Putting land rights in the climate change narrative: Voices from the ground

ANGOC

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Founded in 1979, the **Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC)** is a regional association of national and regional networks of civil society organizations (CSOs) in Asia actively engaged in promoting food sovereignty, land rights and agrarian reform, sustainable agriculture, participatory governance, and rural development. ANGOC member networks and partners work in 10 Asian countries together with some 3,000 CSOs and community-based organizations (CBOs). ANGOC actively engages in joint field programs and policy discussions with national governments, intergovernmental organizations (IGOs), and international financial institutions (IFIs).

The complexity of Asian realities and diversity of CSOs highlight the need for a development leadership to service the poor of Asia – providing a forum for articulation of their needs and aspirations as well as expression of Asian values and perspectives. Thus, the ANGOC network promotes land and resource rights, smallholder agriculture, and human rights and civic participation, by serving as a platform for Asian CSOs to generate knowledge, share tools, and conduct constructive policy dialogues.

ANGOC is a member of the Global Land Tool Network (GLTN), Global Forum on Agricultural Research and Innovation (GFAiR), Indigenous Peoples' and Community Conserved Areas and Territories (ICCA) Consortium, International Land Coalition (ILC), and Fair Finance Asia (FFA).

ANGOC may be reached at:

33 Mapagsangguni Street, Sikatuna Village
Diliman, 1101 Quezon City, Philippines
Tel: 63-2-83510011 | Email: angoc@angoc.org
Website: www.angoc.org

Established in January 1991, the **Association for Land Reform and Development (ALRD)** is a single-focused, rights-based national networking organization mandated to facilitate the land and agrarian reform advocacy, mobilization, and capacity building of its partners and allies in enabling access to and control over natural resources of the poor, landless, and marginalized communities in Bangladesh. In subsequent decades, ALRD has emerged as a professionally trained knowledge network in the land sector to amplify the collective voice of the marginalized communities in Bangladesh.

ALRD has a network of more than 200 NGOs and civil society organizations all across the country.

1/3 Block–F; Lalmatia
Dhaka–1207
Phone: +88 02 41022445-7
Email: alrd@agni.com
Website: www.alrd.org

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Editorial Team: Teresa Lingan-Debuque, Antonio B. Quizon, Nathaniel Don E. Marquez

Layout and Design: Gerard Jerome Dumlao

Cover Artwork: Kazuyoshi Sanada

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Case writers

- A.K.M. Bulbul Ahmed, Shanjida Khan Ripa, and Rafique Ahamed Sherajee, Association for Land Reform and Development
- Marie Joy Demaluan and Caryl Pillora, Center for Agrarian Reform and Rural Development
- Jagat Deuja, Community Self-Reliance Centre
- Rizki Anggriana Arimbi, Irmawati, and Indarto, Konsorsium Pemberaun Agraria
- Mino Ramaroson, Huairou Commission
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- Pubudini Wickramaratne, Oxfam and Rashmini de Silva, Law and Society Trust
- Rohini Reddy, South Asia Rural Reconstruction Association
- Te Sokkhouen, STAR Kampuchea

Overview Papers

- Rowshan Jahan Moni, ALRD
- Antonio B. Quizon, ANGOC

FOREWORD

In its 2023 report, the Intergovernmental Panel on Climate Change (IPCC) revealed that 3.3 to 3.6 billion people today are living in conditions that make them highly vulnerable to climate change. An earlier report by the Asian Development Bank (ADB) and the Internal Displacement Monitoring Centre (IDMC) showed the inexorable advance of climate change. Between 2010 and 2021, over 213 million people in the Asia-Pacific region alone were displaced by weather-related events, such as monsoon rains and tropical storms, and this number is expected to keep rising in the coming years.

Climate change affects everyone. Yet, the poor suffer its worst effects.

Landlessness and the lack of secure land tenure amplify the vulnerability of rural poor communities to the impacts of climate change. Yet, the challenges surrounding their lack of land access and insecure tenure rights are often overlooked in current climate change discussions, policy-making, and program implementation.

Thus, civil society organizations (CSOs) continue to raise the visibility of land tenure rights in the current climate change discourse.

In partnership with the Global Forum on Agricultural Research and Innovations (GFAiR) and Land Portal Foundation, ANGOC initiated a collaborative effort to document and analyze cases of how local communities respond to climate-led disasters. This initiative aimed to raise public awareness and advocate for addressing land tenure rights in response to climate change. Such undertaking complements with the work program of the Global Land Tool Network (GLTN) to deepen public understanding of the nexus of land rights and climate change.

As part of this initiative, 12 case studies were conducted in Asia and Africa. These studies provide compelling evidence that the absence of secure land rights exposes impoverished rural communities to significant vulnerabilities arising from climate change impacts and hampers their ability to recover from climatic events. Moreover, the cases illustrate how land tenure insecurity undermines the capacity of

communities to engage in climate adaptation and mitigation; disqualifies them from government compensation for loss and damage; deters them from implementing sustainable land use and governance practices; and, severely constrains their right to make decisions and investments that ensure their survival and improve their resilience.

A conference was convened in Dhaka, Bangladesh, from 10 to 11 October 2023, to emphasize the crucial role of land rights in addressing the challenges posed by climate change. The decision to host the conference in Bangladesh was made to underscore the heightened risks posed by climate change on the country. Currently, Bangladesh loses 32 square kilometers of land annually due to river and sea erosion (CEGIS in Azad, 2021), creating millions of internal climate migrants. As of 2019, this displacement has affected 4.1 million people, constituting approximately 2.5 percent of the country's population.

At the conference, participants formulated the **Dhaka Declaration,** calling for a human rights-based approach to climate justice. The document emphasizes the importance of land governance that promotes and supports equitable access to land, water, and natural resources as a key component for building climate resilience.

We hope this publication will enrich ongoing discussions aimed at empowering rural communities in responses to climate change. By focusing on land rights, we are optimistic that climate change policies and programs will be better-designed and more responsive. We urge governments and intergovernmental bodies to prioritize land tenure security as the cornerstone of climate resilience for the rural poor who are currently the first-hit and worst-affected by climate change.

Dewi Kartika
Chair, ANGOC

Nathaniel Don E. Marquez
Executive Director, ANGOC

Shamsul Huda
Executive Director, ALRD

Land tenure rights in the narrative of climate change

Antonio B. Quizon, with contributions from Nathaniel Don E. Marquez and Teresa Lingan-Debuque

Today, an estimated 3.3 to 3.6 billion people live in contexts that are highly vulnerable to climate change.[1]

In the Asia-Pacific region alone, over 213 million people were displaced by *weather-related events* – such as monsoon rains and tropical storms that caused floods and landslides – between 2010 and 2021.[2] The number of people directly affected by climate change is expected to rise further.

Meanwhile, we are only beginning to experience the *slow-onset impacts* of climate change, such as increasing droughts, melting glacial caps, and rising sea levels. From 2010 to 2021, these caused at least 760,000 internal displacements in 17 countries in the Asia-Pacific region.[3]

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[1] IPCC (2023). Climate Change 2023: A Synthesis Report – Summary Report for Policymakers. https://www.ipcc.ch/ report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf
[2] IDMC and ADB (2022). *Disaster Displacement in Asia and the Pacific.* Internal Displacement Monitoring Centre and Asian Development Bank. https://www.adb.org/sites/default/files/publication/823176/disaster-displacement-asia-pacific.pdf
[3] Ibid.

The poor and land-insecure

Climate change affects everyone, but it hits the poorest and those without secure land rights the hardest. Poverty pushes people to farm on difficult land or settle in areas prone to erosion, flooding, high tides and storms. And while poor people are aware of the risks they face, they have few options. Many are forced to accept or ignore their conditions, in order to survive and carry out their livelihoods.

Thus, **when disasters strike, those who are poor and lack tenure rights are the *first* to be hit, and the *last* to recover.**

Certain groups are especially vulnerable to climate change's impacts. These include women, children, people living by rivers or coasts, small farmers, and those who rely on farming for their livelihood. **According to the UN Human Rights Council, climate change poses an immediate and far-reaching threat to human rights of people and communities all over the world.**[4]

However, the links between land tenure and climate change are still not well understood or fully appreciated. Much of current literature focuses on the *macro* and *physical* impacts of climate change on land, with insufficient attention given to the *social* impacts of climate change from the perspective of poor people, and how it affects their welfare and livelihoods, social relationships, and security of tenure on the land.

This is because discussions on climate change are often framed by a global perspective, and focuses on the collective use (or abuse) of land and natural resources. On the other hand, land tenure — the relationship between people and land — is traditionally understood from the level and perspective of individuals, families, and communities. The connection becomes clearer only when viewed from a broader perspective, from which relationships can be observed.

[4] UN Human Rights Council Resolution 7/23.

Meanwhile, **public understanding of the links between climate change, disasters, and land tenure is still very limited, leading to poor prevention and wrong responses, while those without land or are near landless remain voiceless, and are often left out of climate change discussions.**

The case studies

This publication includes 12 case studies involving local communities in Asia and Africa that highlight the links between land tenure rights, land and resources use, and climate change.

Eleven of these 12 studies were presented and discussed at the Conference on *"Mainstreaming land rights in the narrative of climate change: views from the ground"* held on 10 to 11 October 2023 in Dhaka, Bangladesh. The Conference was organized by the Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC) and the Association for Land Reform and Development (ALRD) in partnership with the Global Forum on Agricultural Research and Innovation (GFAiR), the Global Land Tool Network (GLTN), and the Land Portal Foundation (LPF).

These case studies were prepared in order to:

- illustrate how the lack of tenure security and resource rights increases the vulnerability of the rural poor, and reduces their capacity to cope with the changes brought about by climate change;
- identify and analyze climate change responses by authorities and other stakeholders that impact on land tenure security;
- illustrate the relationships between land tenure, climate change vulnerability and adaptive capacity; and,
- recommend policies and actions to address the identified issues/ gaps.

The case studies are presented in this book along five thematic areas:

Theme	Description
Women, land rights, and resiliency	How women's rights, especially over land, improve the capacities of families and communities to implement resilience actions

Customary tenure, use, and governance	How recognizing customary land rights and practices of indigenous communities helps build local capacity to mitigate and adapt to climate change
Land rights and sustainable land/ resource use	How secure tenure rights encourages sustainable land use by communities in ways that protect and restore their environment
Coping with risks and preventing disputes	How those with secure tenure are less likely to be at risk of land disputes, which may affect their adaptive capacity
Rebuilding after disasters	How tenure security/insecurity affects the post-disaster capacity of people to recover and rebuild

Impact of climate-led disasters on land and people

When climate-led disasters strike, people may be directly affected by *significant losses of land*, due to erosion, landslides, flooding, salinization and loss of vegetation. Lives are affected and lost; families are displaced; homes and crops are destroyed; and, livelihoods disappear. There is a loss of potable water, and diseases proliferate, especially among children. Almost 90 percent of all climate change-related diseases are reported to be borne by children under the age of five. Other losses are not easy to quantify, such as those related to community and social ties, cultural heritage, and sovereignty.

Families lose important *documents*, including land certificates, contracts, and *identity documents* necessary to claim entitlements. These losses make it harder for people to find work or to restore their livelihoods. Widows and orphans become particularly vulnerable, especially in cases where women are denied inheritance rights, and lands are registered only in the names of men and male heads of households. And the tenure security of women is increasingly compromised as climate-related effects intensify.

Studies show that holders of *secondary* tenure rights – tenants and sharecroppers, pastoralists, and those who lease, use or occupy land – become particularly *vulnerable to evictions.* Tenancy arrangements are often not documented, or recognized by the government. In the Philippines, tenants of coconut farms were evicted by their landowners after a typhoon had damaged their crops. Some landlords harvested the fallen trees and sold them as lumber, without giving the tenants a share. Some landowners also began to sell the lands without the knowledge of their tenants.[5]

Studies also show that women are several times more likely to die from climate disasters than men, and the greater the gender and economic inequality, the greater the disparity. An estimated 80 percent of people displaced by climate-related disasters are women, and instances of gender-based violence against women and girls tend to escalate following displacement, conflicts, and natural calamities.[6]

The link between land tenure insecurity and risks due to natural disasters is exemplified by the case of people who currently live on Bangladesh's river islands, known as char. Char dwellers live on land that is created by river deposits and could at any time disappear in the same way. Eighty percent of the inhabitants of the country's char lands have no land of their own and are considered as ultra-poor. They live on leased land and are vulnerable to various forms of exploitation.[7]

Recovery from disasters

In the aftermath of disasters, sectors with no security of tenure have the least capacity to recover and rebuild. They often become trapped in recurring cycles of vulnerability. This can manifest

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[5] Alvarez, K. (2017). *Linking Land Tenure and Climate Change: The Case of Haiyan in Eastern Samar, Philippines.* Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC). Manuscript.

[6] Fry, Ian (2022). *Promotion and protection of human rights in the context of climate change mitigation, loss and damage and participation.* Report of the Special Rapporteur on the promotion and protection of human rights in the context of climate change in accordance with Human Rights Council resolution 48/14. 77th Session of the UN General Assembly, 26 July 2022.

[7] Sherajee, Rafique Ahamed (2023). *Land Emerges, Land Disappears: Char Dwellers Continue Fighting for Land Tenure Security*. Association for Land Reform and Development (ALRD).

in several ways: (1) sinking further into poverty and debt due to unrevived livelihoods; (2) returning to previous displacement areas or settling in unsafe land; or (3) becoming part of a lingering population without land or stable housing.

Climate change aggravates existing inequalities, marginalization and exclusion, and further increases people's vulnerabilities.

