agenda. Several international frameworks now recognise that climate impacts can drive migration and displacement. However, these frameworks remain largely declarative rather than enforceable, offering limited legal or financial obligations for governments to act. Importantly, the gender dimensions of climate-related migration continue to receive only marginal attention, often mentioned in principle but rarely translated into concrete, gender-responsive measures.

United Nations Frameworks

Under the UN climate convention (UNFCCC), climate-related mobility was first formally recognized in the *Cancun Adaptation Framework (2010)*[i]. Paragraph 14(f) of the Cancun Agreements[12] invites

[i] UNFCCC (2010) – *Cancun Adaptation Framework*: Established adaptation as a formal component of global climate policy; Paragraph 14(f) was the first to explicitly acknowledge climate-induced displacement and migration as issues requiring coordinated policy action.

Parties to undertake "measures to enhance understanding, coordination and cooperation with regard to **climate change induced displacement, migration and planned relocation**, at national, regional and international levels". This established migration as a legitimate subject of climate adaptation policy. Subsequently, the *Warsaw International Mechanism for Loss and Damage (WIM)*[ii], created in 2013, set up a task force on displacement, acknowledging human mobility as a form of loss and damage associated with climate change. However, these UNFCCC initiatives largely frame migration in general terms; they do not explicitly address gender or sector-specific impacts. For example, the WIM's work on displacement recognises "differentiated impacts" on vulnerable groups but stops short of detailing gender-responsive measures.

Outside the UNFCCC, other global agreements also touch on climate migration. The *Sendai Framework for Disaster Risk Reduction (2015)*[iii] notes the importance of addressing disaster displacement risk and calls for "gender-responsive" approaches to DRR. While Sendai[13] emphasises women's role in resilience-building, it focuses on sudden disasters; it does not specifically mention slow-onset climate migration from agriculture. The *Global Compact for Safe, Orderly and Regular Migration (GCM, 2018*[iv]*)*, a non-binding UN agreement, explicitly includes **environmental and climate factors as drivers of migration**. Its Objective 2 commits to "minimize the adverse drivers… that compel people to leave their country of origin, including natural disasters [and] the adverse effects of climate change," and urges integration of migration into climate adaptation strategies. The GCM[14] also calls for **gender-responsive migration policies** and protection of migrant rights. This global compact thus provides a mandate, at least in principle, for countries to mainstream climate migration into national plans – though again, it does not single out agricultural communities or gender-specific interventions.

Scientific Assessments

The Intergovernmental Panel on Climate Change (IPCC) has increasingly addressed human mobility. The latest IPCC Assessment Report (AR6, 2022)[15] notes with high confidence that climate change contributes to migration and displacement, particularly in agricultural regions where livelihoods are climate-sensitive. For instance, Chapter 7 of the Working Group II report links climate impacts to rural livelihood loss and rural-urban migration, citing evidence from South Asia and Africa. Yet, the IPCC also observes that migration outcomes vary – some migrations may reduce vulnerability (adaptive), while others reflect acute distress. Importantly, the IPCC's treatment of climate migration, while comprehensive on biophysical and economic aspects, offers little analysis of gender. It tends to enumerate vulnerable groups (women, children, etc.) as those less able to cope, but detailed gender-disaggregated findings are scarce. This gap in global scientific discourse mirrors a broader trend: climate migration research has not fully engaged with gender and intersectionality, which remain "inadequately woven" into climate responses. A recent review by Rao et al. (2025) concludes that even in climate adaptation initiatives like Climate-Smart Agriculture, robust

[ii] UNFCCC (2013) – *Warsaw International Mechanism for Loss and Damage (WIM)*: Created to address loss and damage associated with climate impacts; later established a *Task Force on Displacement* to develop recommendations on climate-related human mobility.

[iii] UNDRR (2015) – *Sendai Framework for Disaster Risk Reduction*: A global agreement adopted after the 2004–2011 disaster cycles, focusing on reducing disaster risk and enhancing resilience; emphasises gender-responsive and community-led approaches to DRR.

[iv] UN (2018) – *Global Compact for Safe, Orderly and Regular Migration (GCM)*: The first intergovernmental framework on migration in all its dimensions; non-binding but influential in promoting inclusion of environmental and climate drivers in migration governance.

intersectional analysis is lacking[16]. In other words, global knowledge recognises that women and marginalised groups are highly vulnerable to climate impacts, but there is limited evidence on how this plays out in migration contexts and what to do about it.

International Organizations and Initiatives

Several international bodies are actively studying and formulating guidance on climate-related migration. The International Organization for Migration (IOM) and the Platform on Disaster Displacement (PDD, the successor to the Nansen Initiative) have developed tools for integrating human mobility into adaptation planning. The PDD encourages states to consider the **vulnerabilities of women** and to adopt gender-sensitive protection measures when addressing disaster displacement. Likewise, UNHCR (the UN Refugee Agency) and the Internal Displacement Monitoring Centre (IDMC)[v] track displacement figures and highlight the plight of those uprooted by climate events. The World Bank's *Groundswell* reports (2018 and an updated 2021) have been influential in projecting internal climate migration "hotspots" – identifying agriculture-dependent and water-stressed regions (including in India) as prone to out-migration. These reports urge governments to incorporate climate migration into development planning and Nationally Determined Contributions (NDCs) under the Paris Agreement. Notably, a review found that only **27% of countries' initial NDCs mentioned migration or displacement**[17]**, indicating that the majority of nations (India included) did not broach this issue in their primary climate plans.**

At a regional level, South Asian policy forums (SAARC, etc.) have acknowledged climate migration as a shared challenge, though concrete collective actions are few. Comparatively, some countries are moving ahead in their national strategies. Bangladesh, for example, has developed a National Adaptation Plan (2023) that directly addresses internal climate migration – projecting **up to 19.9 million internal climate migrants by 2050**[18] and outlining measures for their protection and resilience (Bangladesh Perspective Plan, 2020). This stands in contrast to India, where climate policy documents have yet to systematically tackle internal migration (as discussed in the next section).

Gender in Global Discourse

It bears emphasizing that the **gendered impacts of climate migration remain under-discussed globally**. Only a handful of studies and reports have explicitly examined how climate-induced migration affects women in particular. The UNFCCC's Gender Action Plan[19] and related efforts focus on women's participation in climate policy and gender-responsive adaptation, but these have not zeroed in on migration. As a result, when countries formulate policies on climate migration (or when funding mechanisms like the new Loss and Damage Fund are operationalised), there is a risk that women's experiences – such as heightened risks of gender-based violence, health issues, or labour exploitation – may be overlooked. A couple of notable exceptions in the literature include an *IIED working paper by Bharadwaj et al.* and an *Oxfam India 2020 report*, both of which shine a light on women agricultural migrant workers (we will draw on these in Section 6). However, these examples are among the very few. In summary, the global discourse provides a general recognition that *"climate change is driving migration and we must manage it"*, but offers little guidance on how

[v] The IDMC operates as part of the Norwegian Refugee Council (NRC), an independent humanitarian organisation headquartered in Geneva, Switzerland.

to do so in a way that is equitable for women or responsive to the lived realities of marginalised populations, particularly women and girls.

Table 1. Recognition of agriculture-based and gendered Migration in Global Frameworks

Document or Framework	Agriculture-based migration mentioned?	Women agricultural workers migration specifically addressed?
UNFCCC (Cancun, Warsaw)	Yes, in broad terms	No
Global Compact for Migration	No sector focus	No
Sendai Framework	No	No
Nansen Initiative	No sector focus	No
IPCC AR6 WGII Ch.7	Yes, broad links	No
Groundswell 2018/2021	Yes, agriculture drives migration	No sector-specific gender analysis

In the following section, we narrow our focus to India – examining how (and whether) the country's national policies reflect the global discourse, and where gaps persist, especially regarding gender and slow-onset climate migration.

4. Indian National Policy Landscape

India's climate policy architecture over the last 15 years has been characterised by high-level commitments to mitigation and adaptation, but a noticeable blind spot on climate-induced migration. Various national missions and plans acknowledge climate impacts on agriculture and livelihoods, *yet none provide institutional mechanisms or programs for populations that migrate in response to those impacts.* Here we review key policies and plans – from the National Action Plan on Climate Change to disaster management and sectoral schemes – highlighting their (limited) treatment of migration and gender.

4.1 National Action Plan on Climate Change (NAPCC), 2008

The National Action Plan on Climate Change (NAPCC), launched in 2008 by the Government of India[20], outlines the country's strategic approach to addressing climate change through eight sector-specific "National Missions." These missions primarily focus on promoting clean energy (solar), energy efficiency, water conservation, sustainable agriculture, habitat resilience, afforestation, and strategic climate knowledge development. The plan is structured around integrating climate objectives into India's development agenda, with an emphasis on technological solutions, resource-use efficiency, and institutional coordination. However, a close reading of the NAPCC reveals that it is overwhelmingly **technocratic** and **mitigation-heavy**—particularly focused on energy, forestry, and

infrastructure—with limited emphasis on social and livelihood-based adaptation strategies. Notably, the document contains no mention of migration, displacement, gender, or women, and offers only cursory references to "vulnerable communities" without elaboration. The National Mission on Sustainable Agriculture discusses climate-resilient farming practices but does not acknowledge the broader socioeconomic impacts of climate variability on landless labourers, tenant farmers, or seasonal migrants. Similarly, the Strategic Knowledge Mission, while focused on capacity-building and climate research, does not include frameworks for understanding human mobility, social protection, or gendered impacts of climate stress. In this sense, the NAPCC reflects a significant gap in India's climate policy landscape: it fails to incorporate the human consequences of slow-onset climate events—such as drought-induced migration or gender-specific vulnerabilities in the rural workforce—into its formal planning and response architecture. This omission has serious implications for equitable adaptation and inclusive climate governance.

The absence of even a single reference to "women" in a foundational policy document like the NAPCC (2008) underscores a profound gender blindness in India's early climate policy architecture. Despite evidence that climate change affects women—especially those in rural, agricultural livelihoods—differently and often more severely, the plan fails to acknowledge or address their specific vulnerabilities or roles in adaptation strategies. This omission highlights the critical need to embed gender-responsive planning and human mobility frameworks into India's evolving climate governance structures.