The case study of families in Melamchi and Helambu municipalities, located in Sindhupalchok District, Nepal, illustrates how the lack of land rights creates new inequalities following a climate-induced disaster. Since eligibility for aid is closely linked to land ownership, tenants, sharecroppers, lessees and occupants were excluded from disaster loss compensation, livelihood loans, and resettlement and shelter programs from government. After severe floods in 2021, affected families were forced to relocate to flood-prone and landslide-prone areas in Melamchi, exposing them to further risks.[8]

Families without land tenure rights are likely to face difficulty in reclaiming their occupied lands following a disaster. Where land is submerged or eroded, boundaries disappear, and conflicts arise.

The case study of Yusuf Matubbarer Dangi Village in Bangladesh shows how communities are rendered landless by constant river erosion and flooding. As people lose their land to river erosion, they wait for new land to emerge from the river in the simultaneous erosion and accretion of land when the river swells. They then hope that the government would grant them parcels of this newly-created land, in accordance with the law. But like many others, they are left landless because powerful people come to control the available land.[9]

Where landscapes are completely destroyed, or when adaptation is no longer feasible, families are forced to migrate.

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[8] Deuja, Jagat (2023). *Drowning in despair: The story of a dream washed away by a flood (Nepal).* CSRC.
[9] Ripa, Shanjida Khan (2023). *Communities face off with a river that swallows lands and homes.* ALRD.

They carve out new spaces and livelihoods in unfamiliar places, leaving them worse off than before. Without social ties, many face the prospect of conflict and violence with existing residents over their newly-claimed spaces, and, they face the constant threat of eviction.

Indeed, natural disasters and extreme weather events can intensify conflicts over land. Drought and changes in rainfall patterns may cause traditional pastoralists to veer away from their migratory routes and bring them into conflict with farming communities. The loss of farms may force farmers to shift to livelihoods that offer immediate and short-term returns, such as charcoal-making, timber harvesting or quarrying – in ways that bring them into conflict with existing users of forests and public lands.

Disasters also provide opportunities for land grabs, especially where entire communities are wiped out. Land investors and elites grab abandoned land, use their influence to obtain State concessions, or else negotiate with poor people in distress. Cases show that disasters bring about a consolidation of State emergency powers, and given the displacement of large numbers of people without clearly defined land ownership, they enable private and government land grabs.

And in cases where the affected community has been almost completely destroyed, and there is no guarantee of successful in-place recovery and rehabilitation in the immediate aftermath of a disaster, the most important task may be to facilitate a managed retreat to the most suitable resettlement areas, guided by a plan that is developed jointly by the affected community, the government, and support organizations. This is shown in the case study of the sinking island of Ghoramara, in West Bengal, India.[10]

Official responses to disasters

Government responses to disasters, in turn, may also impact on *land tenure systems* and the *resilience* of people and communities.

[10] Brown, Jennifer (2023). *The sinking island of Ghoramara, West Bengal, India: a case study of community resettlement.* LANDESA.

Government may take measures that prevent affected families from returning, including establishing prohibited zones and "no-go" areas. Entire areas may be re-zoned or designated for other use, and/or reassigned to other investors. For instance, in the immediate aftermath of Typhoon Haiyan in the Philippines, a "40-meter no-dwelling zone" along the coastlines of Eastern Samar and Leyte provinces, affected some 200,000 people who at the time faced the prospect of prolonged displacement.[11] Yet, some of the same areas were later leased out to private investors and beachfront property developers.

Massive numbers of families may need to be relocated and permanently resettled elsewhere. However, only a small portion of displaced families are officially relocated or resettled; the majority are forced to relocate on their own. Many live with relatives, or else migrate to the cities to find work. It is found that weather-related disasters are a major cause of rural-urban migration. And climate change can impact both their places of origin and their destination.

Most government resettlement programs are beset by the lack of available public lands. Thus, families are often relocated on land that may be unsafe, in remote locations that lack basic services and far away from people's sources of work and livelihood. Oftentimes, fishing families are relocated inland, away from the coasts that used to provide their livelihoods. Many are forced to shift their livelihoods or seek low-paying work for which they have limited skills or experience.

For indigenous communities whose lives are inextricably linked to their ancestral home, uprooting exacts a toll on their identity and undermines the continuity of their culture and traditions.[12]

Without land, people affected by climate change may fall into spirals of homelessness and dislocation unless they find other sources of income and livelihood.

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[11] Quizon, Antonio (2017). *Climate Change and Land Tenure in the Philippines: A scoping of legislations, recent field experiences and their implications for land tenure and climate change policies.* Quezon City: Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC).

[12] Ahmed, A.K.M. Bulbul (2023). *Climate resilience in Munda Community in South Western Coastal Area of Bangladesh.* ALRD.

Land tenure rights in adaptation

In climate change response, mitigation requires global commitment, while adaptation is immensely local. Security of land tenure becomes crucial for disaster prevention and adaptation to climate change.

When land tenure is insecure, the constant threat of eviction increases the vulnerability of households; it discourages people from investing in their homes and farms. On the other hand, those with secure land tenure are more likely to build better housing, embankments, terraces, dikes, canals, and drainage systems that reduce their exposure to damages and risks. **Adaptation is enabled by the presence of land tenure rights.**

In agriculture, the specific type of tenure (i.e., being an owner, lessee, tenant, agricultural worker, or landless farmer) can determine the whole range of options that farmers have in managing their farms – e.g., their choice of farming system, irrigation, inputs, what to plant, and when to harvest.

Farmers with permanent or long-term tenure are more likely to invest on improving soil fertility and protecting it from erosion, on planting trees, or on improving pastures by allowing them to regenerate.

Land tenure security can impact a farmer's risk management decisions through their perceptions of risks, and access to government services. For instance, in the selection of seed varieties and farming systems, rice farmers with land tenure security are more likely to focus on crop stability and consistency, rather than on maximizing short-term yields and profits.

The case study of farmers in Passi City, Philippines shows how having a land title helps farmers recover faster after a climate disaster. In Passi City, Philippines, farmers quickly bounced back from a super-typhoon in 2013 because they collectively owned the land and practiced organic farming. Their freedom to make decisions helped them rebuild their livelihoods, and to sell their organic rice at higher

prices, demonstrating how land security boosts resilience to climate problems.[13]

Securing land tenure rights for women is key for their social and economic well-being and in climate change adaptation and improving resilience. Women's concerns for nutrition and food security, economic stability, security of shelter, health, safety, and family well-being all represent significant areas for adaptation.[14] When productive assets such as land rights are placed in the name of women, this enhances their tenure security and allows more benefits to flow to their children and dependents.

The case study of rural women in Analamanga Region, Madagascar shows how women have adapted to climate impacts by embracing sustainable land management, including the adoption of organic agriculture, and by replenishing forests and protecting natural habitats.[15]

When adaptation needs to be implemented on a larger scale, organization and collective action become indispensable. A common example is the establishment of community forests or the management of grazing grounds.

The key is building resilience by maintaining healthy and diverse landscapes, diversifying production systems, strengthening community institutions, and improving land tenure security. **Instead of centralized control, local efforts should be multiplied a thousand-fold by involving communities in managing natural resources, helping people acquire secure tenure on land (including property rights), improving access to markets, and strengthening the quality of governance.**

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[13] Demaluan, Marie Joy (2023). *Land rights security improves sustainable rice farming: Increasing climate mitigation in upland communities in Passi City, Philippines.* CARRD

[14] David Mitchell and Darryn McEvoy (2019). *Land Tenure and Climate Vulnerability.* Nairobi: UN Habitat, RMIT and GLTN. https://unhabitat.org/sites/default/files/documents/2019-06/un-habitat-gltn-land-and-climate-vulnerability-19-00693-web.pdf

[15] Ramaroson, Mino (2023). *Navigating Climate Change and Land Tenure Insecurity: A Case Study of Rural Women's Resilience Efforts in Analamanga Region, Madagascar.* Huairou Commission (HC).

Stories from rural communities in Bangladesh, Nepal, Sri Lanka, and Timor-Leste reveal how insecure land ownership worsens loss and damage resulting from the climate crisis. These individuals face similar challenges: without secure land rights, they cannot make the necessary decisions or investments to adapt to climate change. They also miss out on government support because they lack proof of land ownership. With few options for relocation, they are forced to stay in hazardous areas, increasing their risk of further loss and damage. Women and girls, often left behind as men seek daily labor, bear heavier family responsibilities. These stories highlight the urgent need for policy changes that prioritize land tenure security in climate responses.[16]

Some communities learn to cope, adapt and innovate in the midst of tenure insecurity and agrarian conflicts and natural disasters.

The case study of Trapeang Rumdenh Village in Cambodia illustrates how climate change affects communities through floods, droughts, and other extreme weather events. Each time, the villagers find a way to recover from setbacks, learning valuable lessons from each disaster, which help them prepare for future ones. They have learned the importance of diversifying their income sources, and the need to document their occupancy and use of the land, in order to secure their tenure rights to the land.[17]

In the coastal village of Ujung Baji in South Sulawesi, Indonesia, fisherfolk and farmers worked on small plots of land without legal rights, and gathered resources from mangrove forests. However, powerful groups, with help from local officials, destroyed the mangroves to make way for mining of sand from the ocean and coastline. This left the villagers without livelihoods. Despite this, the village has emerged as a major seaweed producer, preventing further poverty. New types of seaweed resistant to climate change now

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[16] Wickramaratne, Pubudini and De Silva, Rashmini (2023). *Land rights take center stage in Asia's fight against climate change.* Oxfam International.
[17] Sokkhoeun, Te (2023). *Through Deluge and Drought: A Village Overcomes.* STAR Kampuchea.

provide a stable income for disadvantaged villagers facing unfair agrarian conditions.[18]

Role of indigenous peoples and cusstomary use

Land is both a source and a sink of greenhouse gases (GHGs) that cause climate change.[19] Currently, people use over a quarter of the world's land's production potential for food, feed, fiber, timber and energy.[20] Land also provides the basis for many other *ecosystem functions and services*, such as providing for clean air and water, decomposition of wastes, and erosion prevention.

Thus, the way in which land is allocated, used, managed and governed, impacts significantly on overall GHG emissions and climate change.

Much of the world's remaining forests lies in customary lands of indigenous peoples who depend on it for food, shelter and livelihoods. They have acted as stewards of the world's most valuable remaining ecosystems. In the Philippines, out of the 128 initially identified key biodiversity areas, 96 sites or 75 percent lie within the traditional territories of indigenous peoples.[21]

A 2016 study of 36 countries by the Rights and Resource Institute (RRI) showed that forest lands that are legally-owned or traditionally-held by indigenous peoples contain *at least* 54.5 million metric tons of

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[18] Arimbi, Rizki Anggriana Arimbi, Irmawati and Indarto (2023). *Peasants and Fisherfolk Adapt and Innovate in the Midst of Agrarian Conflicts and Natural Disasters.* KPA.

[19] On average, the land sector accounted for 13-21% of global total human (anthropogenic) GHG emissions in the period 2010-2019. IPCC (2019). *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems.* https://www.ipcc.ch/site/assets/uploads/2019/11/SRCCL-Full-Report-Compiled-191128.pdf

[20] Ibid.

[21] De Vera, Dave (2018). "Recognition of Indigenous Peoples' Ancestral Domains," in *State of Land and Resource Tenure Reform in the Philippines 2018.* Quezon City: Asian NGO Coalition.

carbon (MtC), or *at least* 24 percent of the total carbon stored aboveground in the world's tropical forests.[22]

Securing the land rights of indigenous communities, along with education, will be crucial for the conservation and enrichment of these carbon reserves.[23] Integrating customary land tenure systems within formal land governance structures can also significantly strengthen community resilience.

In Kenya, pastoralist communities have long depended on their traditional land management systems to access grazing land and support their way of life during droughts. But now, they face a threat from new land laws that are replacing these traditional systems. These laws not only weaken the old customs but also allow wealthy individuals to take control of communal land. Without proper legal recognition, communities risk losing their land to large-scale development and unfair agreements.[24]

Meanwhile, the welfare and protection of indigenous peoples must be addressed. Indigenous peoples account for just five percent of the world's population yet comprise about 15 percent of *all* the poor people in the world, and some one-third of the world's *extremely* poor.[25] Reducing poverty entails more than just delivering services; it requires addressing longstanding injustices, dispossession, and discrimination endured over many years.

The case study of the Yanadi and Yrukala tribes, two of India's Scheduled Tribes living in Andhra Pradesh State, shows how the

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[22] RRI (2016). *Toward a Global Baseline of Carbon Storage in Collective Lands.* Rights and Resources Institute (RRI). https://rightsandresources.org/wp-content/uploads/2016/10/Toward-a-Global-Baseline-of-Carbon-Storage-in-Collective-Lands-November-2016-RRI-WHRC-WRI-report.pdf

[23] Ibid.

[24] James, Arach David (2023). *Beyond Land Titles: Pastoralists Find Security Amid Climate Change in Community Land Governance Mechanisms in Kenya.* Namati-Kenya.

[25] UN DPI (2010). Indigenous Peoples Poverty and Well-Being. HYPERLINK "http://www.un.org/esa/socdev/unpfii/%20documents/SOWIP/chapter%20highlights/chapter%201/sowip-ch1-en.pdf"http://www.un.org/esa/socdev/unpfii/ documents/SOWIP/chapter%20highlights/chapter%201/sowip-ch1-en.pdf

impact of land tenure insecurity amid climate change is magnified among people who are extremely poor, have limited livelihood opportunities, lack education, and whose recovery from climate disasters relies on the charity of strangers. At the same time, this story underlies the critical role of civil society organizations, where government support is insufficient and slow.[26]

Climate change from the lens of human rights

In an earlier resolution 7/23, the UN Human Rights Council had stated that climate change "poses an immediate and far-reaching threat to people and communities around the world and **[climate change] has implications for the full enjoyment of human rights.**"

Communities lose their habitats, homes, and livelihoods. Displaced persons suffer from economic vulnerability, social exclusion, and sometimes even the loss of their ethnic and cultural identities. Furthermore, climate change threatens the full range of human rights: the right to life, safety, self-determination, development, health, food, water, adequate housing, and cultural rights.[27]

And **while climate change affects people everywhere, those who have contributed the least to GHG emissions (i.e., the poor, children, and future generations) are those most affected.**

According to Oxfam and the Stockholm Environment Institute, the richest 10 percent of the world's population was responsible for more than half of the cumulative carbon emissions from 1990 to 2015, whereas the poorest half was responsible for (only) seven percent in the same period.[28]

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[26] Reddy, Rohini (2023). *Tribal Communities Fight to Lift the Yoke of Landlessness Amid Climate Change: A Case Study of the Yanadi and Yrukula Tribal Communities in Andhra Pradesh State, India.* SARRA.
[27] EJF (2022). *In Search of Justice: How the climate crisis is driving inequality and eroding human rights.* London: Environmental Justice Foundation. https://ejfoundation.org/resources/downloads/EJF-Climate-Inequality-report-2021.pdf
[28] Ibid.

GHGs can remain in the atmosphere for decades, and they therefore have a cumulative effect.[29] Thus, the world is only now experiencing the effects of GHGs that have accumulated in the atmosphere over the past several decades. And even if the world were to stop or minimize human-caused GHG emissions today, the effects of climate change will continue to linger for years.

Thus, States and entities that are primarily responsible for GHG emissions which bring about climate change should compensate the losses and damages inflicted on poor people, communities and States.

Also, **the global community has an obligation to protect and address the rights and welfare of persons affected and displaced by the impacts of climate change.** This task should not be left as the sole obligation of States where such displacements occur.

The face of climate change

Until today, much of climate change discussions have remained under the exclusive realm of scientists and governments.

Climate change is often discussed and presented in the form of graphs, maps, tables, and projections. We have failed to translate scientific findings into an equally compelling vision of how the consequences of global warming are being felt by people and communities around the world.[30]

We were always taught to "think globally, and to act locally". However, today, the reverse message is equally compelling. We need to **think locally, and act globally.**

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[29] Nunez, Christina. "Carbon dioxide levels are at a record high. Here's what you need to know." *National Geographic website.* https://www.nationalgeographic.com/environment/article/greenhouse-gases. Accessed 07 October 2023.
[30] Limon, M. (2009). Human Rights and Climate Change: Constructing a Case for Political Action. *Harvard Environmental Law Review,* vol 33, pp. 439-476.

Those most vulnerable to climate change – small farmers, indigenous peoples, local communities, women, and the poor and marginalized communities — should have the right to play a key role in the selection, evaluation, implementation, and monitoring of policy instruments for land-based climate adaptation and mitigation.

People who have historically been marginalized and unfairly treated as "victims" or "burdens on society" must be seen as crucial partners in the fight against climate change. A climate strategy grounded on human rights means safeguarding the most vulnerable, meeting their needs, and enabling them to strengthen their resilience. Those hardest hit by climate change deserve genuine and informed participation in decisions that affect their rights and very survival.

There is need to humanize the discussions on climate change. Furthermore, it is not enough to call for action to save humanity from climate disasters. We must give humanity an actual face — that of the rural poor — farmers and farm workers, fishers, women, indigenous communities, rural youth — who are the first and worst victims of climate change.

Only then will climate discussions be informed by the vulnerabilities facing millions of people in the world. Land tenure security must be central to these discussions and prioritized in strategies, policies, and programs to ensure the survival and resilience of those most at-risk to climate change. ■

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The convergence of climate impacts on Bangladesh and the need for more climate-responsive land tenure administration

Prepared for ALRD by Gazi Mohammad Suhrawardy, Coordinator, Centre for Knowledge (CfK), advised by Rowshan Jahan Moni, and with the assistance of A.K.M. Bulbul Ahmed and Sanjida Khan Ripa of ALRD

Bangladesh, which is located in the low-lying Ganges-Brahmaputra-Meghna (GBM) Delta, is high on the list of countries that are most vulnerable to climate change. It ranked seventh on the 2021 World Climate Risk Index (MoEFCC, 2022).[1]

Changing climatic patterns, including increased frequency of floods, cyclones, and droughts, threaten the productivity of agriculture, which employs a large portion of the country's labor force. Rising sea levels lead to saltwater intrusion, which damages arable land. Small-scale farmers are particularly vulnerable because they lack the resources to adapt to changing conditions and to recover from income loss due to crop failures (Islam and Uddin, 2020).

[1] ANGOC and Land Watch Asia (2021) in their paper "No Time to Waste: Climate action through secure land rights and sustainable land use" has noted that in an earlier Resolution 7/23, the Human Rights Council had stated that climate change "poses an immediate and far-reaching threat to people and communities around the world and [climate change] has implications for the full enjoyment of human rights." In this context, it is noteworthy to cite the comment made by the renowned Canadian author, social activist, and filmmaker Naomi Klein, who succinctly expressed the idea that "Our economic system and our planetary system are currently engaged in a conflict" (p. 21 in her book "This Changes Everything: Capitalism vs. The Climate").

This country overview paper offers a perspective overview of climate change and land tenure rights in Bangladesh. It provides a review and analysis of how the official climate responses and those of other stakeholders impact on the land tenure, use and rights of people. Lastly, it discusses the emergent impacts/implications of climate change on land tenure rights, land use systems and governance.

In undertaking the above discussions, the paper has brought into particular focus the socio-economic issues of poor, marginalized, and at-risk sectors.

This paper is not based on any comprehensive study, but rather it is a compilation of relevant information gathered through some structured interviews. The results of these interviews have been validated by 26 civil society organization (CSO) activists (four females and 22 males) through an online workshop organized by ALRD on 3 September 2023. This paper incorporates the inputs generated from the rich exchange of ideas by the participants.

River flooding and riverbank erosion are prevalent in various parts of the country (Elahi et al., 1990). Erosion causes the loss of around 8,700 hectares of homestead property and cultivable land and the displacement of about 200,000 persons every year (CEGIS, 2012; GoB, 2010).

Sea-level rise and cyclonic storms regularly threaten Bangladesh's coastal areas. Low-lying coastal regions, such as the Sundarbans mangrove forest, are at risk of erosion and inundation. This poses a threat to local communities, who face displacement, loss of livelihoods, and increased vulnerability to natural disasters. Fisherfolk and marginalized communities living in these areas are particularly susceptible to climate impacts (Kabir and Endlicher, 2012).

The country is crisscrossed by numerous rivers, making it susceptible to both flooding and water scarcity. Climate change exacerbates these

challenges by bringing more frequent and intense floods and prolonged dry spells. This impacts on water availability for irrigation, drinking, and sanitation, putting vulnerable communities at risk of waterborne diseases and food insecurity (Ahmed et al., 2018).

Rapid urbanization in Bangladesh has led to increased vulnerability in cities and towns. Poor infrastructure, inadequate housing, and improper waste management exacerbate the impacts of climate change. Urban areas face challenges such as the urban heat island effect, waterlogging during heavy rains, and increased vulnerability to cyclones and storm surges. Slum dwellers and low-income communities are at higher risk due to their limited access to resources and services (Rahman and Huq, 2019).

Impacts of climate change crisis on people

Bangladesh is grappling with the adverse effects of rising sea levels caused by global warming. The country's flat and low-lying geography makes it highly susceptible to tidal surges and storm surges. As a result, coastal erosion and salinization of arable land have become significant concerns. Sea levels are predicted to rise by 1.5 meters by the end of the century and by 2050, about 17 percent of the country could be permanently submerged if global warming continues at its current pace, threatening the livelihoods and homes of millions of people in coastal areas (IPCC, 2019).

Climate change is exacerbating the intensity and frequency of the cyclones experienced by Bangladesh. These cyclones, coupled with rising sea levels, have had devastating effects on coastal communities. In 2020, Cyclone Amphan caused extensive damage to infrastructure, agriculture, and fisheries, displacing millions of people and causing significant loss of life (TIB, 2020). The impacts of such extreme weather events are projected to worsen in the coming years, further affecting lives and livelihoods.

Rising temperatures contribute to the formation of more intense cyclones, causing widespread devastation in coastal regions. In recent years, the frequency of intense weather events, including floods, has increased, displacing millions of people, damaging infrastructure, and disrupting agricultural activities (Ahmed and Neelormi, 2020).
On the other extreme, climate change also leads to longer dry seasons, which reduce the availability of water for irrigation. This results in lower agricultural productivity, causes crop failures, and worsens food insecurity.

Rising temperatures contribute to the spread of heat-related illnesses as well as waterborne diseases. Increased flooding and stagnant water create breeding grounds for disease-carrying mosquitoes. Displacement and overcrowding resulting from climate-induced events make communities more disposed to respiratory infections and malnutrition. The consequential health crises put a strain on the already overburdened healthcare system, leading to increased mortality and morbidity rates.

Impacts of climate change crisis on land

One of the most visible and alarming impacts of climate change on land are rising sea levels. According to a study conducted by the Intergovernmental Panel on Climate Change (IPCC), a rise of one meter rise in sea levels could lead to the displacement of around 17 million people in Bangladesh by 2050.

Coastal erosion is another major consequence of climate change in Bangladesh. Rising sea levels intensify the erosive power of waves, leading to the gradual retreat of coastlines. As a result, agricultural lands and human settlements are being lost to the sea at an alarming rate (Nessa and Hasnat, 2017).

In addition to coastal areas, climate change is also impacting the availability and quality of land for agriculture. Unpredictable rainfall patterns, prolonged droughts, and increased frequency of extreme

weather events, such as floods and cyclones, have disrupted the agricultural calendar and reduced crop yields. According to a report by the Asian Development Bank (ADB), climate change could reduce Bangladesh's agricultural productivity by up to 30 percent by 2050 (ADB, 2013).

Furthermore, the intrusion of saltwater into freshwater sources, such as rivers and underground aquifers, is a significant concern in Bangladesh. As sea levels rise, saltwater intrusion contaminates freshwater supplies, rendering them unfit for human consumption and agricultural use. This phenomenon not only reduces the availability of clean drinking water but also undermines the sustainability of agricultural practices, exacerbating food insecurity in the country.

Salinity impacts on land

Increased soil salinity is one of the major impacts of climate change on land in Bangladesh. When low-lying coastal areas are submerged, seawater flows into coastal rivers and groundwater aquifers. Over the last five decades, as freshwater flow tapered off on the upper stream of rivers, salinity has intruded into more than 100 rivers and affected over one-fifth of the country's total crop land located in the south-western coastal districts. Salinity affects an average of over 6,200 hectares of farmland every year. In some areas, the salinity level is as high as 25 ppt, which means that there are 25 grams of salt dissolved in one kilogram of soil or water. No crops will grow on such salt intruded land at any time of the year.

In Satkhira district, the mouths of the two distributaries of the Ganges – the Mathabhanga and the Jalangi – have been totally filled up by salt water. Satkhira does not get any freshwater supply from upstream basins. Salinity decreases the terminative energy and germination rate of some plants. Rice production in a village of Satkhira declined by 1,151 metric tons in the period of 1985 to 2003, or a crop loss of 69 percent.

Source: *Suhrawardy and Anisha (2022)*

The impacts of climate change on land also have far-reaching consequences for biodiversity and ecosystems. Rising sea levels, increased salinity, and extreme weather events pose a severe threat to the unique biodiversity of the fragile ecosystem of the Sundarbans, including endangered species such as the Royal Bengal Tiger and the Irrawaddy Dolphin.

Impacts of climate change crisis on water

Climate change has intensified the occurrence and severity of floods. These floods contaminate water sources, and damage water infrastructure. At the same time, rising sea levels caused by the melting of glaciers and by the thermal expansion of seawater have resulted in the intrusion of saltwater into aquifers and surface water bodies in the coastal regions. Saltwater intrusion contaminates freshwater supplies, rendering them unfit for human consumption and for agricultural use. This not only reduces the availability of clean drinking water but also undermines the sustainability of agricultural practices, exacerbating food insecurity in the country.

Climate change-induced droughts and prolonged dry spells have also reduced the availability of water for household and agricultural use. As a result, communities are finding it increasingly difficult to source safe drinking water. Irrigation systems for agriculture cannot be maintained, leading to crop failure (Ahmed et al., 2018).

At the same time, contaminated water sources, poor sanitation, and limited access to clean water are increasing the risk of waterborne illnesses, such as dengue fever. As of 13 September 2023, 767 people have died from dengue fever, and 157,172 persons have been hospitalized because of it.

In addition, the forced migration of people from rural to urban areas is putting a strain on water systems and infrastructure in urban centers, causing a water crisis there (Anisha and Sharif, 2017).

Climate change impacts on displacement and migration

The frequency and intensity of natural disasters have increased over the past few decades and resulted in the displacement of millions of people in the country (UNDP, 2018). For instance, Cyclone Sidr in 2007 affected approximately 8.9 million people and caused the displacement of over two million individuals (WB, 2011). The Stern Review Report on Economics of Climate Change predicts that one in every seven persons in Bangladesh, i.e., about 22.8 million people, will be displaced by 2050 due to the impacts of climate change (Stern, 2007).

Many displaced individuals often end up in overcrowded urban slums or temporary camps, where they have no access to basic services, such as clean water, sanitation, and healthcare (IOM, 2020). They suffer from poverty, food insecurity, and limited access to education and healthcare services (Haque, 2018). The concentration of displaced individuals in urban areas causes increased waste generation, deforestation, and pollution. The strain on urban areas hosting displaced populations can lead to increased competition for limited resources, social tensions, and conflict.