Since the release of the gender-blind NAPCC in 2008, India has made incremental progress toward recognising gender in disaster risk reduction policies — most notably through the National Disaster Management Plan (2019) and the NDMA's Gender and DRR Guidelines. These frameworks explicitly call for integrating women's leadership, addressing differentiated impacts, and using gender as a cross-cutting theme in disaster governance. However, this progress has not fully permeated the climate policy architecture itself, which remains largely technocratic and sectoral in focus. As a result, critical intersections — such as those between climate stress, migration, and rural women's livelihoods, and potentially increased care work — remain under-addressed in national adaptation planning.

4.2 Disaster Management and Climate Adaptation

On the other hand, India's disaster management apparatus has gradually incorporated *some* aspects of human mobility. The National Disaster Management Authority's plans and guidelines (e.g. National Disaster Management Plan 2016, updated 2019) acknowledge displacement caused by disasters and call for protecting displaced persons[21]. The 2019 National Disaster Management Plan even includes a section on short-term and long-term migration as a possible outcome of disasters, and emphasizes helping affected people rebuild livelihoods locally to discourage distress migration. Additionally, the NDMA released Guidelines on Gender and Disaster Risk Reduction (2019) which recognised that women face heightened risks and needs in disasters. While these are positive steps for rapid disasters, they still largely frame migration in the context of sudden events (floods, cyclones). There is no equivalent policy for slow-onset displacement. Drought is handled under the purview of agriculture and water departments, not disaster response, meaning drought-related migrations fall through the cracks. Government reports like the NITI Aayog's "Drought Management in India" (2018) do mention migration – noting, for instance, large-scale out-migration from Uttar Pradesh's Bundelkhand region and Maharashtra's Marathwada during droughts[22]. But again, these observations have not translated into a dedicated program or funding to address migration as a climate-adaptive or humanitarian issue with a focus on women.

Box 1. NDMP 2019 as a progressive template for Climate Policy and Inclusion

The National Disaster Management Plan (NDMP) 2019 represents one of India's most progressive and socially inclusive national frameworks. It explicitly recognizes the differentiated vulnerabilities of women, Scheduled Castes (SCs), Scheduled Tribes (STs), and gender and sexual minorities in disaster contexts—marking a significant departure from earlier policy approaches that treated affected populations as uniform. NDMP 2019 introduces social inclusion and gender sensitivity as cross-cutting priorities in disaster risk reduction (DRR), and calls for sex-, caste-, and disability-disaggregated data, inclusive shelter planning, gender-responsive health services, and the active participation of women, trans persons, elderly individuals, and persons with disabilities in recovery and governance processes.

What is particularly notable is NDMP's institutional architecture: it assigns specific roles to nodal ministries—including the Ministries of Women and Child Development, Social Justice, and Tribal Affairs—to operationalize inclusion in DRR. This institutionalization of accountability and coordination mechanisms for historically excluded groups is a major advancement in disaster and climate policy design.

However, while NDMP 2019 advances inclusion in many ways, it still remains focused on rapid-onset disasters such as floods and cyclones, with limited engagement on slow-onset climate risks like droughts, desertification, or declining groundwater. It also stops short of addressing climate-induced migration, despite increasing evidence of seasonal and circular migration as a response to agricultural collapse—especially by women workers from rural and marginalized communities.

Why NAPCC Must Learn from NDMP

In contrast, the National Action Plan on Climate Change (NAPCC)—India's core climate policy framework—remains largely technocratic and sectoral, with minimal attention to social vulnerability, gender, or displacement. Unlike NDMP, it offers no institutional accountability mechanisms for tracking the impacts of climate change on mobile, landless, or gender-marginalised populations. Migration and human mobility are not recognised as adaptive strategies, nor are they linked to livelihoods or social protection systems.

The NDMP's emphasis on differentiated vulnerabilities, social inclusion, and institutional coordination presents a compelling model that the NAPCC and its Missions should adopt in future revisions. As climate stress increasingly drives displacement and informal migration, especially among women agricultural workers, adaptation policy must expand beyond infrastructure and efficiency, to include rights, protection, and resilience for those most affected.

4.3 Rural Employment and Social Protection Schemes

India has a robust portfolio of rural development schemes that, if better linked to climate action, could mitigate distress migration. The most prominent is the **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)**, which provides up to 100 days of wage employment to rural households. MGNREGA has been cited by policymakers as a tool that can reduce seasonal migration by offering local work during the agricultural lean season. Indeed, studies show MGNREGA uptake increases in drought years as a fallback source of income. However, MGNREGA is seldom framed explicitly in climate policy as an adaptation measure, and its implementation often falls short in precisely the areas with high out-migration. Strengthening MGNREGA (timely payments, drought-linked expansion of days, crèche facilities for working mothers, etc.) could greatly help retain rural workers, especially women, during climate stress periods. Similarly, schemes under the **National Rural Livelihoods Mission (NRLM)** promote self-help groups and micro-enterprises for women – these could be leveraged to build climate-resilient livelihoods and reduce the need to migrate. **Social protection portability** is another critical gap: migrants often cannot access PDS rations, healthcare, or childcare at destination because entitlements are tied to their home locale. The government's One Nation One Ration Card initiative (which allows ration card use across states) is a step in the right direction, but awareness and coverage are inconsistent among seasonal migrants.

4.4 A comparative analysis of State Action Plans on Climate Change (SAPCCs)

During the 2010s, all Indian states were mandated to develop State Action Plans on Climate Change (SAPCCs) in alignment with the National Action Plan on Climate Change (NAPCC). These plans were intended to localize national climate policy, establish institutional frameworks for climate action at the state level, and operationalize adaptation and mitigation strategies tailored to state-specific vulnerabilities. This section offers a comparative analysis of the SAPCCs of three states—Maharashtra, Punjab, and Telangana. The selection of these states builds on ongoing research by SOPPECOM and MAKAAM, particularly their joint study conducted in October 2024 titled Understanding the Nature, Forms, and Implications of Structural Violence Against Rural Women in the Context of Agrarian Distress. Our analysis draws on that empirical foundation to examine how each state's climate framework addresses (or neglects) the intersection of gender, migration, and agrarian vulnerability. We begin with a detailed review of each state's SAPCC, followed by a comparative discussion highlighting policy gaps and opportunities related to climate-induced migration and the gendered dimensions of vulnerability and resilience.

4.4.1 Maharashtra State Adaptation Action Plan on Climate Change (MSAAPC), 2014

The Maharashtra SAPCC (2014) [23] was among the first wave of state climate action plans in India to align with the National Action Plan on Climate Change (NAPCC). While the document emphasises the vulnerability of the state's economy to climate variability—especially in water-scarce and agriculture-dependent districts—it falls short in identifying or addressing migration as a key adaptation or distress response. This is striking given that Maharashtra, particularly Marathwada and Vidarbha, experiences some of the highest seasonal rural-to-rural migration in India. The 2011 Census records approximately 57.4 million migrants residing in Maharashtra, with 8.2% of the population born outside the state. Maharashtra has one of India's largest populations of agricultural labourers—over 30 million (estimated from PLFS and Census data), accounting for 27.3% of the total working population. A sizable portion of these are landless or marginal farmers, many of whom migrate seasonally—especially for sugarcane harvesting, brick kilns, or construction. District-level studies (e.g., Beed, Osmanabad, Ahmednagar) show widespread rural-rural seasonal migration, largely undocumented.

Despite repeated references to agrarian distress, changing monsoons, and declining productivity, the MSAAPC offers no programmatic pathway for addressing the resultant displacement of landless or marginal workers, nor does it recognise migration as an adaptive strategy. The plan emphasises technological responses such as micro-irrigation and drought-resistant crops, but neglects social dimensions of vulnerability, especially those experienced disproportionately by women agricultural labourers and migrants. Similarly, health adaptation is narrowly conceived in the MSAAPC as a function of climate-sensitive disease surveillance, overlooking critical concerns such as occupational health, reproductive rights, and healthcare access for seasonal migrants—particularly women sugarcane workers, who face high rates of early hysterectomies[24], infections related to poor menstrual hygiene, heavy bleeding, and poor sanitation (SOPPECOM, 2020).

Migration and Gender

The MSAAPCC acknowledges the need to account for diverse socio-economic contexts and references "vulnerable sections" and "women" primarily in relation to awareness campaigns and Self-Help Group (SHG) participation. However, this inclusion remains superficial. While it proposes involving women's SHGs in climate-related awareness and green entrepreneurship, the plan fails to

integrate gender into core vulnerability assessments, sectoral strategies, or institutional frameworks. Critical aspects of women's climate experience—such as land rights, unpaid care work, reproductive health, and workplace harassment—are entirely absent. As a result, the plan overlooks the distinct challenges faced by female-headed or women-intensive households, particularly those engaged in circular migration as a coping strategy.

Equally significant is the complete omission of migration and human mobility from the plan—an omission especially glaring in a state where an estimated 1.5 million people[25] migrate annually for sugarcane harvesting alone (Adhikari & Shree, 2020). While the MSAAPCC does not acknowledge this reality, a primary survey conducted by TERI as part of the MSAAPCC study—across six districts (Hingoli, Nandurbar, Solapur, Buldhana, Gondia, and Thane), covering 1,538 households—reveals that migration is already being used as a distress coping strategy. Yet, the plan appears to give greater weight to asset liquidation (such as the sale of food grains or cattle) over mobility in its adaptation framing.

Table 2. Distress coping mechanism employed by households (MSAAPCC, 2014)

Table 13: Distress coping mechanism employed by households

Distress Coping Mechanism employed	Hingoli	Nandurbar	Solapur	Buldhana	Gondia	Thane
	% of households					
Sell available stock of food grains	93.5	90.7	75.3	88.9	93.4	59.1
Sell cattle	57.1	22	83.9	20.2	30.6	8.2
Migration	21.8	15.1	22.4	8.7	24.4	-

Source: TERI primary survey (For Thane only non- fishing households were taken)

These numbers point the important reality that migration is already being used by vulnerable households as a climate-linked survival strategy, yet it remains absent from the design and planning structure of the MSAAPCC. Seasonal migrants—especially those from Beed, Dharashiv, and Jalna—live in temporary encampments under unsafe and exploitative conditions near sugar factories. Their experiences, documented extensively by civil society reports such as MAKAAM and SOPPECOM's Crushed Hopes, remain invisible to state climate policy. The MSAAPCC offers no targeted responses, social protection mechanisms, or gendered policy measures for informal migrant workers—particularly women engaged in agricultural labour.

Institutional mechanism and key state-level initiatives to operationalise the MSAAPCC, 2014

The MSAAPCC outlines a well-defined implementation structure at the state level, anchored by the State Council on Climate Change, supported by a high-level Steering Committee, and further guided by thematic Task Forces. These entities are coordinated by the Department of Environment, with operational support from a dedicated Climate Change Cell. However, the plan makes limited reference to decentralisation, offering no concrete framework for engaging district, taluka, or gram panchayat (GP) institutions in either climate adaptation planning or gender-responsive implementation. This omission represents a significant administrative, implementation, and

accountability gap—especially in a state like Maharashtra, characterised by deep agro-ecological diversity and entrenched socio-economic inequalities.

Table 3 below presents a snapshot of some key state-level initiatives that support the operationalisation of the MSAAPCC and assesses their relevance through a gender and migration lens. While none of these programs explicitly recognise migration as a climate adaptation strategy, they nonetheless offer operational entry points for future policy innovation. By embedding migration-sensitive and gender-inclusive design into these schemes—particularly at the district and gram panchayat levels—Maharashtra can move toward a more responsive and socially just climate adaptation framework.

Table 3. State Initiatives Supporting MSAAPCC (with gender, caste and migration Lens)

Initiative	GP and District-Level Action	Gender and Caste Inclusivity	Migration Focus
PoCRA (Climate-Resilient Agriculture)	Village-level watershed planning in 15 vulnerable districts	Limited focus on women or tenant farmers	Can reduce out-migration if scaled inclusively
Jalyukt Shivar Abhiyan	Water conservation structures at GP level	No gender or caste lens in implementation	May reduce migration pressure via water security
MYCA	Youth-led adaptation network (statewide)	Gender inclusion not specified	Potential outreach to rural youth migrants
Mumbai Climate Action Plan	Urban climate targets and resilience planning	Urban focus; no caste or gender targeting	Irrelevant to rural female migrants
MEDA Solar Programs	Solar energy access in 18,600+ Gram Panchayats	Indirect benefits for women (gender relevant infrastructure, but no explicit mention)	No direct link to migrants or mobile workers

4.4.2 Telangana State Adaptation Action Plan on Climate Change (TSAAPC), 2014

The TSAPCC (2015)[26] outlines Telangana's vulnerability to climate variability, especially in relation to its reliance on agriculture, low forest cover, and depleting water resources. The plan emphasises sectoral adaptation strategies across water, agriculture, and forest ecosystems. However, despite high rates of seasonal migration in districts like Mahbubnagar, Wanaparthy, and Nalgonda, the plan does not explicitly engage with migration as an outcome of climate distress or adaptation strategy. While it notes the impact of declining rainfall and increasing temperature on livelihoods, there is no mention of circular, rural-rural migration, nor of gender-specific vulnerabilities arising from such patterns. There is also no reference to labour outflows due to crop failure or water insecurity, a significant omission in a state where seasonal migration is a major survival strategy for landless and marginal households.

Migration and Gender

The TSAPCC contains a general reference to vulnerable populations but does not offer a substantive gender analysis. It lacks any discussion of reproductive health, care work, or gender-based vulnerabilities linked to climate-induced migration. Institutional mechanisms for implementation are top-down, with limited decentralised engagement of gram panchayats or local institutions, and with no formal mandates for inclusion of women's groups or civil society.

Table 4 below presents a snapshot of some key state-level initiatives that support the operationalisation of the TSAPCC and assesses their relevance through a gender and migration lens. While these programs do not explicitly recognise migration as a climate-linked coping mechanism, they contain policy hooks that can be leveraged to build more inclusive adaptation pathways. Telangana Ku Haritha Hāram and Mission Bhagiratha are directly policy aligned with the TSPACC. Rythu Samanvaya Samithi and Indira Solar Giri Jal Vikasam Not Explicitly Referenced in TSAPCC, but Thematically Linked.

Table 4. State Initiatives Supporting Telangana SAAPCC (with gender, caste and migration Lens)

Initiative	GP and District-Level Action	Gender and Caste Inclusivity	Migration Focus
Telangana Ku Haritha Hāram	Tree plantation drives at GP level; village awards for survival rates	No explicit gender/caste lens	None; framed solely as environmental program
Mission Bhagiratha	Household piped water supply to GPs and rural areas	Health-focused; gender implicit in water access	Indirect — may reduce migration linked to water scarcity
Rythu Samanvaya Samithi	Multi-tier farmer advisory bodies at GP, Mandal, and district levels	No gender quotas or caste reservation mandates	No mention of migration or landless inclusion
Indira Solar Giri Jal Vikasam	Targeted district program for tribal and upland farmers using solar irrigation	Caste-inclusive; tribal focus	Could help reduce seasonal migration from upland areas, but not framed as such

Implementation and Opportunities

The TSAPCC implementation architecture is unclear and poorly institutionalised. However, Telangana's flagship rural employment and agricultural schemes (e.g. Rythu Bandhu, Palle Pragathi) provide operational entry points for gender- and migration-sensitive integration. In particular, linking rural employment generation and groundwater conservation efforts to climate resilience could enhance both retention and reduce forced migration of vulnerable populations.

4.4.3 Punjab State Action Plan on Climate Change (PSAPCC), 2014 (Updated 2023 Draft)

The Punjab SAPCC[27] identifies the dual challenge of climate change and agrarian stress, particularly in relation to soil degradation, depleting groundwater, and air pollution from paddy cultivation and stubble burning. Its sustainable agriculture mission aims to "usher in a second green revolution" through improved agricultural practices, crop diversification, and technology integration. Approximately 17% of Punjab's SAPCC implementation budget is allocated to this mission, reflecting its centrality in the state's climate strategy. Despite this, the PSAPCC reflects a productivist bias—focusing heavily on crop yields, soil health, water efficiency, and agri-technologies, with little recognition of social vulnerability, gendered labour roles, or migration.

The PSAPCC references rural-to-urban migration only briefly, and primarily through the lens of urban infrastructure stress and public health risks, such as the rise in vector-borne diseases "brought by migrants." Rather than addressing the structural drivers or vulnerabilities of those who migrate, the plan frames **mobility as a burden** to be controlled through rural development schemes. This approach obscures the fact that migration is often a necessity, not a choice, for those facing declining agricultural viability, and reflects a missed opportunity to engage with mobility as a climate adaptation strategy that demands planning, protection, and inclusive support systems. This is especially problematic given that Punjab is agriculturally saturated: 83% of its geographical area is under cultivation, with over 98% of cultivable land irrigated. Despite this, 65% of farmers are in debt, largely due to declining productivity and input cost escalation. Studies cited in the SAPCC project that rising temperatures will significantly reduce rice and wheat yields, potentially pushing more marginal farmers—particularly landless and Dalit workers—into distress and migration.

Migration and Gender

The PSAPCC addresses the role of women in agriculture in only one brief paragraph, offering a superficial account of their contributions to farm labour and allied activities. It acknowledges that women—especially from lower socio-economic backgrounds—are involved in pre-sowing, post-harvest, and supervisory roles, yet does not incorporate this into any programmatic strategy. Census data cited in the PSAPCC record women's workforce participation in agriculture at just 8.7%, a figure that grossly underestimates their actual contribution. Findings from SOPPECOM and MAKAAM (2025) reveal that while a large share of rural women in Punjab are engaged in agriculture, their work remains largely invisible and undervalued. Women are primarily involved in livestock rearing and mixed farming, whereas men dominate crop cultivation[28]. Within agriculture, over 60% of women work as casual or unpaid family labour, with almost none recorded as regular workers or independent farmers. By contrast, men are far more likely to be self-employed or land-owning cultivators. This pattern highlights a deep gendered segmentation of agricultural labour—where women's work sustains rural livelihoods but remains undervalued, informal, and excluded from climate and agrarian policy frameworks.

The PSAPCC suggests women's participation would increase if support structures such as crèches were provided—**reinforcing traditional caregiving roles** rather than recognising women's agency in agricultural production or climate resilience. Crucially, the plan overlooks the intersection of gender, caste, and migration. Dalit women, who form a significant portion of Punjab's agricultural workforce,

remain absent from adaptation planning despite systemic exclusion from land ownership[vi], formal credit, and social protection schemes. Likewise, the internal migration of women, whether as labourers in cotton or vegetable harvesting or as dependents accompanying male kin, is entirely unacknowledged in the plan's design.

Implementation and Opportunities

The PSAPCC is anchored by the Punjab State Council for Climate Change, but there is limited evidence of integration with women's development missions, rural employment programs, or decentralised institutions. Programs like the Punjab Mahila Shakti Kendra and the Punjab State Rural Livelihoods Mission could serve as important entry points for gender-responsive and migration-aware adaptation if formally linked to climate planning. Moreover, to move from a technocratic to socially just adaptation framework, the PSAPCC must recognise human mobility as a legitimate adaptive strategy, and incorporate gender-disaggregated data, caste dynamics, and informal work conditions into its vulnerability assessments and implementation mechanisms.

Table 5 below presents a selection of state-level initiatives in Punjab that relate to the operationalisation of the PSAPCC, assessed through the lens of gender and migration relevance. While the Sustainable Agriculture Mission is directly embedded within the SAPCC framework, other initiatives such as farm mechanisation, energy-from-crop-residue schemes, and Minimum Support Price (MSP) provisioning function in parallel and could serve as complementary adaptation tools. However, none of these initiatives meaningfully address the specific vulnerabilities of landless women workers or mobile populations. By anchoring these schemes within a more inclusive and mobility-aware SAPCC framework, Punjab can better respond to the structural risks faced by its agricultural workforce.