In addition to internal displacement, climate change has also led to cross-border migration from Bangladesh. Unable to sustain themselves in their home regions, many are compelled to migrate to other countries in search of better opportunities. This has led to a rise in irregular migration, with individuals taking risky and often unsafe routes to reach destinations such as Southeast Asia and beyond.

Climate change impacts on land tenure and on groups with vulnerable land tenure

As sea levels rise, coastal areas are being submerged. Communities are either forcibly displaced or opt to leave their homes because their lands have been rendered unfit for cultivation by erosion or salinity intrusion. As displaced people relocate and seek other land to settle in,

conflicts over land rights arise in the new settlement areas (Rahman and Sikder, 2021). The existing land tenure systems are ill-equipped to handle such large-scale displacements and land disputes.

Indigenous communities in Bangladesh are often marginalized and face unique challenges related to climate change (Sarker and Alam, 2022). These communities have traditional knowledge and practices that are closely linked to their natural environment. However, changing weather patterns and environmental degradation threaten their way of life, including the loss of traditional livelihoods like agriculture, fishing, and collecting resources from nature, etc. For example, as the Sundarbans are progressively destroyed by salinity, the forest-based livelihoods of the Munda and other indigenous communities are put at risk. Additionally, infrastructure development projects often result in land grabbing of ancestral domains and in the displacement of indigenous communities.

Women in Bangladesh face specific vulnerabilities related to climate change. Traditional gender roles often limit their access to resources and decision-making processes (Suhrawardy et al., 2022). Disasters and climate impacts disproportionately affect women: their water collection responsibilities increase; they are likely to stop going to school; their access to health care is limited; and, their risks for pregnancy and childbirth related complications are compounded. The reduced amount and quality of land following salinity intrusion also narrows access by coastal women, in particular, to inherited land, purchased and leased-in land, *khas* (government-owned) land, community land, etc.

Landless farmers and agricultural laborers, who depend on farm work on other people's fields to earn a living, are at significant risk. Climate change-induced crop failures and agricultural losses directly impact their income and food security. Landless farmers and agricultural laborers who are displaced by erosion are constrained to abandon farming. Unfortunately, they often lack access to alternative livelihood options, thus intensifying their vulnerability (Ali and Hossain, 2017).

Climate change impacts on land conflicts and land governance systems

Bangladesh, with its dense population and limited land resources, has long grappled with land disputes and conflicts (Barkat and Suhrawardy, 2018). The country's vulnerability to climate change further intensifies these clashes.

Communities affected by saltwater intrusion, erosion, and inundation migrate inland and compete for scarce resources, including land.

The competition for fertile land between these displaced farmers and local communities often results in conflicts and disputes, further aggravating the already strained land tenure system in the country (Hassan and Uddin, 2018).

Urban areas are also impacted when rural populations migrate to the cities in search of non-farm work following climate change-induced natural disasters and environmental degradation. Informal settlements swell and the incidence of unauthorized land occupation skyrockets. Internal migrants inevitably come into conflict with existing communities and with local authorities (Islam and Takagaki, 2019).

The impacts of climate change on land conflicts in Bangladesh are further exacerbated by inadequate land governance systems and weak institutions. The country's land administration is characterized by complexities, overlapping jurisdictions, and a lack of transparency, all of which create fertile ground for disputes (Barkat et al., 2022). Moreover, corruption and the manipulation of land records add to the challenges faced by those affected by climate change-induced land conflicts. The absence of clear guidelines for land acquisition and resettlement, particularly in the context of climate-induced displacements, further contributes to the land conflict dynamics (Islam and Anik, 2019).

Displaced communities, as well as those who have lost their land due to erosion or salinity intrusion, often face difficulties in reclaiming their

rights. The existing land governance systems struggle to address these conflicts, resulting in prolonged legal battles and uncertainty regarding land ownership. The lack of clear and transparent land records and inadequate mechanisms for resolving disputes further compounds the challenges faced by vulnerable populations (Rasheed and Rahman, 2021).

Climate change also brings about changes in land use patterns, as certain areas become unsuitable for agriculture or habitation. In response to these changes, people may engage in adaptive strategies, such as shifting to non-agricultural livelihoods. However, these shifts in land use can disrupt the traditional land governance systems, as new land uses may not be adequately regulated or recognized under existing laws and policies. This poses governance challenges and may lead to conflicts over land use rights and allocation.

Impacts of climate responses of authorities on tenure rights

As the impacts of climate change intensify, various responses and approaches have been implemented by public authorities and key stakeholders to address the challenges faced by communities. The government has developed the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) and established the Bangladesh Climate Change Trust Fund (BCCTF) to implement adaptation and mitigation measures. In the last 12 years (from 2010 to 2022), a total of 468 projects have been implemented under the BCCTF.[2] The BCCSAP focuses on areas such as disaster management, agriculture, water resources, and health. Additionally, community-based adaptation projects, such as the Coastal Climate Resilient Infrastructure Project

[2] In recent disasters, including super cyclone Amphan, 29.5 million coastal people were impacted, resulting in 3,757 deaths and significant property loss. Cyclone Amphan, categorized as a Super Cyclone by the Bangladesh Meteorological Department, struck the coastal areas on 20 May 2020, with wind speeds of 240 to 250 kilometers per hour and 10 to 16 feet (three to 4.8 meters) tidal surges. It was identified as the most devastating cyclone in the past 20 years. The Sundarbans, a natural shield against cyclones, and its ecosystem suffered severe damage. Deficits in governance hinder efforts to reduce disaster losses and ensure disaster preparedness sustainability.

(CCRIP), have been implemented to protect vulnerable communities from climate-related hazards.

In some cases, the implementation of adaptation projects and infrastructure development has led to conflicts over land and resources, potentially undermining the tenure rights of local communities. The construction of embankments and other protective structures may encroach on agricultural lands or restrict access to fisheries, affecting the livelihoods of vulnerable communities. One clear example is the construction of an embankment in Beel Dakatia (situated on the border of Jashore and Khulna), which caused permanent waterlogging and encroachment of adjacent agricultural land, thus affecting the livelihoods of the vulnerable communities (Adnan, 2023). This case demonstrates the need for comprehensive land-use planning which considers the rights and interests of affected communities, particularly those with insecure tenure.

Government initiatives for disaster rehabilitation, such as the Ashrayan project,[3] distribution of *khas* land, shelter assistance, among others, are not so focused on the tenure security of climate-displaced people. On the other hand, people displaced by climate change emphasize the need to take *dakhal*, or possession of the land, as a critical factor in securing land ownership in their new settlement areas (ALRD, 2021).

Other key stakeholders, including civil society organizations (CSOs), non-governmental organizations (NGOs), and local communities, play a crucial role in shaping climate responses (BCCT, 2023) and influencing tenure rights. Many stakeholders have advocated for participatory decision-making processes that ensure the inclusion of affected communities in climate planning and implementation. These

[3] The Ashrayan Project was first introduced in 1997 by the Sheikh Hasina-led government in Bangladesh, due to the aftermath of a tornado in coastal areas, as a small pilot entirely funded by the State to rehabilitate distressed people. "Ashrayan" stands for "to provide shelter" or "to arrange habitation." This small pilot project gradually turned into a large-scale priority project of the government in order to provide shelter to the homeless and landless people and eventually make them independent to contribute to the national economy.

organizations have also facilitated the creation of community-based organizations (CBOs) and platforms that empower local communities to assert their tenure rights and participate in climate adaptation initiatives.

Impacts of climate responses on changes in legal framework and reforms

To address climate change challenges, Bangladesh has undertaken several climate responses and approaches within its legal framework and reforms. The BCCSAP, launched in 2009, provides a comprehensive framework for climate change adaptation and mitigation in the country. It identifies key sectors that are vulnerable to climate change, such as agriculture, water resources, and infrastructure, and outlines strategies and actions to address the impact of climate change. The BCCSAP has played a crucial role in guiding policy decisions and resource allocation, and has been credited with positive impacts on various fronts (BCCT, 2019).

The BCCT, which was established by the Bangladesh Climate Change Trust Act of 2010, is an autonomous body responsible for financing climate change projects. The BCCT has been instrumental in mobilizing funds for climate change adaptation and mitigation activities. Additionally, the Bangladesh Climate Change Strategy and Action Plan Implementation Project (BCCSAPIP) and the Climate Change Trust Fund (CCTF) have been put in place to support the implementation of climate change projects (GoB, 2021). These legal measures have facilitated the mobilization of resources and the implementation of climate actions.

To address the increasing frequency and intensity of natural disasters due to climate change, the government has focused on strengthening disaster management capabilities. The Disaster Management Act of 2012 provides a legal framework for disaster risk reduction and emergency response. It establishes the roles and responsibilities of

various government agencies and promotes community participation in disaster preparedness and response (GoB, 2012). These efforts have improved early warning systems, evacuation procedures, and emergency response mechanisms. These have reduced to some degree, but not by enough, the loss of life and property during disasters.

The National Adaptation Programme of Action (NAPA) of 2005 — last updated in 2009, encourages the participation of vulnerable communities in identifying and implementing adaptation measures. The government has also initiated the CCTF's Community-Based Adaptation project, which provides financial support to community-led initiatives (GoB, 2020). These community-based adaptation efforts have increased the resilience of vulnerable communities, improved livelihoods, and enhanced local decision-making processes.

To reduce greenhouse gas emissions (GHGs) and dependence on fossil fuels, Bangladesh has prioritized the promotion of renewable energy sources, at least in policy and official statements. The government has, on a limited scale, implemented policies and incentives to encourage the development of solar, wind, and hydropower projects. The Renewable Energy Policy of 2008 and its subsequent amendments have facilitated private sector investments in renewable energy (GoB, 2020); but not to the optimal extent. Meanwhile, the government itself engages in life-nature-destroying coal-based electricity projects in Rampal, Paira, Matar Bari, Bashkhali, etc.

Impacts of climate responses on land administration and management systems

The government has implemented initiatives to address land administration challenges, such as the blurring of boundaries following sea-level rise and coastal erosion. One such initiative is the Coastal Zone Policy, which aims to regulate land use along the coast (MoL, 2019).

The government has also undertaken the construction of embankments and flood shelters, as well as the establishment of the Flood Action Plan (FAP) and the Coastal Embankment Project. Changing climatic conditions have led to shifts in agricultural patterns in Bangladesh. Traditional crops are becoming less viable, while new crops and farming practices are being adopted. This transition requires adjustments in land administration systems to accommodate changing land use and to ensure secure land tenure for farmers. Government programs such as the Climate Resilient Agriculture Project and the Crop Diversification Program aim to support farmers in adapting to these changes (MoA, 2020).

The government has acknowledged that integrated land use planning and effective urban governance are essential to address the challenges created by increasing rural to urban migration, such as burgeoning informal settlements and encroachments on public and private land. Thus, it has taken steps to enhance urban land administration systems through initiatives like the Detailed Area Plan (DAP) and the City Region Development Project.

The government recognizes that forests play a crucial role in climate change mitigation by sequestering carbon dioxide. Bangladesh has undertaken afforestation and forest management initiatives, such as the National Forest Policy and the Social Forestry Program, to increase forest cover and enhance ecosystem services (MoEFCC, 2016). Effective land administration and management systems are critical for the success of these initiatives, ensuring sustainable forest management, community participation, and protection of forest land from encroachment.

Just as importantly, community-based adaptation approaches empower local communities to address climate change impacts and enhance their resilience (Rahman and Rahman, 2019). In Bangladesh, community-based approaches have been implemented through projects like the Community Climate Change Project and the Climate Resilient Community Development Program. These initiatives require

robust land administration systems (which rarely exist) to support community land rights, manage conflicts, and facilitate collective decision-making.

Emerging debates on key climate responses and approaches

The debates surrounding climate responses and approaches highlight the importance of inclusive decision-making, adequate resource allocation, and innovative solutions. The authorities and key stakeholders in the country have been actively engaging in these debates, striving to strike a balance between adaptation and mitigation, equity, and sustainability.

One of the key debates in Bangladesh revolves around the development of climate-resilient infrastructure. As the country experiences more frequent and intense cyclones and floods, there is a growing need to construct infrastructure that can withstand these extreme events. The government, in collaboration with international organizations, has launched several initiatives to enhance the resilience of critical infrastructure, including roads, bridges, and buildings. For example, the CCRIP focuses on building climate-resilient infrastructure, including embankments and drainage systems, to protect coastal communities from storm surges and flooding. However, debates have arisen regarding the adequacy of measures taken, the allocation of resources, and the inclusion of vulnerable communities in decision-making processes (ADB, 2020).

Adaptation and resilience-building strategies play a crucial role in reducing the vulnerability of communities and ecosystems to climate change impacts. Bangladesh has been at the forefront of implementing such measures, including early warning systems, community-based adaptation projects, and climate-smart agriculture. Nevertheless, questions remain pertaining to the effectiveness of these approaches and the need for enhanced coordination among stakeholders. Additionally, there is an ongoing discussion on the importance of integrating traditional knowledge systems with modern scientific

approaches to ensure sustainable and locally appropriate adaptation measures (Huq et al., 2021).

Bangladesh has been actively engaging with international financial institutions (IFIs) and developed countries to secure adequate funding for its climate initiatives. However, issues such as the fairness of global climate finance mechanisms, the prioritization of adaptation over mitigation, and the allocation of funds among different sectors, are still being debated. The government, alongside key stakeholders, continues to advocate for increased financial support to implement comprehensive climate actions (Rahman et al., 2020).