Table 5. State Initiatives Supporting Punjab SAAPCC (with gender, caste and migration Lens)

Initiative	GP and District-Level Action	Gender and Caste Inclusivity	Migration Focus
Sustainable Agriculture Mission	No explicit decentralisation noted	Mentions women in agriculture, but superficially	Mentions rural-urban migration as a stress on cities—not a policy concern
Solar Agriculture Pumps (linked to NSM)	Decentralised renewable energy for farmers	No specific gender targeting	Not linked
MSP for Rice and Wheat	State-wide implementation	Ignores gendered access to land and procurement systems	No link to migration

[vi] In Punjab, Scheduled Castes hold only about 3.6% of farmland and OBCs about 5%, despite Dalits forming nearly one-third of the population. Gender-disaggregated data within these caste groups is not available in the agricultural census. (Agricultural Census 2015–16; IndiaSpend, 2020.)

Farm Mechanisation Programs	Disseminated through agri-extension networks	Often inaccessible to women	Not considered
Agri-Residue to Energy Programs	Encouraged at local levels (crop residue mgmt.)	Technology focused	Not framed in relation to distress migration

Collective Critique of State SAPCCs

Across the three states reviewed, a recurring pattern emerges: climate action plans remain largely technocratic and gender-blind, overlooking the lived realities of women farmers and agricultural workers. Although each SAPCC highlights mitigation and adaptation priorities, their strategies rarely address the intersectional dimensions of vulnerability—particularly the ways gender, caste, landlessness, and livelihood inform people's exposure to climate risks. Instead, state policies often privilege large-scale or symbolic interventions, such as plantation drives or infrastructure-based solutions, which risk reproducing existing inequities.

For instance, in Telangana, the *Telangana Ku Haritha Haram* plantation programme—celebrated as a climate mitigation success—has displaced Adivasi communities and criminalised women cultivators who resisted the takeover of forest lands[29], underscoring how green interventions can deepen social injustice when implemented without tenure safeguards or gender-sensitive planning. Similarly, in Punjab, despite recognising the gender gap in agricultural labour (only 8.7 percent of the formal workforce), the SAPCC fails to acknowledge women's unpaid and invisible work in livestock rearing—an activity highly sensitive to climate variability. Moreover, the shift from cotton to paddy–wheat cropping in response to climatic and pest stress has eroded women's employment opportunities while pushing Dalit and landless households into distress migration. In Maharashtra, flagship programmes such as PoCRA promote climate-resilient agriculture but remain largely focused on capital-intensive technologies, benefiting primarily medium and large land-owning farmers while leaving out smallholders, tenant cultivators, and women agricultural labourers[30].

Taken together, these cases reveal how state climate policies, if not grounded in intersectional and gender-responsive approaches, can exacerbate rather than reduce vulnerabilities. The next generation of SAPCC updates must therefore embed gender-disaggregated data, recognise diverse forms of agricultural and care labour, and include accountability mechanisms to ensure that adaptation and mitigation efforts do not produce new forms of social and economic displacement.

Institutional blind spots and policy gaps in India's Climate policies and frameworks

The subnational gaps as defined in the section above, reflect a broader national policy vacuum. As summarised in Table 6, India's climate governance framework—including the National Action Plan on Climate Change (NAPCC) and its missions—remains technocratic and in-situ oriented, prioritising on-farm resilience while sidelining migration. Migration continues to be treated as a development failure rather than a legitimate adaptation strategy, and is addressed (if at all) through urban infrastructure or labour regulations, rather than climate frameworks.

Table 6. Treatment of climate-induced migration in Indian policy

Policy / Framework	Mentions Climate Migration?	Addresses Women Agricultural Migrants?	Notes
National Action Plan on Climate Change (2008)	No (silent on "migration" or "mobility")	No	Technocratic focus; ignored human displacement.
Nationally Determined Contribution (2015 & 2022)	Indirect (social vulnerability noted, no detail)	No	No explicit mention of migration in climate commitments.
State Action Plans on Climate Change (e.g. Maharashtra, Telangana)	Yes (identifies migration as impact of drought)	No (no gender or caste analysis)	Acknowledges climate stress → migration, but no strategies for migrants.
National Disaster Management Plan (2016/2019)	Yes (disaster displacement addressed)	Limited (women as vulnerable group in disasters)	Focus on rapid disasters; slow-onset drought migration not covered.
National Mission for Sustainable Agriculture (under NAPCC)	No (focus on on-farm adaptation)	No	Climate-resilient agriculture programs don't consider mobility.
National Rural Livelihoods Mission, other rural schemes	Indirect (aim to reduce poverty)	Indirect (women's SHGs supported)	Could reduce pressure to migrate, but not integrated with climate policy.
Labour and Social Protection Laws (e.g. Inter-State Migrant Workmen Act)	Partial (covers migrants in general)	Partial (maternity benefits law exists)	Not climate-linked; poor enforcement for informal women workers

As the table suggests, migration is occasionally mentioned but not operationalised or institutionally anchored in India's climate strategy. There is no dedicated budget, mission, or agency responsible for climate migration. Consequently, communities that are forced to be mobile remain policy orphans – falling between climate adaptation (which assumes they stay put) and urban or labour policies (which often exclude temporary rural migrants). From a gender perspective, the omission is even starker. The NAPCC and climate missions made no reference to gender in the context of migration or displacement. Although India has started integrating gender into disaster management (e.g. the NDMA's gender guidelines) and into some climate projects (like women-focused livelihood programs), the specific hardships of migrant women – such as loss of access to welfare, increased risk of exploitation, and health issues – are not recognised in any climate or agriculture policy. This represents a critical gap for climate justice, as women like the sugarcane cutters of Marathwada

have borne severe costs (including irreversible health consequences) that policy frameworks have neither anticipated nor addressed.

In light of these findings, the next section delves into the ground-level evidence of how climate-induced migration is impacting women. By examining case studies and research (including from SOPPECOM, Oxfam India and IIED), we aim to ground the discussion in lived experiences – reinforcing why an institutional response is so urgently needed.

5. Gendered Dimensions of Climate-Induced Migration

Climate-induced migration in agrarian communities is not just an environmental or economic issue – it is profoundly **gendered**. Women who migrate (or are left behind by migrating family members) experience climate change in ways that differ from men, often exacerbated by existing inequalities in society. In this section, we draw on evidence from grassroots studies, non-profit reports, and academic research to illustrate these gendered dimensions. The case of **women sugarcane cutters in Maharashtra** serves as a recurring example, as it encapsulates many of the challenges faced by women at the intersection of climate, labour, and health.

From Drought to Distress: The Sugarcane Cutter Case

"Women paying the cost of the climate crisis with their wombs." This striking phrase comes from a 2024 IIED report on women sugarcane harvesters in Beed district, Maharashtra. Beed is a drought-prone area in Marathwada; rainfall failures over the past decade have left many farm families destitute. Each year, an estimated 1.5 to 2 million people from such regions migrate to work in the sugar belt of western Maharashtra and Karnataka. Among them are thousands of women – typically landless labourers or small farmers' wives – who take on backbreaking work cutting and loading cane. They do this because agricultural income at home has collapsed due to climate stress (successive droughts from 2014 to 2019 in Marathwada) and there are few alternatives locally. Udmale et al., 2014 states that out of 0.9 million workers registered under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in Beed, only 135,000 workers got jobs[31]. The MGNREGA, 2005, was meant to provide at least 100 days of guaranteed wage employment every year to adult members of every rural household. But only one in four people registered under the scheme get work in Maharashtra, according to data available on the MNREGA website. In Beed, about one in nine workers gets employed[32]. Of the 9.7 lakh people registered under the act in Beed, nearly 1.3 lakh got work in 2018-19 (Priolker, 2019).

The conditions women sugarcane harvesters face are harrowing. Work days begin around 3 AM, as women must fetch water and cook before heading to the fields by daybreak. They then labour for up to 12–18 hours in the fields, cutting and hauling heavy cane bundles, often in extreme heat that can reach 45-46°C. Unlike formal sector jobs, there are no rest breaks, no toilets, no health facilities at worksites. Women endure dehydration, exhaustion, and often continue heavy labour through pregnancy and illness. After work, they still shoulder domestic duties at the makeshift camps (cooking, cleaning, caring for children), while men generally rest – a classic "double burden" that women themselves and observers have noted ("the men get some rest, but the women don't" as one report puts it).

These harsh working and living conditions have severe impacts on women's health. Without access to sanitation, women cannot maintain menstrual hygiene; many use dirty rags leading to infections.

There are accounts of frequent urinary tract infections, reproductive health issues like *leucorrhea* (abnormal discharge) among women and adolescent girls at the camps. Poor menstrual hygiene, combined with physically taxing work, has contributed to a widespread yet shocking phenomenon: **unnecessary hysterectomies**. In villages of Beed, it became almost commonplace for women in their 20s and 30s to have their uterus removed. Why? Contractors impose penalties for taking sick leave – often docking ₹500–1000 (US$6–12) for even a day off. Women with debilitating menstrual pain or complications fear losing desperately needed income, so some have opted for surgery as a "permanent solution" to avoid monthly periods. As one woman explained, other women told her it would relieve her pain so she went through with it. In reality, many of these surgeries were **medically unwarranted** – a manifestation of both exploitation and misinformation. A Maharashtra government survey found over **13,800 women sugarcane cutters (about 16% of those surveyed) had undergone hysterectomies in the prior decade** in just this one region. Most were ages 35–40, though shockingly a significant number were in their 20s. An analysis by IIED confirms these findings: in their sample, **55.7% of migrant women had hysterectomies**, compared to 17% in non-migrating households, and the average age of the surgery was only 34.6 years. Over 31% of those women had the operation between ages 26–30. These statistics underscore the **extreme bodily costs** women are paying in order to adapt (in a perverse way) to climate-induced livelihood loss. And as expected, the hysterectomies did *not* necessarily improve their ability to work – many suffer chronic pain, weakness, and mental health issues afterward.

The sugarcane case illustrates in an extreme form how climate-distress migration can **entrench gender injustices**:

- **Income and Asset Collapse:** Drought causes crop failures, leaving women with no income or savings. Lacking land titles or collateral (since land is usually in men's names), women cannot easily access credit or relief. Many migrant women's families fall into **debt bondage** – borrowing from labour contractors or moneylenders to survive until the migration season. The IIED study found migrant households had on average ₹124,700 total debt (including large sums owed to sugarcane middlemen), versus ₹45,000 for non-migrant homes. This indebtedness ties women to continued cycles of migration under exploitative terms.