In a civil society-organized workshop, the activists highly criticized official climate actions because of their inadequacy, ineffectiveness and sometimes anti-people outcomes. The funds for climate actions are not just regarded as "insufficient" but are also reportedly misappropriated. Both the quantity and quality of expenditure on climate actions are sub-optimal and sub-standard, ultimately resulting in a prevalent deficit in climate governance.

To mitigate GHGs and reduce reliance on fossil fuels, Bangladesh has made progress in expanding its renewable energy capacity, particularly through solar home systems and wind power projects. However, debates persist regarding the pace of the transition, policy incentives for renewable energy investments, and the integration of decentralized energy solutions. Stakeholders emphasize the need for a just energy transition that addresses social equity and ensures access to clean energy for all (ADB, 2021).

The urban areas of Bangladesh are particularly vulnerable to climate change impacts due to rapid urbanization and inadequate urban planning. The debates in this context revolve around integrating climate resilience into urban planning processes, ensuring affordable housing for vulnerable communities, and managing urban water resources effectively. Authorities and stakeholders are exploring innovative solutions, such as nature-based urban design and green

infrastructure, to enhance urban resilience. However, challenges remain in terms of implementation and institutional coordination (Rahman et al., 2021).

Entry points and opportunities for pursuing discussions on climate change and land tenure issues

Climate change and land tenure issues are intertwined in Bangladesh, and addressing them in an integrated manner is crucial for sustainable development. The policy and legal frameworks, community-based adaptation approaches, gender considerations, and knowledge exchange platforms, among others, offer entry points and opportunities for pursuing discussions on climate change and land tenure.

Bangladesh has made significant strides in developing policy and legal frameworks to address climate change and land tenure. The country's National Adaptation Plan (NAP) focuses on building resilience and adaptive capacity to climate change, including the protection of vulnerable communities' land rights. The NAP acknowledges the need for land tenure security as a foundation for climate resilience and emphasizes the involvement of local communities in decision-making processes. The National Land Use Policy emphasizes sustainable land use practices, while the National Land Policy aims to ensure equitable distribution of land resources (GoB, 2017). These policies provide a foundation for integrating climate change considerations into land tenure practices.

Community-based adaptation (CBA) and resilience-building approaches provide entry points for addressing climate change and land tenure issues. CBA initiatives empower local communities to identify their vulnerabilities, develop adaptation strategies, and strengthen their resilience. Land tenure is a crucial aspect of CBA, as secure land rights enable communities to make long-term investments in adaptation measures. The CCRIP incorporates land tenure considerations by ensuring the involvement of local communities in

decision-making processes and recognizing their land rights. Such community-led initiatives offer opportunities for engaging in discussions on climate change and land tenure at the grassroots level.

Gender considerations are essential in discussions on climate change and land tenure. Women in Bangladesh are disproportionately affected by climate change impacts, as they often face greater vulnerability due to socio-cultural factors and limited access to resources. Land tenure issues intersect with gender, as women's land rights are often marginalized or overlooked. Engaging women in decision-making processes and strengthening their land rights can contribute to more sustainable and equitable climate change responses. Initiatives such as the Homestead Food Production Program (HFPP) in Bangladesh have recognized the importance of women's land rights and their role in climate adaptation. Integrating gender considerations into climate change and land tenure discussions can unlock opportunities for addressing inequalities and building resilience (UNDP, 2019).

Knowledge exchange and capacity-building play a vital role in pursuing discussions on climate change and land tenure in Bangladesh. Stakeholders, including government agencies, CSOs, researchers, and communities, should engage in dialogue to share experiences, lessons learned, and best practices. Platforms for knowledge exchange can foster collaboration and enable the integration of climate change and land tenure considerations into policies and practices. Capacity-building initiatives should focus on enhancing the understanding of climate change impacts on land tenure, improving land governance, and promoting sustainable land management practices. These initiatives can empower stakeholders to engage in informed discussions and make evidence-based decisions. ■

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CASE STUDY

THEME 1:
Women, land rights and resiliency

How women's rights, especially over land, improves the capacities of families and communities to implement resilience actions

Home is where climate resilience should be built

A case study of climate resilience in the indigenous Munda community in the southwestern coastal area of Bangladesh

Prepared by A.K.M. Bulbul Ahmed, Association for Land Reform and Development (ALRD)

The Munda people are one of the 45 indigenous (*Adivasi*) peoples in Bangladesh. Residing in Shyamnagar *upazila* (sub-district) of Satkhira district, the Munda community has lived beside the Sundarbans — the world's largest mangrove forest – for over two centuries. They have traditionally made their living from the forest — harvesting honey, catching fish, prawns, and crabs in the forest and surrounding rivers and channels, and collecting other forest products.

This case study focuses on the Munda community in Datinakhali village of Burigoalini union in Shyamnagar sub-district.

Shyamnagar sub-district is home to 450 Munda families,[1] of whom 148 families are landless. Many members of the community are considered as poor, earning less than 100 US Dollars per month. Having no land

[1] Sundarban Adibashi Munda Sangstha was formed in 2003 to improve the welfare of the Munda and "to bring them into mainstream development" (SAMS, n.a.).

Key Messages

- The Government of Bangladesh has not yet recognized the indigenous peoples' traditional knowledge, customs on conservation, nor their right to govern and conserve the Sundarbans — the home of the Munda people.
- To improve their livelihood resilience, the Munda people maintained that land tenure security is indispensable. They proposed a special policy initiative for land-based resilience building among the community.
- The current policy on agricultural *khas* land distribution among the landless can address the land rights deprivation of Munda women. If they are granted land, either individually or jointly with their husband, Munda woman are capable of sustainably using and managing it.
- In consultations with the Munda community, they expressed what is necessary to achieve resilience. They all agreed that migration is not a sustainable solution for them, because their culture and livelihoods are closely linked to the Sundarbans. To improve their livelihood resilience, they all affirmed that land tenure security is indispensable.
- The Munda community demands their participation in any decision-making that concerns them. The top-down approach, along with the corruption and insensitivity, has undermined ongoing projects and activities that are supposed to enhance their resilience. The community said that the scenario would be much better if they could take the lead.

of their own, Munda families live in geographically vulnerable areas such as coastal embankments.

Seventy percent of Munda men rely on fishing, catching mud crab, and harvesting honey for their livelihood.[2] However, restrictions imposed by the Forest Department have prohibited them from making a living in the Sundarbans, thus forcing them to make a living in other ways, such as by working as daily wage workers.

Since 1971, the Munda community has experienced extreme weather events, such as drought in 1974, and successive cyclones from 1988 to 2009. Tropical Cyclone Sidr, which hit Bangladesh in 2007, resulted in one of the worst natural disasters in the country. Then, just two years later, in 2009, another severe cyclonic storm, Aila, caused equally extensive damage in the country.

[2] As reported in a focus group discussion organized by the Association for Land Reform and Development (ALRD) in 2022.

After a disaster: No land to fall back on

Cyclone Aila made its first landfall in the Shyamnagar sub-district, wiping out the homes of more than 34,000 people, or almost 12 percent of the population of the sub-district. Of those rendered homeless, 600 people, or 40 percent, belonged to the Munda community.

Months later, as many as 28,000 people were still staying in makeshift tents or near embankments. In addition, 359.55 square kilometers of land were completely inundated by surge water. This was particularly damaging because the vast majority of the population was engaged in agriculture and fisheries, such as shrimp culture (Baten and Kumar, 2010).

While prawn farming had been predominant in the area, a few villages in the Shyamnagar sub-district had been engaged exclusively in paddy farming. In the aftermath of Aila, the increased salinity of the soil and the groundwater reduced crop yields. According to community members, fluctuating rainfall patterns also became a problem for rice farmers.

The Sundarbans became off-limits to people who had traditionally depended on forest products for a living. But while forest officials restricted access by poor communities, other people were allowed to enter and exploit the forest resources by bribing middlemen.

At the same time, excess salinity had begun to degrade the biodiversity of the Sundarbans. While mangrove trees like Sundori, Keora, and Hogla grow in saline water, the excessive salinity and logging of saline water are choking them. The trees are dying and their number is falling. Native fish species are also growing extinct (Rezoyana, U., et al., 2018).

In Datinakhali village, in particular, Cyclones Sidr and Aila swept away all houses and properties. Many shrimp and soft-shell crab farms that used to dominate the landscape of the village were wiped out. Livestock, such as cows, goats, and chickens, became a rarity. According to members of the community, the high salinity of farmlands

following the cyclones affected the growth and quality of livestock. Thus, following Tropical Cyclone Aila, eight Munda families left Datinakhali village and migrated to other places.

Disasters take a toll on a community's cultural traditions

The Munda rituals and festivities are integral to the lives of the agrarian communities in Bangladesh's coastal districts. However, changes in land-use patterns due to increased land and water salinity and sea-level rise have led to a sharp decline of such traditions.

An elderly member of the Munda community in the village of Datinakhali, in Burigoalini union of Shyamnagar upazila, relates, *"When we cultivated rice, we used to hold celebrations and festivities to appease the deities. Now that we have no land to grow rice on, these ceremonies have lost their importance."*

The practice of *Puja* — a Hindu ritual that involves offering flowers, light, fruits, and water to help reduce anxiety (Garai, 2017) — has been affected by challenges to growing flowers and fruit trees. Rats, snails, and frogs from agricultural fields are cultural foods for the Munda people. However, due to shrinking agricultural lands in both unions [Burigoalini and Gabura], the Munda people now have to travel to other places to collect them. They also used to sacrifice hens, but because they can no longer raise these in the adverse conditions in their community, they now have to buy them at the market. However, the hens on sale are not always the correct color for the religious/cultural ritual. Moreover, one community member relates that another festival is no longer observed because the designated place for it had been lost to riverbank erosion.

Krishnapada Munda, executive director of Sundarban Adivasi Munda Sangsha (SAMS), shares that before cyclone Aila, they used to celebrate the "Karam" festival, one of the biggest celebrations of the Munda community. However, after the cyclone, that festivity can no longer be observed because the central element of the celeberation, the Karam tree, is now nowhere to be found in the community. The last Karam tree was uprooted during the tidal surge caused by Cyclone Aila. Thus, today, if any of the Munda people want to celebrate this festival, they will have to travel for hours to reach the Northern part of the country where the Karam tree still stands. This is an expensive journey that few Munda people can afford.

Responses by the community

Agricultural households often adopt various disaster-response strategies to reduce the impact of climate change on their livelihood, such as diversifying their income sources, changing cropping practices, and crop diversification (McLeman, 2014). The coastal communities affected by Cyclone Aila were encouraged to adapt to climate change or to reduce their vulnerability to natural disasters by, among others, shifting to saline water-tolerant crops and diversifying into vegetables, such as eggplant and spinach that do not require major irrigation systems (Rabbani, et al., as cited in Subhani and Ahmad, 2019). Other adaptation strategies included growing vegetables on Mud Towers and dams; cultivating saline-tolerant vegetables around the shrimp ponds; using recycled household water for irrigation and vegetable production; installing Pond Sand Filters to filter water; rainwater harvesting; rearing livestock in other parts of Shyamnagar; and, forestation in the islands.

Following Cyclone Aila, eight Munda families migrated to other places. Most of them found refuge in a CSO-led shelter initiative in the Tala sub-district of Satkhira, while the rest stayed in a government-shelter barrack located in a village far from the Sundarbans. Each of the migrant families received a piece of land with built house in Tala sub-district, under the auspices of Sundarban Adivasi Munda Sangstha (SAMS), a Munda community-led local NGO. The families also received a few small ponds/tanks which they could use for fish farming. They likewise practiced homestead vegetable gardening in the small space between the houses. SAMS facilitated this kind of rehabilitation for a total of 87 Munda families from Shyamnagar upazila of Satkhira and Koyra upazila (adjacent to Shyamnagar) of Khulna district.

Meanwhile, three Munda families ended up living in the government-funded shelter barracks in Burigoalini village, which were built in the 2010s to resettle 100 families affected by Cyclone Aila. This barrack has 10 rows of combined houses on comparatively bigger land for each of the 100 families. There are also three large ponds that the families

can use. However, the occupants subsequently left these houses because of adverse living conditions there, such as damage to the shed houses from heavy rains, and the fact that there were no livelihood options available nearby.

Another 18 Munda families from different places in Sathkira and Kulna districts were resettled in Jelekhali Mundapara under an arrangement similar to that in Tala sub-district and which was also facilitated by SAMS.

In both Tala and Jelekhali sub-districts, however, none of the resettled families received agricultural land. Both male and female family members took on wage work, either on other people's land or in local crab and shrimp processing farms, while some male family members left to find work in brick clines or on farms in other areas. In focus group discussions organized by ALRD, these families said that if they had been allocated agricultural land, then they would have been self-reliant. However, despite a national policy to distribute agricultural *khas* land to landless families, the government has not put in place a program to implement it despite the applications submitted by several of these families.

Responses by authorities

The devastation wreaked by Cyclones Sidr and Aila put a spotlight on Shyamnagar in national and international discourses on climate change and disaster risk reduction (DRR). This generated considerable external investment in development programs in the area. Shyamnagar became a test site for climate change adaptation and DRR projects of local and international donors and NGOs. Programs on gender empowerment, women's education, and connectivity through mobile communication were also implemented in Shyamnagar.

Cyclone Aila hit the southwestern coastal region just when the government was rehabilitating areas damaged by Cyclone Sidr. Thus,

some funds and a number of projects that had been earmarked to support recovery from Cyclone Sidr were realigned to initiate Cyclone Aila recovery projects. For example, damaged rural roads were reconstructed by modifying the World Bank (WB)'s Emergency 2007 Cyclone (Sidr) Recovery and Restoration Project.

Subsequently, the government developed plans specifically for the Aila recovery. These plans followed two approaches: (1) segmenting and prioritizing the reconstruction activities under the Annual Development Plan (ADP) of the government; and, (2) formulating special initiatives (with foreign aid) for large-scale projects.

The ADP and the Rehabilitation of Aila-Affected Rural Infrastructure Project (RAARIP) were designed to complete the unfinished rehabilitation tasks (Sadik et al., 2017). However, not one of these projects incorporated new DRR measures (Sadik, et al., 2018). At the same time, these plans were focused on long-term initiatives and not on addressing immediate needs.

Lacking prompt support from the government, the affected communities used what little savings they had, reduced spending on health, stopped sending their children to school and put them to work to augment the family's income. HM Golam Reza, the parliamentarian from this constituency (Satkhira-4- Shyamnagar and Kaliganj *upazilas*) admitted that "the fund allocated for rehabilitation of the Aila-hit homeless people is scanty" (The Daily Star, 2009).

Assessment and way forward

According to the Munda community, inadequate responses to disaster events, particularly the lack of clear understanding of tenure issues, impacted negatively on their lives and livelihood in the context of natural disasters and the impacts of climate change. Thus, it is important to address land tenure issues in early efforts at building resilience and disaster preparedness.

The Government of Bangladesh has not yet recognized the indigenous peoples' traditional knowledge, customs on conservation, nor their right to govern and conserve the Sundarbans. One such traditional practice that the government has yet to acknowledge is the Munda community's adherence to the ethos of *Bonbibi* – a legendary guardian spirit of the forests who is venerated by residents of the Sundarbans. The community's deference to *Bonbibi* is demonstrated by their observance of customary no-take zones, core protected area formations, and no-fishing days. The Munda people have sustained these practices on their own initiative rather than through top-down law enforcement (AIPP, 2021).

In consultations with the Munda community, they expressed what is necessary to achieve resilience. They all agreed that migration is not a sustainable solution for them, because their culture and livelihoods are closely linked to the Sundarbans. To improve their livelihood resilience, they all affirmed that land tenure security is indispensable. They proposed a special policy initiative for land-based resilience-building among the community.

Availability and access to financial capital often help poor and marginalized families to diversify their income opportunities and family incomes. In Bangladesh, there are various formal and non-formal microfinance facilities available. Local people have access to two different forms of credit systems: (1) loans from local wealthy people, or the *mohajon*, who charge high interest rates of 100 percent per year; and, (2) micro credit from NGOs, who charge around 15 percent annual interest. Unfortunately, extremely poor households, cannot afford loans from the *mohajon*, and are usually excluded from access to NGO loans.

The other means of accessing capital is through the *dadon* system. A trader provides an advance to fishers, crab collectors, shrimp farmers, and rice farmers on the condition that he or she must sell their produce or harvest at lower-than-market prices.

On the other hand, bank loans require land as collateral with all the requisite land documents. Land documents are also a prerequisite for obtaining the Farmer's Card. Clearly, land tenure security is necessary to access credit and government agriculture services that include incentives, subsidized equipment, seeds, and fertilizers, among others. As access to these support services can help rebuild after climate shocks, Munda community members think that land tenure security can positively change their lives.

The current policy on agricultural *khas* land distribution among the landless can address the land rights deprivation of Munda women. If they are granted land, either individually or jointly with their husband, Munda woman are capable of sustainably using and managing it. Aside from distributing *khas* land, the government can confiscate waterlogged areas from illegal occupants and encroachers and allocate them to the community. Even poor-quality land such as this can be used by the community for crab fattening or for cultivating salinity-tolerant crop varieties.

Lastly, the Munda community demands their participation in any decision-making that concerns them. The top-down approach, along with the corruption and insensitivity, has created gaps in ongoing projects and activities that are supposed to enhance their resilience. The community said that the scenario would be much better if they could take the lead. ■

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CASE STUDY

IP women challenge the intersection of gender and land rights inequalities:

A case study of rural women's resilience efforts in Analamanga Region, Madagascar

Prepared by Mino Ramaroson, Huairou Commission

The Fiaferana municipality in the Analamanga region is located in the central highlands of Madagascar and is home to the Merina tribe.

According to the 2021 census,[1] Fiaferana had a population of around 7,068 residents. Roughly 90 percent of the population is engaged in farming, and approximately 60 percent of the residents live below the poverty line, with incomes of less than two US Dollars per day.

Climate change has significantly altered the seasons in Fiaferana. Like the rest of Madagascar, but especially in the central highlands, cyclones have become increasingly frequent and more powerful.

In 2019, some 25 houses were destroyed by these cyclones. Every year, these cyclones wreak havoc, bringing floods and hailstorms that damage homes, crops, and farmlands. At the same time, while the rainy season has become more intense, with ruinous effects, it has also become shorter.

Such changes in rainfall patterns, including the incidence of flooding and hailstorms, have had a profound impact on the community's livelihoods.

[1] https://www.instat.mg/documents/upload/main/INSTAT_RGPH3-Definitif-ResultatsGlogaux-Tome2_17-2021.pdf

Key Messages

- Gender and land rights inequality pose a two-pronged challenge for the women of Fiaferana. Women are denied inheritance rights, further limiting their access to and control over land resources. A key contributing factor to this disparity is a discriminatory land tenure regime in rural settings which relies heavily on customary practices that are not gender-sensitive.
- At the same time, the tenure security of women is increasingly compromised as climate-related effects intensify. The intersectionality of rural women's vulnerabilities and the climate crisis is creating a complex web of challenges that need to be addressed holistically.
- The current land policy framework in Madagascar, while avowedly gender sensitive, does not incorporate a gender dimension, and neglects the specific challenges and rights of women in the implementation of land reform.
- Integrating customary land tenure systems within formal land governance structures can significantly strengthen community resilience but only if social norms and practices are not gender-biased.
- Fiaferana women have adapted to climate impacts such as hailstorms and cyclone-induced flooding by embracing sustainable land management, including the adoption of organic agriculture, and by replenishing forests and protecting natural habitats, among others.

The women of Fiaferana have reported that they used to be able to rely on their traditional knowledge of when and how to plant their crops.

In recent years, however, these traditional farming practices have been overturned by the unpredictability of the climate. The women said that 20 years ago, they used to be able to plant rice twice a year. Today, because of the risks posed by insufficient rainfall or hailstorms, they can only plant one crop a year. They also either delay or prematurely start planting in anticipation of insufficient rainfall.

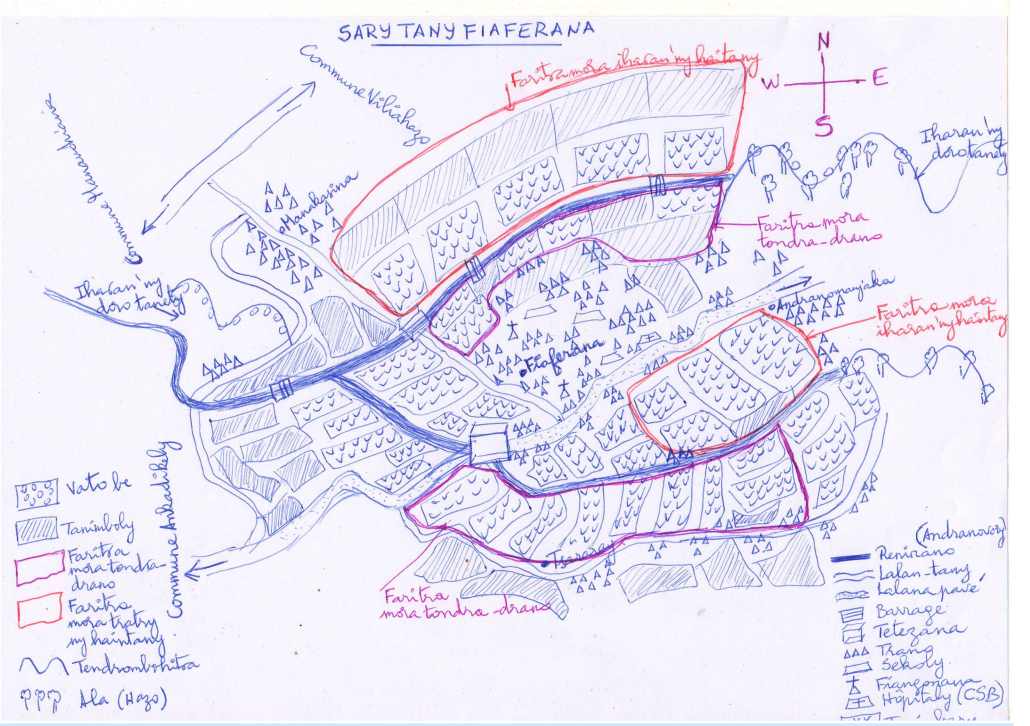
Intense rainfall has also led to soil degradation and landslides, diminishing the available agricultural land.

The irrigation systems that once served the rice fields have been destroyed by soil erosion and heavy rains, further reducing the available land for production in the area.

Gender and land rights inequality: Two-pronged challenge for women

The women of Fiaferana labor under a power imbalance in relation to land ownership and rights that is observed across the various tribes in Madagascar.

This disparity is particularly pronounced in some regions, including in Analamanga, where women are denied inheritance rights, further limiting their access to and control over land resources. A key contributing factor to this disparity is a discriminatory land tenure regime that prevails especially in rural settings which relies heavily on customary practices. Customary norms and traditions govern the land management system, and these often lack a gender-sensitive approach. In general, the current land policy framework in Madagascar, while avowedly gender-sensitive, often fails to incorporate a gender dimension, neglecting the specific challenges and rights of women in the implementation of land reform.



Map of Fiaferana as designed by the women's group in the area

Land laws and women's rights in Madagascar

In Madagascar, where the majority of the population engages in agriculture as their primary livelihood, land is a critical asset. The importance of land in sustaining livelihoods and communities cannot be overstated.

The first significant land reform in Madagascar occurred in 2005, marking a pivotal shift in the perception of property rights. It transitioned from the notion of "State-owned land" to "untitled private property." This reform aimed to overhaul the land management system, emphasizing decentralization and modernization. The decentralization of land management relied on the establishment of a local service, the communal land office, responsible for issuing land certificates for individually or collectively occupied but untitled land parcels. A key aspect of this transformation was the inclusion of the customary land management system within the decentralized land offices.

Building upon the initial reform, a second land policy letter was introduced, incorporating eight of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Forest and Fisheries (VGGT) principles. This policy letter also advocated for land certification, which plays a crucial role in securing land tenure rights. The adoption of these frameworks within the reviewed land policy led to a more focused gender dimension in the current National Land Policy Letter. The recognition that women are not homogenous regarding land, that different groups of women have different needs and face different situations, is anchored within the reviewed land policy.

Decentralization thus significantly improved the public land management service. In 2022, after 17 years of reform, 546 land offices were established, and nearly 1,370,000 certificates were issued compared to the estimated 680,000 land titles delivered in the last century.[2]

Despite these advancements, estimates show that documented land parcels in Madagascar still account for less than 30 percent of the total land area. This presents challenges in ensuring land tenure security, particularly in the current context of increasing land-based investments and the adverse effects of climate change. Unfortunately, women continue to face disadvantages in the land tenure process, highlighting the need for gender-sensitive policies and practices to ensure equitable access to and control over land resources.

[2] From the foundations to achievements: Where does the Malagasy land reform stand? P. Burnod, E. Bouquet, Technical Committee, "Land and Development", January 2022.

The tenure security of women becomes increasingly compromised as climate-related effects intensify. The intersecting vulnerabilities of rural women and the changing climate create a complex web of challenges that need to be addressed holistically. This observation prompted the establishment in 2018 of FARM (Femme en Action Rurale de Madagascar), a self-managed and independent movement that enables rural women to fully assume their responsibilities in solidarity within the rural women's movement.

In 2019, FARM began working in Fiaferana, where it has four members' groups, which collectively represent approximately 200 rural women. Through their advocacy efforts, focused on identified issues such as the effects of climate change and the impacts of the COVID-19 pandemic, they successfully secured parcels of land from the municipality, totalling 26 hectares, and farmed them collaboratively.

Impacts of climate change and disasters on women's welfare and rights

The impacts of climate change on rural women in Fiaferana have been far-reaching and have profoundly affected their lives in several ways.

Loss of land
The increasing frequency of hailstorms and floods caused by cyclones (which also caused the destruction of the irrigation systems) has left vast tracts of rice fields unproductive. This has had a devastating impact on FARM members, prompting them to negotiate with the local authorities to get access to land. The 26 hectares that they obtained enabled the women to increase their income and economic stability. However, the parcels of land were provided as a donation without any accompanying documentation. Currently, the women are engaged in the process of seeking formal land titles. However, this process has proven to be financially burdensome for them.

Food shortage
Climate change-induced shifts in weather patterns have resulted in reduced agricultural productivity. This reduction in crop yields and livestock has contributed to food shortages, leading to increased food

FARM is composed of 250 rural women's groups in eight regions of the island whose mission is to promote gender equality and climate justice through raising awareness and providing training to rural women about their rights, strengthening their organizational and technical capacities, and ensuring their full participation in decision-making processes economically, ecologically, socially, and culturally.

insecurity among rural women and their families. Nutritional deficiencies and hunger have become pressing issues.

Migration
Climate-induced migration has become a common phenomenon among rural women and their families in Fiaferana. As droughts or floods render their land temporarily or permanently unproductive, many are forced to migrate to urban areas in search of alternative livelihoods. This migration disrupts their connection to the land and their ability to invest in it.