- **Informal, Exploitative Labor:** The work available to migrating women is typically informal manual labour with little legal protection. As seen, sugarcane harvesting involves informal contracts through agents ("mukadams"), and payment is often piece-rated per ton of cane cut. Women labourers, paired with their husbands as *jodi* units, **earn below minimum wage** and face arbitrary deductions. No paid maternity leave, no sick leave – pregnant women and new mothers work until childbirth and return often within a week postpartum. This contravenes labour laws like the Maternity Benefit Act, but migrant women in informal work are effectively **invisible to regulators** and thus denied these rights. Gender-based wage disparities and lack of bargaining power leave women economically exploited.

- **Lack of Land and Property Rights:** Many women migrants come from landless or very small landholder families, often from marginalised castes[33] (e.g. Vanjari, Banjara communities form a large segment of cane cutters). Without land or stable property, they have limited fallback options and also less voice in household or community decision-making. Land ownership is linked to social status and access to government schemes; its absence is a key factor making these women **extremely vulnerable to climate shocks**.

- **Health and Bodily Autonomy:** The hysterectomy issue is a stark indicator of how migrant women's health is compromised. It reveals a nexus of poor healthcare access, lack of reproductive rights, and economic desperation. Women felt pressure (social or financial) to remove their womb – effectively sacrificing their reproductive ability and risking long-term health – to keep earning wages. Aside from

this, women face high rates of injury (cuts from machetes, back injuries from lifting 40-kg bundles) and chronic ailments. There is often **no medical support** at worksites; one woman recounted miscarrying in the field with no transport to hospital.

- **Unpaid Care & "Double Shift":** As noted, migrating women carry the double burden of wage work plus all care duties. There are no childcare facilities; mothers often bring infants to the fields or leave young girls to mind siblings, which takes those girls out of school. Adolescent girls in migrant families frequently drop out due to both the need for their labour and safety concerns at home villages when parents are away. Early marriage of girls is common, partly as a protective measure and partly due to the instability of migrant life. Thus, the **next generation's opportunities (education, health) are also compromised**, perpetuating a cycle of marginalisation.

- **Exposure to Gender-Based Violence (GBV):** Migrant women and girls face increased risks of GBV. The isolation of cane-cutting camps, lack of secure housing, and pervasive alcohol abuse among male workers create a dangerous environment[34]. Women have reported verbal, physical, and sexual harassment both at worksites and in the temporary colonies. Power imbalances (contractors wielding control over wages and loans) further silence women from speaking out. These social risks are an often-unseen cost of climate migration – as climate stress uproots communities, the social safety nets and norms that might offer some protection weaken, leaving women more vulnerable to violence.

Box 2. Climate Brides: When girls bear the burden of survival amid climate crisis

In drought-prone districts like Beed, Osmanabad, and Jalna in Maharashtra, the intersection of climate vulnerability, agrarian poverty, and gender inequality is producing a silent crisis: the rise of child marriage among girls from migrant sugarcane-cutting families. These "climate brides" are not anomalies but the outcome of structural pressures that converge around seasonal migration, income insecurity, and deep-rooted patriarchy. This phenomenon has been documented and conceptualised by Reetika Subramaniam, who leads the Climate Brides Project[35] to investigate how climate-induced displacement and agrarian poverty intersect with early marriage and gendered vulnerability (climatebrides.com).

Families migrate for five to six months each year to sugarcane fields, often taking children—especially girls—with them, citing safety concerns about leaving them behind. However, accompanying migration often leads girls to drop out of school permanently. As education is disrupted, girls become more vulnerable to early marriage—a pattern increasingly referred to locally as "gate-cane weddings," which occur just before migration begins. These marriages are often driven by economic incentives: registered married couples (or "koytas") receive advance payments significantly higher—₹1.5 to ₹3 lakh—than individuals.

Survey data from SOPPECOM (2019) found that 69% of women surveyed were married as children, with nearly half married between the ages of 15 and 17, and 20% below the age of 14. In Marathwada, estimates suggest that three out of four gate-cane marriages involve underage girls, and local officials and activists report hundreds of such marriages annually—many of which go unreported or unchallenged. During the pandemic, multiple reports—from the Times of India to the Pulitzer Center—highlighted cases where schooling was never resumed post-lockdown, solidifying a permanent break in girls' education.

The consequences extend far beyond school dropout. These girls, now married and mobile, are at higher risk of early pregnancy, medical misinformation, and in some cases, hysterectomies under coercion or lack of consent. As their lives are restructured around migration and domestic responsibilities, they are effectively erased from both the education system and policy visibility.

Despite the clear link between climate stress, migration, and early marriage, there is no mention of this phenomenon in either national or state climate policies. These girls remain excluded from climate adaptation schemes, education recovery frameworks, and health protections—revealing a critical blind spot in current governance.

The case of climate brides underscores a deeper truth: climate-induced migration is not gender-neutral. For adolescent girls in rural Maharashtra, the cost of survival under climate stress is their childhood, their education, and their bodily autonomy. Without targeted protections, including school reintegration programs, community-based child marriage prevention, and gender-responsive migration policy, these patterns will continue unchecked—normalised in the name of survival.

While the sugarcane-cutting case in Maharashtra is particularly striking, similar gendered migration dynamics are at play across India. In drought-affected regions of Telangana and Andhra Pradesh, women from farming households often migrate seasonally to brick kilns or construction sites, relegated to manual, hazardous work like lifting bricks under extreme heat. Their contributions are routinely undervalued—wage discrimination is common, and health issues like chronic pain and heat stroke remain untreated due to lack of onsite care. In Bundelkhand (Uttar Pradesh and Madhya Pradesh), entire families migrate seasonally due to recurrent drought. Studies by civil society organisations highlight how women—whether migrating or left behind—face escalating burdens. Migrant women find themselves in unprotected, low-paid work; those who stay behind must juggle agricultural labor, caregiving, and navigating systems like irrigation and credit that often exclude them. Caste compounds these vulnerabilities—Dalit and tribal women, in particular, are more likely to migrate and more likely to be exploited. This aligns with academic research on "left-behind women", notably the work of Hans, Rao, Prakash, and Patel (Eds., 2021) who document how women lose access to institutional support, land, and services when men migrate (or leave the household vulnerable), and how traditional safety nets then fail them[36].

Whether they migrate or stay, women shoulder disproportionate social, economic, and health burdens. Migration does not equate to autonomy or opportunity; instead, it often entrenches marginalisation—reinforcing the need for policy frameworks that recognize migration as a legitimate adaptation strategy and address the gendered experiences tied to it.

MAKAAM (Mahila Kisan Adhikaar Manch), a national forum for women farmers, has documented many of these issues through participatory studies in Maharashtra, Telangana, and Punjab. Their findings echo the above: women migrants and women in migrant-sending communities suffer from **early marriages of daughters, disrupted schooling, food insecurity, and lack of access to government services** when they move. MAKAAM reports also highlight the **demands and agency of these women**. For instance, collectives of sugarcane cutters in Maharashtra (supported by MAKAAM) have demanded formal recognition as workers, better housing and sanitation at worksites, and access to welfare schemes like MGNREGA in their home off-season. They call for local employment opportunities (so they would not have to migrate), such as irrigation projects and agro-forestry under NREGA, and support for **agroecological farming** to build resilience on their own lands. These are essentially *adaptation and justice demands* voiced from the ground. Oxfam India's 2020 report *"Human Cost of Sugar"* provides further evidence and frames these issues as human rights concerns.

Intersectional Impacts

It is worth emphasising the intersection of *caste* and *class* with gender in these scenarios. Almost invariably, the women most affected are from marginalised social groups – Scheduled Castes (Dalits), Scheduled Tribes, Other Backward Classes – who have historically faced landlessness and poverty. Climate change acts as a threat multiplier on top of these injustices. For example, in the sugarcane migrant population, Vanjari and Banjara (historically nomadic and disadvantaged communities) are over-represented. They often lack political voice; their issues remain on the periphery of mainstream policy concerns. Similarly, women from these communities face both gender discrimination *and* caste-based exclusion (e.g. difficulty accessing common water sources or relief aid). An intersectional lens thus reveals that the poorest, lower-caste women are bearing disproportionate costs of climate-related migration – whether in physical health, economic exploitation, or social marginalization.

In conclusion, the evidence paints a sobering picture of women paying the price for climate crisis and agrarian distress. Climate change, through slow degradation of livelihoods, is effectively stripping many rural women of their economic security, physical well-being, and in some cases their fundamental rights. Migration – which could be a positive adaptation strategy under better conditions – currently often manifests as another arena of hardship for these women. This underscores the need for intentional interventions to change that reality. The next section will build on this by making the case for why and how institutions should respond: integrating migration into adaptation planning, and ensuring that the rights and needs of migrant women are addressed as part of climate action.

6. Policy and Institutional Recommendations

6.1 Integrating Migration into Climate Policy Frameworks

The findings above highlight a critical gap: while climate-induced migration is unfolding on the ground, it remains virtually unaddressed in institutional frameworks. Migration must be integrated into climate adaptation planning—not as a failure, but as a social reality and an adaptation strategy essential for both resilience and climate justice. Women-centred and gender-just approaches should guide this integration, given the disproportionate burdens women face. Ignoring migration is no longer tenable. Adaptation plans that assume a static population risk maladaptation—benefiting those with resources while leaving out poorer households that are forced to move. Conversely, well-managed migration—supported by skills training, protection, and social security—can reduce risk. The World Bank's Groundswell Report urges countries to integrate climate mobility into National Adaptation Plans (NAPs) and NDCs. For India, this means embedding migration into future NAPCC updates and SAPCC revisions through targeted components on human mobility and gendered vulnerability.

6.2 Current Frameworks Recognize the Issue, but Lack Mechanisms

Global frameworks such as the UNFCCC Cancun Agreements, Warsaw International Mechanism (WIM), and the Global Compact on Migration (GCM) conceptually recognise climate mobility, but lack binding mechanisms. The operationalisation of the Loss and Damage Fund after COP28 offers an opportunity to integrate migration-linked vulnerabilities into funding priorities like social protection measures, such as portable entitlements for migrants, community-based cash transfer systems, or safety nets for women and children left behind.