Land conflicts
The competition for land in Fiaferana has led to conflicts, particularly as rich families from the capital buy up available lands, causing land prices to increase beyond the capacity of poor families to afford. Thus, poor families in Fiaferana have been migrating to the city to search for work. This has led to rising unemployment in the city and increased pressure on the informal settlements, thus causing more land insecurity.

Loss of cultural identity
Displacement and changes in land use due to climate change have eroded the cultural ties that many rural women have to their ancestral lands. The poor families that are migrating to the city are losing their connection to their rural home. Without support for these families, their detachment from their ancestral land can be emotionally distressing and impacts the social fabric of these communities who end up living in informal settlements.

Landlessness and unemployment
The effects of migration have been twofold: poor families from Fiaferana have not only lost their land at home, but have found

themselves jobless in the city. This double blow exacerbates poverty and increases their vulnerability, as they struggle to find alternative sources of income.

Lack of mitigation measures
In many regions, there is a notable absence of comprehensive planning and mitigation measures to address the specific impacts of climate change on land. This lack of foresight and preparedness further compounds the challenges faced by rural women and their communities.

Lack of investment and access to extension services
Rural women often face significant barriers in accessing resources, such as land, credit, and modern agricultural technologies. This lack of access hampers their capacity to invest in climate-resilient practices, which are essential for mitigating the impacts of climate change on their livelihoods.

In light of these challenges, addressing the gender-specific impacts of climate change in the regions is crucial. Implementing climate-resilient agricultural practices, providing access to education and training, and ensuring the inclusion of rural women in decision-making processes related to climate adaptation are all essential steps in mitigating the adverse effects of climate change on their lives and livelihoods.

Responses by communities

In the face of climate change impacts, local communities have embarked on innovative strategies that not only promote climate resilience but also empower women and protect their land rights.

First and foremost, they have embraced sustainable land use practices. Farmers are increasingly diversifying their crops and adopting drought-resistant varieties to mitigate the effects of changing rainfall patterns and prolonged droughts. These adaptive farming techniques not only help ensure food security but also reduce soil degradation. Another significant response is the adoption of agroecological practices, particularly in small-scale agriculture.

Communities are maximizing the use of all available inputs and small plots to increase crop yields while preserving the land. This approach not only boosts agricultural productivity but also allows women to actively participate in farming activities, strengthening their claim to land rights.

Organic agriculture has become a prevailing practice for the women groups in Analamanga. Here, women are actively involved in self-producing organic fertilizers and cultivating local seeds. An inspiring example comes from a woman, Berthine Razafindravao, member of a community-based organization (CBO) with 25 members in Fiaferana Municipality. She efficiently utilizes a small 20 square-meter parcel for year-round organic green pea production. From this production alone, Berthine earns 100,000 Malagasy Francs or 4.14 US Dollars per month (which represents half of the minimum wage). Her regular income from this plot, which has become increasingly productive due to organic fertilizer use, highlights the potential for women's economic empowerment through organic agriculture.

Short-cycle rearing of livestock, such as poultry and rabbit, as well as worm farming, have also gained traction. In Fiaferana, a group of 150 rural women started raising 20 chickens. They now sell 100 chickens per week per member, providing income and food security for participating families. Women are actively engaged in these ventures, contributing to household finances and reinforcing their role in land management.

Furthermore, fish farming, primarily targeting women, is being carried out with notable success. Their regular harvest of 500 to 800 grams of fish per unit, sold at competitive prices, provides a consistent income stream.

Additionally, rural women groups have started reforestation and afforestation projects to combat deforestation caused by resource-intensive livelihoods such as charcoal production. They collectively work on the 26 hectares of land that they received from the local

authorities, applying agroecological methods in growing fruit trees and crops. By replenishing forests and protecting natural habitats, they aim to restore ecological balance and reduce the risks of landslides and soil erosion during heavy rainfall.

Key actors involved in supporting these initiatives include the European Union's DINIKA project, which contributes to these efforts by fostering climate resilience and sustainable land use practices in the Analamanga region.

These local responses not only help communities adapt to climate change but also contribute to women's economic empowerment and the protection of their land rights. By actively participating in sustainable agricultural practices and income-generating activities, women gain a stronger footing in decision-making processes related to land, thereby fostering gender equity and resilience in the face of environmental challenges.

Responses by authorities

The central government generally does not provide support for locally initiated efforts to tackle the challenges arising from the impacts of climate change. The BNGRC (National Bureau for Risk and Disaster Management), which serves as the national agency for disaster risk prevention and response, primarily focuses on addressing natural and human-made disasters as they occur. There is a notable absence of follow-up, critical reflection, or proposed actions in the aftermath of disasters, even in regions known for their susceptibility to such events.

In contrast, there is a growing emphasis on community-led advocacy for sustainable land and resource management. Communities are working to raise awareness about the importance of preserving land, water resources, and forests. They engage in dialogues with local authorities to promote policies that address climate change adaptation and mitigation while safeguarding their land rights. A concrete positive

outcome of community engagement with local authorities is the grant of 26 hectares of land to women's groups in Fiaferana. The women are now using the land for reforestation by planting eucalyptus, acacia and fruit trees. They also received land for market gardening using organic production.

Assessment

Key issues

Rural women respond by adapting to changing conditions, but their options are limited. One of the pressing issues faced by rural women in the context of climate change is the insecurity of land tenure. This insecurity not only disrupts their lives but also exacerbates climate-induced migration. Women are forced to leave their homes due to the loss of productive land. In some regions, they compete for resources, leading to conflicts.

Additionally, there is a noticeable absence of adequate mitigation and adaptation measures in areas heavily impacted by climate change. This lack of preparedness further compounds the challenges faced by these communities.

Furthermore, gender disparities persist in land ownership, with women often having limited access to and control over land resources. Finally, there is a significant gap in government policies aimed at protecting tenure rights, leaving rural communities vulnerable to the adverse effects of climate change.

Reflections and insights

Secure land tenure is fundamental in enhancing rural women's resilience to climate change. It serves as the foundation for investment in sustainable land management practices, enabling them to better adapt to changing environmental conditions. Additionally, integrating customary land tenure systems within formal land

governance structures can significantly strengthen community resilience if social norms and practices are not gender-biased. This integration can lead to clearer land rights, reduced disputes, and more effective land management.

Moreover, adequate land planning is pivotal in mitigating the impacts of climate change. By identifying safe and suitable areas for settlement and agriculture, communities can reduce their exposure to climate-related risks and ensure more sustainable land use practices.

In sum, addressing these key issues and applying these insights can help rural communities better navigate the challenges posed by climate change which exacerbate land tenure insecurity.

Recommendations

Drawing from the insights of the case study, a set of recommendations can be formulated to address the pressing challenges faced by rural communities in the context of climate change and land tenure insecurity.

- It is essential to strengthen land tenure security through the issuance of land certificates and titles, providing communities with a legal document to protect their land rights.
- Promoting sustainable land management practices is crucial in mitigating the adverse impacts of climate change. This includes measures to prevent soil degradation, optimize water resources, and adopt climate-resilient agricultural techniques.
- Implementing gender-sensitive land policies is vital to ensure that women's land rights are recognized and protected.
- Disaster preparedness and mitigation strategies should be developed, with the involvement of rural women, and incorporating land-use planning tailored to climate-impacted regions.
- Fostering collaboration between government agencies, non-governmental organizations (NGOs), and local communities is

imperative to comprehensively address the intertwined challenges of land tenure and climate change, ensuring a more resilient and equitable future for rural populations. ■

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CASE STUDY

THEME 2:
Customary tenure, use, and governance
How recognizing customary land rights and practices of indigenous communities helps build local capacity to mitigate and adapt to climate change

Beyond land titles: Pastoralists find security amid climate change in community land governance mechanisms

A case study of how stronger local community land governance promotes the climate resilience of local and indigenous communities in Kenya

Prepared by Arach David James, Namati

Between July 2011 and mid-2012, a severe drought affected the entire East African region. Said to be "the worst in 60 years," the drought caused a severe food crisis across Kenya, Somalia, Djibouti, and Ethiopia that threatened the livelihood of 9.5 million people. The lack of rain resulted in crop failure and the loss of as much as 40 to 60 percent of livestock in some areas.

Drought and extreme heat will continue unabated in the African continent. The State of the Climate in Africa 2020 estimates that by 2030, up to 118 million extremely poor people in Africa will bear the full force of these extreme weather events (WMO, 2020).

Key Messages

- Kenya's land laws, passed by colonial and post-colonial administrations, have replaced customary structures and practices that had served pastoralist communities well by enabling them to govern communal land effectively amid recurring droughts.
- The communities' heritage of robust resilience-building practices is being eroded as more and more of their land is privatized or controlled by external interests. The new owners stand in the way of the communities' continued practice of their rich adaptation and resilience-building traditions.
- A land title is merely evidence of a community's land claim. Tenure security, however, is dependent on good governance at the community-level and making sure that community members understand the law – and how to use it – to protect their rights and lands.
- In the face of current challenges from outside interests, pastoralist communities require legal recognition of their customary tenure and local community land governance structures. With strong governance mechanisms at the community level, communities will not only have improved tenure security, but will also be able to effectively implement their climate resilience strategies. In particular they will be empowered to participate in environmental governance, such as in the carbon trading projects.

Pastoralists, who make their living from herding livestock to graze on outdoor lands, are particularly vulnerable to drought-induced shocks. In Kenya, pastoralists who work on arid and semi-arid lands (ASALs) face even greater risks to their livelihood from drought. The ASALs are marginal lands for various reasons, including poor water supply or soil quality, extreme temperatures, steep slopes, and remoteness.

Kenya's ASALs make up over 80 percent of Kenya's total land area, and support about 10 million people or 20 percent of the population (IUCN, n.d.). This paper focuses on the pastoralist tribes of Kenya, includng the Maasai, Samburu, Turkana, Somali, El Molo, Boran, Burji Dassenich, Gabbra, Orma, Sakuye, Boni, Wata, Yaaku, Daholo, Rendille, and Galla. Livestock accounts for 95 percent of the household income in these communities.

Seventy percent of the country's livestock is raised through pastoralism. The pastoral livestock sector (meat, milk, and other products) is estimated to be worth over a billion US Dollars annually, and supplies approximately 90 percent of all meat consumed in the country.

Despite the important role pastoralism plays in supporting local livelihoods, and in contributing to the national economy, its capacity to adapt to change is now under strain (Nori, et al., 2008). The quality, quantity, and spatial distribution of natural pastures is mainly shaped by rainfall. Recurrent low rainfall will result in increasingly scarce, scattered, and unpredictable pastures (Bai and Bent, 2006). Severe recurrent drought periods will lead to a shortage of forage and water, causing cattle starvation and malnutrition.

Many years of surviving under such environmental pressures have taught pastoral and agro-pastoral communities to develop various forms of adaptation and coping strategies. Such strategies are guided and overseen by their customary institutions, whose priority is the proper use of the vast pastoral rangelands where these communities reside.

However, in order for the communities to effectively practice the adaptive and resilience-building strategies that they have developed and practiced, they need stronger land tenure security and the ability to govern their lands by themselves.

The current legal framework, which is defined by the Land Act of 2016, provides that unregistered community lands shall be held in trust by the county government (local government) until the communities are able to register and receive legal title to them. In the meantime, all land-related decisions would be made by the county authorities. Seven years after the Land Act was passed, only 44 communities out of potentially tens of thousands of communities across Kenya (number to be determined after registration) have been able to register their lands and receive titles. Lacking land titles, the other communities cannot revert to their traditional land management institutions, which the government regards as obsolete. This has contributed to the deterioration of local communities' governance systems and has thus undermined their resilience to the impacts of climate change.

Response by the communities

Over time, the pastoral communities in Kenya have developed comprehensive and robust resilience strategies which reflect their rich local knowledge. These practices would be best implemented in the context where communities legally own their lands, and can govern, and make decisions based on their rich wealth of experience. Below is an articulation of some resilience strategies learned and employed by pastoral communities of Kenya.

- **Mobility and grazing strategies.** Mobility promotes pastoral resilience (Fratkin, 1997) because it allows pastoralists to track greener pastures and avoid forage supply scarcity associated with the ASAL environments. It is common for pastoralists to move their livestock to temporary camps that are closer to areas of underutilized pastures during times of stress (Moritz, et al., 2013). However, of late, this mobility has led to the escalation of disputes on access rights due to poor governance, and the lack of competent land administrative structures at the community level.
- **Social security networks.** Pastoral societies have social safety nets that are intricately connected to a system of obligations upheld through the exchange of gifts and loans (Dahl and Hjort, 1979). Livestock plays a crucial role in establishing entitlements, meaning that individuals without livestock are not entitled to access the resources of others (Sobania, 1979). These entitlements are a fundamental component of social security networks based on clan membership (e.g., Boran and Gabra in Northern Kenya) or stock associations (e.g., Rendille, Samburu, and Turkana). They come into play when livestock is lost due to factors like drought and raids, and to a lesser extent, when livestock succumbs to disease (Dahl and Hjort, 1979). Typically, shortages in milk are alleviated through stock loans from stock associates, who are often relatives and friends (Baxter, 1970; Dahl, 1979). Clan members collectively share the responsibility of transferring livestock from the more fortunate to the less fortunate, a practice sanctioned by the clan elders (Oba, 1994b; Turton, 1985). However, this system has gradually weakened over time due to the erosion of traditional land governance structures.
- **Gender perspectives.** Pastoralist communities acknowledge that women often fall victim to hunger and destitution. In pastoral

communities and among the minority groups, women share relationships of bond friendship with one another, which are established through family contacts and initiated by the sharing of gifts. The provision of goods and services serves as "investments" that are reciprocated when the need arises. Households where women are absent lose access to social security networks that are controlled by other women. The abuse of culture and traditions due to the lack of strong governance mechanisms has sometimes compromised this practice among women.