Bharadwaj 2024 has proposed the C-CIQ framework to assess non-economic losses—including the loss of dignity, physical and mental health, and community cohesion—that disproportionately affect women in climate-vulnerable regions. Migration amplifies such losses, especially among agricultural workers navigating unsafe work, social stigma, and health breakdowns. These losses are often invisible in conventional climate finance frameworks, which prioritise measurable economic damage (e.g. infrastructure, crops). The C-CIQ approach calls for integrating qualitative dimensions of loss into climate finance metrics. This would allow the Loss and Damage Fund to directly support communities experiencing forced migration, not just through compensation but also by funding psychosocial services, legal aid, reproductive health access, and education continuity for displaced children. It reframes climate finance as a tool of justice, not just economic repair.

6.3 Integrating Migration into National and State Plans

A priority for India's forthcoming National Adaptation Plan (NAP) under the UNFCCC should be to **mainstream migration as a climate-adaptation issue**. Other climate-vulnerable countries already do so: Bangladesh's draft NAP 2023–2050 commits to livelihood programmes in migrant-sending areas and tailored urban support, while Senegal's plan links migration to community-based adaptation and reintegration through the International Organization for Migration (IOM).

At the **state level**, revised State Action Plans on Climate Change (SAPCCs) and new climate-budgeting processes offer key entry points. States such as Maharashtra, Telangana, and Punjab—where climate-linked migration is evident—could include a human mobility component in SAPCC updates. High-risk districts like Marathwada (Maharashtra) or Rayalaseema (Andhra Pradesh) should be identified and allocated funds to support both those who remain and those who migrate. Climate budgets can earmark resources for seasonal shelters, portable social protection, and skills training at both source and destination.

At the **national level**, flagship programmes must reflect migration realities. The National Mission on Sustainable Agriculture (NMSA) can fund alternative livelihoods in drought-affected areas; MGNREGA, used as a climate-adaptation tool, can stabilise incomes by expanding guaranteed workdays and prioritising water-conservation projects. The National Rural Livelihoods Mission (NRLM) can target climate-stressed blocks and strengthen women's collectives—turning migration from compulsion into choice.

Finally, India's **disaster-risk architecture** must also account for slow-onset crises such as drought, salinisation, and groundwater loss. The National Disaster Management Plan (NDMP), still focused on rapid-onset events, needs a complementary framework to guide state and district responses to gradual livelihood erosion and migration, aligning with the anticipatory-governance mechanisms outlined later.

6.4 Gender Justice, Labour Protection, and Voice

Women farmers and agricultural workers continue to be excluded from the core of climate and labour policy. Despite their central role in sustaining rural production, structural inequities—landlessness, unequal wages, unsafe working conditions, and lack of social protection—keep them among the most climate-vulnerable groups. Current adaptation and livelihood programmes rarely address how gendered divisions of labour, wage discrimination, and unpaid care responsibilities intensify under climate stress.

Equally critical are issues of **safety, bodily autonomy, and freedom from violence**, which remain invisible in climate policy. Gender-based violence (GBV) and workplace exploitation often increase during periods of economic and climatic distress. Women agricultural workers face heightened risks of harassment, unsafe travel and accommodation, and limited access to grievance redress. For adolescent girls, livelihood insecurity and school dropouts can translate into **early and forced marriages**, reflecting how social and climatic vulnerabilities intersect.

Policies must therefore extend beyond participation targets to guarantee **protection, rights, and agency**. Key actions include:

- Embedding **GBV prevention and redress mechanisms** within adaptation, agriculture, and rural-employment schemes—through safe worksites, grievance committees, and community vigilance networks.
- Expanding **labour rights and wage parity** provisions for women agricultural and informal workers, including minimum-wage enforcement, maternity protection, and occupational health safeguards.
- Ensuring **access to healthcare, reproductive rights, and psychosocial support** as integral to adaptation and resilience programmes.
- Building **leadership pathways for women from marginalised communities** in Panchayats, farmer cooperatives, and climate-planning committees to strengthen representation and decision-making.

A gender-just climate response must treat women farmers and agricultural workers not as secondary beneficiaries but as **rights-holders and agents of resilience**—whose safety, autonomy, and equitable access to resources are central to any meaningful adaptation strategy.

6.5 Building Evidence

Strengthening the **empirical foundation** linking climate stress, migration, and gendered livelihood loss is essential for more grounded adaptation planning. Future SAPCC revisions should commission comprehensive studies—just as Maharashtra engaged agencies like TERI—to include a **historical analysis of human mobility** alongside biophysical and socio-economic assessments. Such studies can reveal how recurring droughts, floods, and agrarian distress have eroded resilience, turning adaptation into distress-driven migration. Building on approaches such as *Henry et al. (2004)*, state and national agencies can employ **event-history and longitudinal analyses** to examine how rainfall variability, livelihood shocks, and social inequalities influence migration decisions over time. Integrating these findings into SAPCC baselines and national adaptation frameworks would enable **data-driven interventions** that anticipate rather than react to vulnerability.

A stronger evidence base also supports **accountable climate finance**. Without disaggregated data on who migrates, under what conditions, and with what impacts, adaptation funds risk reproducing inequality. Evidence-led planning can ensure that both national and state climate budgets allocate resources to communities most affected—especially women farmers and agricultural workers—turning migration data into a tool for equity and preparedness.

6.6 Preventive Governance

Moving from reactive relief to anticipatory and preventive governance is critical for resilience. The 2025 floods once again exposed how post-disaster loan waivers and compensation dominate India's climate response, while preparedness and equitable access remain weak. Institutionalising early-warning systems, pre-emptive relief triggers (such as cash-for-work or livelihood insurance), and district-level social-protection plans within SAPCCs can shift governance from crisis management to long-term risk reduction.

However, stronger policy design must be matched by **implementation parity**. Frameworks like One Nation, One Ration Card have improved portability, yet barriers of documentation, digital verification, and inter-state coordination continue to exclude many seasonal migrants. Similarly, MGNREGA—though universal in principle—is rarely accessible at destination sites due to residence-based registration and administrative fragmentation. Lessons from Maharashtra's Galayukt Dharan and Jalyukt Shivar Abhiyan demonstrate that shared governance, departmental convergence, and local accountability can significantly enhance equity and delivery[37]. Embedding similar collaborative

models in migration and social-protection systems would ensure that entitlements travel with people, not places, closing the gap between policy intent and on-ground access.

Preventive governance must also act at both ends of the migration cycle.

At the source, efforts should focus on livelihood diversification, crop insurance, and agro-ecology skilling—building on initiatives pioneered by SOPPECOM to enhance climate resilience. At the destination, the priority is ensuring safe and dignified living conditions: access to housing, sanitation, water, healthcare, and crèche facilities for migrant families. Achieving this requires coordination among labour, urban development, and climate departments, replacing current siloed approaches with integrated planning that recognises mobility as a continuum rather than a disruption.

Finally, preventive governance must remain **gender-responsive**—ensuring that women farmers and agricultural workers have equitable, continuous access to welfare and livelihood schemes, along with protection from gender-based risks. When early-warning, social-protection, and labour systems are synchronised across geographies, governance becomes anticipatory rather than reactive—transforming cycles of crisis into systems of equity and resilience.

6.7 Recommendations for MAKAAM and Civil Society

1. Build community-based evidence.

Document how slow-onset climate events affect women farmers and agricultural workers through participatory research and intersectional data on Dalit, Adivasi, and landless women. Evidence must clearly link migration as a climate response, not a historical pattern, showing how intensifying and unpredictable climate events are driving displacement and agrarian distress. A strong empirical base will push governments to recognise migration within adaptation and resilience planning and direct climate finance toward affected communities.

2. Forge cross-sectoral alliances.

Work with labour unions, informal-worker federations, urban migrant groups, and environmental networks to demand integrated policies on social protection, safe mobility, and gender-responsive relief. Engage with global forums such as the PDD and UNFCCC Women's Major Group to amplify regional voices.

3. Influence policy revisions.

Contribute evidence and recommendations to upcoming SAPCC updates and the National Adaptation Plan. Advocate a dedicated Human Mobility and Migration section with clear gender and livelihood components, and push states to include early-warning, skill-training, and inter-state coordination measures.

4. Track and influence climate finance.

Monitor allocations from the Green Climate Fund, Adaptation Fund, and state climate budgets to ensure resources reach women and migrating communities. Promote budget earmarks for social protection—such as mobile health units, cash grants, and livelihood diversification.

5. Strengthen women's collectives and leadership.

Build the capacity of self-help groups, cooperatives, and unions on rights, policy, and advocacy to participate effectively in local climate planning. Civil society organisations can also facilitate women's representation in governance structures—such as Gram Panchayats, watershed and forest committees, and district climate cells—ensuring their voices influence decision-making. Encourage community hearings and dialogues where women farmers and agricultural workers directly engage with officials to shape responsive local action.

6. Promote gender-responsive adaptation at source and destination.

Civil-society organisations can help design and pilot gender-responsive adaptation models that link livelihood security, agro-ecology, and water management at the source with safe housing, sanitation, healthcare, and childcare at migration destinations. Partnerships with state agencies should also focus on preventing gender-based violence (GBV) by integrating community-level safety initiatives—such as awareness campaigns, crisis-response networks, and safe-space mechanisms—into existing protection and welfare systems. Collaborating with departments of women and child development, labour, and police can ensure that GBV prevention and response are embedded within state climate and social-protection programmes.

7. Conclusion

This review examined how climate change, agrarian distress, migration, and gender intersect in India's policy landscape. Analysis of the SAPCCs for Maharashtra, Punjab, and Telangana reveals that while climate-induced migration is occasionally acknowledged—mainly in relation to drought—it remains peripheral to strategy, budgeting, and implementation. Migration continues to be viewed as a symptom to prevent, not a process to plan for. Evidence from Maharashtra, particularly among sugarcane workers, illustrates how migration has become a survival response to ecological and economic stress. Yet women farmers and agricultural workers—who face compounded risks of debt, ill health, and gender-based violence—remain invisible in policy frameworks. Intersectional factors of caste, class, and gender deepen this exclusion, leaving the most vulnerable without institutional recognition or protection.

Climate-induced migration, especially when driven by slow-onset events, challenges the core assumptions of current development planning: that populations are static, that resilience means immobility, and that policy delivery is tied to permanent addresses. Entitlement portability and local administrative coordination remain weak, leaving mobile families unable to access welfare and employment schemes such as PDS, healthcare, and MGNREGA. Without robust mechanisms to register and support mobile populations, migration remains unrecognised in both climate and social-protection governance. To close this gap, migration must be treated as an integral dimension of climate adaptation. This requires embedding mobility, gender justice, and social protection into the core of climate planning—across national missions, SAPCCs, and disaster management frameworks. Such integration would align India's climate response with lived realities and ensure that adaptation frameworks reach those most exposed to slow-onset crises.

Ultimately, India's climate policy needs a paradigmatic shift: to see migration not as failure, but as a climate reality that demands proactive planning, protection, and equity. Embedding the experiences and agency of women farmers and agricultural workers into climate governance is not only a matter

of justice—it is central to building inclusive, resilient futures aligned with the Sustainable Development Goals' vision to leave no one behind.

References

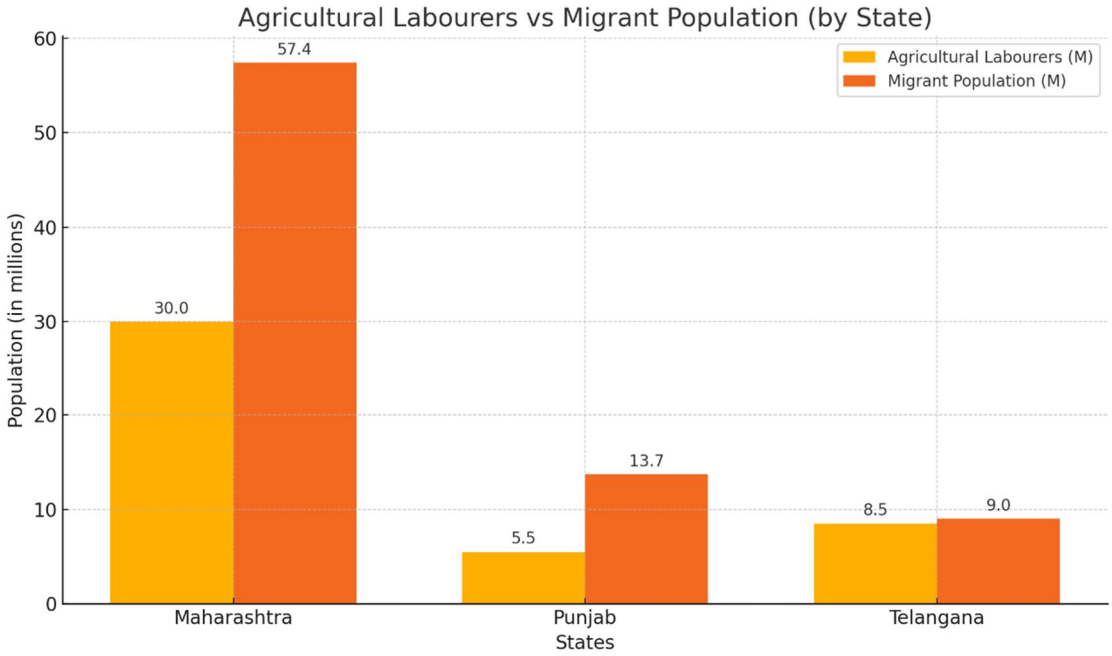
1. Rigaud, K. K., de Sherbinin, A., Jones, B., Bergmann, J., Clement, V., Ober, K., Schewe, J., Adamo, S., McCusker, B., Heuser, S., & Midgley, A. (2018). *Groundswell: Preparing for internal climate migration.* The World Bank. https://openknowledge.worldbank.org/handle/10986/29461.
2. Climate Action Network South Asia (CANSA), ActionAid, Brot für die Welt, WOTR, & SEEDS. (2021, January). *Climate-induced displacement and migration in India: Case studies from West Bengal, Maharashtra, Odisha, Uttarakhand & Bihar.* https://www.cansouthasia.net/publications/climate-induced-displacement-and-migration-in-india.
3. NewsBytes. (2025, October 12). *Climate disasters cost India $12B in 2025 alone.* NewsBytes. https://www.newsbytesapp.com/news/india/climate-disasters-cost-india-12b-in-2025-alone/tldr.
4. Tirodkar, A. (2025, September 29). *Marathwada's farmers face a new kind of drought*. Frontline. https://frontline.thehindu.com/news/marathwada-floods-farmers-crisis-maharashtra-climate/article70108450.ece.
5. Patke, S. (2025, October 13). For years, Marathwada suffered from drought. *Now, floods have swept away crops and livelihoods*. Scroll.in. https://scroll.in/article/1087349/for-years-marathwada-suffered-from-drought-now-floods-have-swept-away-crops-and-livelihoods.
6. Society for Promoting Participative Ecosystem Management (SOPPECOM). (2020). *Caste, migration and forced labour: Sugarcane cutters in Maharashtra*. Society for Promoting Participative Ecosystem Management. https://www.soppecom.org/pdf/Cane-cutters-eport-Final-English-09-09-20.pdf.
7. Bharadwaj, R., Karthikeyan, N., Deulgaonkar, I., & Patil, A. (2024). *Women paying the cost of the climate crisis with their wombs: Quantifying loss and damage faced by women battling drought, debt and migration. International Institute for Environment and Development (IIED).* https://www.iied.org/22281iied.
8. Government of India, Ministry of Agriculture & Farmers Welfare, Department of Agriculture, Cooperation & Farmers Welfare. (2019). *Agricultural Census 2015–16: All India report on number and area of operational holdings. New Delhi*: Agricultural Census Division.
9. International Institute for Population Sciences (IIPS) & ICF. (2021). *National Family Health Survey (NFHS-5), 2019–21: India report*. Mumbai: IIPS. https://dhsprogram.com/pubs/pdf/FR375/FR375.pdf
10. National Sample Survey Office (NSSO), Ministry of Statistics and Programme Implementation, Government of India. (2019). *All India Debt and Investment Survey (AIDIS), NSS 77th Round (January–December 2019): Key indicators of debt and investment in India*. New Delhi: National Statistical Office.
11. United Nations Framework Convention on Climate Change (UNFCCC). (2013). *Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts (WIM).* Warsaw: UNFCCC.
12. United Nations Framework Convention on Climate Change (UNFCCC). (2011). *Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010*. Addendum: Decision 1/CP.16: The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention. Bonn: UNFCCC. https://unfccc.int/documents/6527.
13. United Nations Office for Disaster Risk Reduction (UNDRR). (2015). *Sendai Framework for Disaster Risk Reduction 2015–2030*. Geneva: United Nations Office for Disaster Risk Reduction. https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030.
14. United Nations. (2018). *Global Compact for Safe, Orderly and Regular Migration*. New York: United Nations. https://www.un.org/en/migrationagreement/.
15. Intergovernmental Panel on Climate Change (IPCC). (2022). *Sixth assessment report (AR6). Intergovernmental Panel on Climate Change*. https://www.ipcc.ch/assessment-report/ar6/.
16. Rao, N., Sathe, R., & Grist, N. (2024). *Gender, intersectionality and climate-smart agriculture in South Asia: A review. PLOS Climate, 3(3), Article e0000482*. https://doi.org/10.1371/journal.pclm.0000482.
17. International Organization for Migration (IOM). (2018). *Mapping human mobility (migration and displacement) and climate change in relevant national policies and institutional frameworks*. Geneva: International Organization for Migration. https://publications.iom.int/books/mapping-human-mobility-migration-and-displacement-and-climate-change-relevant-national.

18. General Economics Division (GED), Bangladesh Planning Commission, Ministry of Planning, Government of the People's Republic of Bangladesh. (2020, March). *Perspective plan of Bangladesh 2021–2041*.
19. United Nations Framework Convention on Climate Change (UNFCCC). (2019). *Report of the Conference of the Parties on its twenty-fifth session, held in Madrid from 2 to 15 December 2019. Addendum: Decision 3/CP.25 – Enhanced Lima work programme on gender and its gender action plan.* Bonn: UNFCCC. https://unfccc.int/documents/210471.
20. Ministry of Environment, Forest and Climate Change. (2021, December). *National Action Plan on Climate Change (NAPCC).* New Delhi: Press Information Bureau, Ministry of Information and Broadcasting, Government of India.
21. National Disaster Management Authority (NDMA), Government of India. (2019, November). National Disaster Management Plan, 2019. New Delhi: National Disaster Management Authority.
22. NITI Aayog, Government of India. (2018). *Drought management in India*. New Delhi: NITI Aayog. https://www.niti.gov.in/sites/default/files/2019-01/DroughtManagementinIndia_0.pdf.
23. Government of Maharashtra, Environment Department. (2014). *Maharashtra State Action Plan on Climate Change (MSAPCC).* Mumbai: Government of Maharashtra. https://moef.gov.in/uploads/2017/09/Maharashtra-Climate-Change-Final-Report.pdf.
24. Society for Promoting Participative Ecosystem Management (SOPPECOM). (2020). Crushed hopes: The plight of women cane cutters in Maharashtra. Pune: SOPPECOM. https://soppecom.org/pdf/Cane-cutters-eport-Final-English-09-09-20.pdf.
25. Adhikari, P., & Shree, V. (2020, February). Human cost of sugar: *Living and working conditions of migrant cane-cutters in Maharashtra (Discussion Paper)*. Oxfam India. https://www.oxfamindia.org/sites/default/files/2020-02/%23Human%20Cost%20of%20Sugar_Maharashtra%20Case.pdf.
26. Environment Protection Training and Research Institute (EPTRI). (2014). *Telangana State Action Plan on Climate Change (SAPCC)*. Environment Protection Training and Research Institute.
27. Jerath, N., Ladhar, S. S., Kaur, S., Sharma, V., Saile, P., Tripathi, P., Bhattacharya, S., & Parwana, H. K. (2014). *Punjab State Action Plan on Climate Change*. Punjab State Council for Science and Technology & Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.
28. Society for Promoting Participative Ecosystem Management (SOPPECOM), & Mahila Kisan Adhikar Manch (MAKAAM). (2025, October). *Understanding the nature, forms and implications of structural violence against rural women in the context of agrarian distress in Maharashtra, Telangana and Punjab.*
29. Environmental Justice Atlas (EJAtlas). (2021, October 14). Tribals, forest rights activists oppose Telangana government's tree-plantation programme, India. Environmental Justice Atlas. https://ejatlas.org/print/telangana-government-plantation-programme.
30. Bhasme, S., & Taylor, M. (2025, October 6). Assessing PoCRA's promise: Do climate-resilient practices benefit Maharashtra's farmers? The Wire. https://thewire.in/environment/assessing-pocras-promise-do-climate-resilient-practices-benefit-maharashtras-farmers.
31. Udmale, P., Ichikawa, Y., Manandhar, S., Ishidaira, H., & Kiem, A. S. (2014). *Farmers' perception of drought impacts, local adaptation and administrative mitigation measures in Maharashtra State, India*. International Journal of Disaster Risk Reduction, 10, 250–269. https://doi.org/10.1016/j.ijdrr.2014.09.011.
32. Priolker, A. (2019, April 22). *Parched Beed is caught in a vicious cycle of drought and unemployment. NDTV Profit*. https://www.ndtvprofit.com/politics/parched-beed-is-caught-in-a-vicious-cycle-of-drought-and-unemployment.
33. Society for Promoting Participative Ecosystem Management (SOPPECOM). (2024). *Agrarian distress & violence: Maharashtra state summary report.* Society for Promoting Participative Ecosystem Management. https://www.soppecom.org/pdf/exi-Agrarian-distress-violence-Maharashtra-state-summary-report.pdf.
34. Society for Promoting Participative Ecosystem Management (SOPPECOM). (2023, November 18). *Through her lens: Self-captured stories of women sugarcane cutters in Maharashtra*. Society for Promoting Participative Ecosystem Management. https://www.soppecom.org/pdf/Through%20Her%20Lens.pdf.
35. Subramaniam, R. (2021). *Climate Brides Project*. https://www.climatebrides.com/.
36. Hans, A., Rao, N., Prakash, A., & Patel, A. (Eds.). (2021). Engendering climate change: Learnings from South Asia. Routledge.

37. Kumar, A. (2024, April 13). *Mutual strain and equitable gain: Reflections from a model of collaborative governance in Maharashtra, India. Economic and Political Weekly, 59*(15). https://www.epw.in/journal/2024/15/special-articles/mutual-strain-and-equitable-gain.html.
38. Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India, United Nations Development Programme (UNDP), & Indian Institute of Forest Management (IIFM). (2024). *Engaging with the Green Climate Fund: A digital toolkit for India.*
39. International Organization for Migration (IOM). (2012). *Rural women and migration: Fact sheet*.
40. International Organization for Migration (IOM). (2014*). IOM outlook on migration, environment and climate change. International Organization for Migration.*
41. Mitra, S., Kutty, S., & Chaudhry, S. (2024, August 30). Analysing the gender budget of 2024–25 (explained). The Quantum Hub. https://thequantumhub.com/analysing-the-gender-budget-of-2024-25-explained/
42. Least Developed Countries Expert Group (LEG). (2025, May). UNFCCC NAP technical guidelines (Updated version). United Nations Framework Convention on Climate Change (UNFCCC). https://unfccc.int/topics/adaptation-and-resilience/workstreams/national-adaptation-plans-naps/nap-technical-guidelines
43. Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India. (2021). *India: Third biennial update report to the United Nations Framework Convention on Climate Change.* Ministry of Environment, Forest and Climate Change.
44. Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India. (2024). *India: Fourth biennial update report to the United Nations Framework Convention on Climate Change.* Ministry of Environment, Forest and Climate Change.
45. The Energy and Resources Institute (TERI). (2014). *Assessing climate change vulnerability and adaptation strategies for Maharashtra: Maharashtra State Adaptation Action Plan on Climate Change (MSAAPC) (Project Report No. 2010GW01)*. The Energy and Resources Institute.
46. Li, K., Pan, J., Xiong, W., & others. (2022). The impact of 1.5 °C and 2.0 °C global warming on global maize production and trade. Scientific Reports, 12, 17268. https://doi.org/10.1038/s41598-022-22228-7
47. Government of Maharashtra. (n.d.). Majhi Vasundhara: Toolkit for implementation. https://majhivasundhara.in/assets/docs/toolkit_download.pdf
48. Divisional Commissioner Pune. (n.d.). Majhi Vasundhara Abhiyan 5.0. https://divcompune.maharashtra.gov.in/scheme/majhi-vasundhara-5-0
49. Zilla Parishad Satara. (n.d.). Village Panchayat Department. https://www.zpsatara.gov.in/en/village-panchayat-department.
50. Environment and Climate Change Department, Government of Maharashtra. (2021). *Request for proposal for selection of agency to conduct desktop assessment – Majhi Vasundhara Abhiyan 2.0 (2021–22)*.
51. Department of Agriculture, Government of Maharashtra, & The World Bank. (2025). Project on Climate Resilient Agriculture (POCRA): Project implementation plan.
52. Parth, M. N. (2021, August 12). *Beed's child brides: Cutting cane, crushing hopes. Pulitzer Center*. https://pulitzercenter.org/stories/beeds-child-brides-cutting-cane-crushing-hopes.
53. Subramanian, R. R. (2024). *Gate-Cane: (Un)tying the knots between climate, cane, and early marriage in rural India. Climate and Development, 17(1), 76–89*. https://doi.org/10.1080/17565529.2024.2326117.
54. Mishra, A. K., & Singh, V. P. (2010). *A review of drought concepts. Journal of Hydrology, 391(1–2), 202–216.* https://doi.org/10.1016/j.jhydrol.2010.07.012.
55. Society for Promoting Participative Ecosystem Management (SOPPECOM). (2024). *Agrarian distress & violence: Telangana state summary report. Society for Promoting Participative Ecosystem Management*. https://www.soppecom.org/pdf/exi-Agrarian-distress-violence-Telangana-state-summary-report.pdf.
56. Society for Promoting Participative Ecosystem Management (SOPPECOM). (2024). *Agrarian distress & violence: Punjab state summary report*. Society for Promoting Participative Ecosystem Management. https://www.soppecom.org/pdf/exi-Agrarian-distress-violence-Punjab-state-summary-report.pdf.
57. Rodrigues, E. (2025, January 31). *Millions poised to be displaced by climate change, but few signs India is planning or budgeting for it.* Article 14. https://article-14.com/post/millions-poised-to-be-displaced-by-climate-change-but-few-signs-india-is-planning-or-budgeting-for-it-679c04b96853f.

58. Mahato, R. K., Kotu, S. C., Singh, K., Das, A., & Reddy, B. A. (2024, April 20). Status of women's landownership in India: A comparison of estimates from NFHS and AIDIS. Economic and Political Weekly, 59(16). https://www.epw.in/journal/2024/16/special-articles/status-womens-landownership-india.html.
59. Intergovernmental Panel on Climate Change (IPCC). (2018). Summary for policymakers. In V. Masson-Delmotte, P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P. R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, & T. Waterfield (Eds.), *Global warming of 1.5°C: An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (pp. 3–24).* Cambridge University Press. https://doi.org/10.1017/9781009157940.001.

Annexure 1. Agricultural labourers vs migrant population by State (Punjab, Telangana, Maharashtra)



Key Observations from the Chart

Maharashtra has both the highest number of agricultural labourers (~30 million) and migrants (~57.4 million), highlighting its centrality to national rural migration flows. Punjab, despite being smaller in population, shows a high migrant intake (~13.7 million), largely due to inbound rural labor for farming. Telangana has fewer total migrants but a notable share of agricultural workers (~8.5 million), with significant seasonal migration that is under-reported in policy. This reinforces the need to factor in mobile, landless, and climate-affected rural labourers in sub-national climate action plans.

Annexure 2. Majhi Vasundhara Abhiyan: A Maharashtra model for localising SAPCC through Gram Panchayat engagement

The Majhi Vasundhara Abhiyan (MVA)[47] offers a compelling case of how a state can operationalize its State Action Plan on Climate Change (MSAAPCC) by embedding climate goals into routine governance across all administrative levels, right down to the gram panchayat (GP). Launched by the Government of Maharashtra, the Abhiyan translates the MSAAPCC's broad vision into measurable, participatory climate action at the local level through a structured performance framework, behavioural incentives, and community mobilisation.

1. Gram Panchayats as Anchors of Climate Implementation

Majhi Vasundhara Abhiyan ensures 100% GP participation across Maharashtra, where each panchayat reports progress on indicators aligned with the Panchamahabhuta (Earth, Water, Air, Energy, Sky) framework—such as tree planting, solar pump use, and composting. A two-stage monitoring process—desktop scoring followed by field verification—ensures data integrity. High-performing GPs and officials (Collectors, ZP CEOs, BDOs) are recognized with formal awards, creating an incentive structure that encourages compliance. Dedicated nodal officers at the GP level mobilize SHGs, schools, and youth groups, embedding climate action in everyday governance.

2. Taluka and District-Level Oversight

At the taluka and division levels, Implementation and Evaluation Committees monitor GP performance, validate reports, and coordinate across departments. GPs are grouped by population to enable fair benchmarking and healthy competition. The Maharashtra Pollution Control Board engages third-party evaluators for field verification, enhancing accountability and credibility of the data collected.

3. Institutional Alignment with MSAAPCC

Majhi Vasundhara operationalizes the MSAAPCC through vertical integration—linking state climate strategy to measurable GP-level action. A standardized toolkit simplifies adaptation goals into local indicators. The model facilitates cross-sectoral collaboration (Environment, Rural Development, ZPs, SHGs) and offers a scalable, incentive-based blueprint for other states to implement decentralized climate governance effectively.

By blending monitoring, recognition, and community ownership, Majhi Vasundhara Abhiyan showcases how climate action under SAPCCs can move beyond top-down policy frameworks toward grassroots institutionalization. It offers a replicable template for states seeking to translate adaptation planning into measurable and participatory governance at the last mile.