- **Integration of pastoral production into the consumer and monetary market.** The incorporation of pastoral production into consumer and financial markets is becoming increasingly prominent. This trend involves economic diversification and aligning pastoral production with consumer and monetary markets. Consequently, the loss of livestock due to drought is no longer viewed merely as a source of meat for immediate consumption but is seen as a burden on both the local and national economy (Grandin et al., 1990). With effective management, pastoral communities have significant potential to generate greater economic advantages from their livestock.
- **Agro-pastoralism.** When food conditions are less severe, pastoralists dispose of their livestock according to a predetermined order. Initially, small stock is marketed, while large stocks are sold only when the need for cash becomes greater. When grain supplies decline, pastoralists may find themselves with cash that they cannot spend. To mitigate food shortages, they have, therefore, opted to diversify their economy by mixing grain production with livestock management. Farming is increasingly becoming practiced to make up for lost income from declining herds, but it is still not being developed as a substitute for pastoralism (Oba, 1990). Such development needs to be regulated under strong local governance mechanisms.
- **Livelihood diversification.** Pastoralists, such as Boran herders in Kenya, believe that engaging in other income-generating activities provides more options, given that livestock herding is becoming increasingly difficult. In pastoral contexts, where the human population increases too fast to allow each household to maintain a minimum number of herds, diversification into other livelihoods becomes inevitable (Brown, 1971).

Legal recognition of customary tenure and local community land governance structures will enable communities to employ these rich adaptation and resilient practices to their advantage. With insecure land tenure and inability to govern their lands, local communities cannot effectively benefit from their rich traditional knowledge on climate resilience. Without legal registration, communities have limited control over their land, and will continue to lose their lands to large scale land acquisition and bad deals.

Response by authorities

Land rights disenfranchisement: The legacy of disempowering laws

The erosion of customary structures and practices governing the use and ownership of Kenya's lands began with land laws crafted and enforced by the British colonial administration.

Until the 1900s, all land in Kenya was owned communally. People defined themselves according to their respective ethnic or user groups. These groups collectively managed and owned open, unfragmented lands that were ideal for supporting their livelihoods. Land and natural resources were governed by customs and oral rules that were passed on from one generation to the next. Communities developed comprehensive land management systems based on the availability of water and pasture, traditional ways of coping with diseases, relationships with neighboring communities, and socio-cultural activities and ceremonies. These customary systems of land management and governance were not perfect. For instance, women and other marginalized people were sometimes excluded from decision-making processes. In general, however, the systems functioned and effectively supported the communities' livelihoods.

Beginning in 1901, the colonial administrators passed different land and legal reforms to further their aspiration of taking control of Kenya's lands. These laws significantly impacted land management and governance, causing negative repercussions on livelihoods and land tenure security.

The **Crown Lands Ordinance (1902)** declared land, especially those inhabited by Kenya's indigenous people, as Crown Land, and classified them as "waste and unoccupied" land. The colonial administration

allocated such lands to private individuals/entities or earmarked them for the construction of administrative facilities and public infrastructure.

The **Trust Lands Act (1939)** further entrenched the Crown Land Ordinance by declaring that all Crown Land would be held in trust by county councils, who were granted all power to allocate land and manage it on behalf of communities.

Land laws passed after Kenya's independence in 1963 did not reverse the disenfranchisement of communities of their land rights. The colonialists were simply replaced by the new political elite who used the chiefs and the local leadership to enrich themselves.

For example, **the Land (Group Representatives) Act of 1968** enabled small groups of representatives to own and manage pastoral land (called Group Ranches) on behalf of the larger community. The Group Ranch scheme was viewed as a mechanism to confine Kenya's pastoral people into demarcated pieces of land so that the rest of the lands could be allocated for other uses.

The unfortunate legacy of these laws has been the replacement of customary structures and practices by artificial formal structures put in place by the colonial and post-colonial administrations to control the ownership and governance of lands. These structures bore no connection to the communities' customs and social identities, leading to devastating effects. They undermined the customary structures and further weakened them. The county councils privatized and illegally allocated huge chunks of land to powerful individuals or entities.

Group Ranches were characterized by massive corruption, as land was allocated without community participation, and power was abused by the ranch leaders.

Following Kenya's independence, many settlers left and handed over their lands to the new leaders. The people's dissatisfaction with the prevailing legal frameworks at the time prompted the formulation of Kenya's Land Policy of 2009. This Policy recognized and sought to protect customary rights to land.

The 2010 Constitution was informed by this land policy and thus provides for land rights. The Constitution formally recognizes three land tenure systems, namely, Freehold, Leasehold, and Customary. This was seen by many as a step towards recognizing collectively owned customary lands.

The 2010 Constitution also paved the way for the development of legal and policy instruments related to land, including the Land Act of 2012, the National Land Commission — a land administrative body, and the Community Land Act of 2016. Since the enactment of the latter, however, only 44 community land titles have been issued — a miniscule number compared to potentially thousands of community land titles that should have been handed out in the last seven years of the law's implementation.

Community Land Act of 2016— The exception to the rule?

In 2016, the Government of Kenya enacted the Community Land Act, a progressive new law that enables local communities to legally register and own their communal lands. Despite past challenges, this law provides an opportunity for strengthening community land tenure security and devolving land governance to local communities themselves. If implemented as designed, this law would reinforce indigenous practices that would help build robust climate-resilient livelihood systems based on communities' customary way of life.

The Act not only requires communities to acquire legal title over their lands but puts emphasis on the strengthening of local governance through the drafting of by-laws for the management of the land and natural resources; democratic elections of community land management committees; completion of inclusive community land registers, listing the names of all members regardless of gender and social status; and harmonizing boundaries and resolving all conflicts within and among communities.

However, it must be noted that thus far, only 44 community land titles have been issued under this law.

Carbon market: Emerging hegemony created by climate change

Since 2012, there has been growing discourse in Kenya regarding climate change and the carbon market. Today, there are about 23 different carbon credit projects being implemented in Kenya. The largest of these is the Northern Rangeland Trust (NRT)'s Carbon Project, which started in 2013 and will be implemented for 30 years.

The avowed goal of the project is to increase the overall forage cover of Kenya's ASALs through improved rangelands management, thus enhancing the carbon capture capacity of the ASALs. The NRT reports that the project has provided increased pasture and forage for herders' animals, hence improving livelihoods for more than 175,000 local people.

NRT works with 14 community conservancies, comprised of 27 communities covering 1.9 million hectares of Kenya's ASALs.

A board of trustees selected from the different communities manages the project.

The project's partners are as follows:

- **Northern Rangeland Trust** is the project administrator;
- **The Nature Conservancy** provides technical assistance and funds for the project's development;
- **Soils for the Future**, a soil science consulting firm, designed the project methodology,[1] facilitated its verification through the VCS methodology, and continues to support the project by providing monitoring, reporting and technical advice;
- **Native** is a carbon project developer and offset provider that partners with leading brands to help them implement and scale new climate action.

The Nature Conservancy, Soils for the Future, and Native also take on verification and marketing roles.

[1] VM0017 Adoption of Sustainable Agricultural Land Management, developed by Biocarbon Fund and the World Bank, for streamlined assessment of aboveground and organic soil carbon stocks.

Between 2013 and 2020, the project reportedly generated a total of 7,379,523 carbon credits. In 2022, NRT raised 14.6 million US Dollars through carbon credit sales, out of which NRT is supposed to have paid 324,000 US Dollars – the first of three such payments from the sale of carbon credits — to each of the 14 community conservancies. Companies such as Netflix, Meta and NatWest have reportedly purchased carbon credits from the project.

NRT's revenue is divided as follows: communities receive 30 percent; NRT retains 20 percent as its administration fee, while the other partners doing verification and ecological monitoring receive 50 percent.

NRT approves how communities use their 30 percent share of the revenue. Communities are also expected to contribute from their 30 percent share towards the administration of the carbon project, including by paying the salaries of conservancy managers and rangers.

This begs the question: Since the NRT is the project administrator, why then are the communities being required to bear part of the administration costs while the NRT retains in full its 20 percent cut?

The NRT project is regarded as "a darling of carbon market supporters," winning a series of awards at the 27th Conference of Parties of the UN Framework Convention on Climate Change (UNFCC) in 2022, where it was hailed as "exemplary" by Kenyan President William Ruto.

On the other hand, a number of questions have been raised about the project. The fact that many community members do not understand what carbon credits are and how the carbon market operates raises concerns, including in regard to their ability to participate in the project's governance. Secondly, although the communities acknowledge that the proceeds of the project have been used for laudable purposes, such as the construction of schools, dispensaries, etc., it is not clear how the communities' 30 percent share was decided and if the communities were consulted and agreed to it. Thirdly, observers wonder if the 30 percent cut that the communities received from the project revenue is commensurate to the land they have set aside for the project.

On 16 March 2023 the advocacy group, Survival International, reported that the carbon offset project was altering long-standing indigenous herding practices. It also claimed that the project could not accurately account for how much carbon it was removing from the atmosphere. It further asked questions about the involvement of local communities in the governance of the project. Verra, the carbon offset certifier, suspended the project by end of March 2023 and initiated a "quality control review" of the project's claim of storing carbon by managing indigenous livestock grazing routes.

The apparent profitability of Kenya's carbon projects has prompted the government to develop a national legal regulatory framework. Two related bills are currently being debated in Parliament, these are: (1) The Climate Change (Amendment) Bill of 2023, and (2) The Carbon Credit Trading Bill of 2023, with the latter being in the 11th draft stage.

Among the perceived defects of the bills are, first, they tend to centralize the governance of carbon credit trading. Second, they do not ensure Free, Prior and Informed Consent (FPIC) from the communities. Third, they do not clearly define the requirements for benefit-sharing. Fourth, by seeking to set up a national registry and requiring an Environmental and Social Impact Assessment (ESIA) and community development agreement for all carbon trading projects, the government is anticipated to retain a percentage of all income from carbon trading.

Nevertheless, these bills are expected to be passed and assented to this year given the government's keen interest in climate change mitigation, not to mention the income from carbon sales.

Recommendations

Namati has developed one of the first guidelines[2] geared towards realizing community land tenure security in Kenya while strengthening local-led climate resilience strategies. The guidelines provide detailed recommendations on how local communities can be supported to

[2] Kenya's Community Land Act and Climate Resilience: A Toolkit for Communities and Paralegals, Namati (2021)

leverage the implementation of Kenya's Community Land Act (2016) to address the climate change challenge. These guidelines do not seek to replace the traditional/customary climate change resilience practices that the communities have adopted over time, but rather to build on, strengthen, and enshrine these in the local community governance mechanism.

The process that communities must undergo to fulfill the requirements of the Community Land Act of 2016 offers a unique opportunity and entry point for integrating and mainstreaming resilience-enhancing processes. The expected outcome is two-fold: increased land tenure security and strengthened climate resilience strategies by local communities.

However, while the Community Land Act 2016 gives communities a path to increase their land tenure security, strategies must be put in place to avoid the negative impacts of previous efforts to register community land in Kenya, such as the Group Ranch scheme which instead enabled the trustees to entrench themselves in power.

Legal empowerment — or strengthening the capacity of all people to exercise their rights, either as individuals or as members of a community — is an approach that has had great success in supporting communities to increase their tenure security, while also strengthening land governance, inclusion, and accountability. At its core, legal empowerment is about grassroots justice - ensuring that the law is not confined to books or courtrooms, but rather is available and meaningful to ordinary people.

Experience has shown that a title is merely evidence of a community's land claim. Tenure security, however, is dependent on good governance at the community-level and ensuring that community members understand the law – and how to use it – to protect their rights and lands. With strong governance mechanisms at the community level, communities will not only have improved tenure security, but they will also be able to effectively implement their climate resilience strategies. In particular, they will be empowered to participate in environmental governance, such as in the carbon trading projects. ■

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CASE STUDY

THEME 3:
Land rights and sustainable land/ resource use

How secure tenure rights encourages sustainable land use by communities in ways that protect and restore

Through deluge and drought: A village overcomes

A case study of Trapeang Rumdenh Village, Kbal Trach Commune, Krakor District, Pursat Province, Cambodia

Prepared by Sokkhoeun Te, STAR Kampuchea (SK)

The village of Trapeang Rumdenh, located in Krakor District, Pursat Province, Cambodia, covers approximately 1,400 hectares, and is home to 407 households, or 1,651 people. The village's predominantly Khmer population makes their living from agriculture, growing rice, vegetables and fruit trees, aside from fishing in the Tonle Sap Lake, located north of the village.

Climate change is making Trampeang Rumdenh increasingly vulnerable to flooding and drought.

The village is located in a floodplain, which puts it at greater risk of flooding. Besides its location, changes in rainfall patterns and increasing deforestation are resulting in more frequent and more destructive flooding. For instance, the slow-onset flood from Tonle Sap which occurred in October to November 2021 destroyed the village's entire rice crop.

Key Messages

- Diversification of income sources is vital. This can help to protect people from the impacts of climate change, such as crop failure or loss of livestock.
- The lack of funding and support for climate change adaptation is a major challenge that the central government must address by allocating more resources to the government agency responsible for disaster management as well as to local organizations so that they can better respond to the needs of vulnerable people affected by climate change.
- As part of the process of securing land tenure security, the community must begin to establish and document proof of their occupancy and use of the land.
- The community must consider forming a community land trust -- a legal entity that takes ownership of, or authority over, a piece of property on behalf of a community. This can help to prevent land from being sold or developed by outsiders without the community's prior knowledge and consent.

At the same time, the village has experienced more frequent droughts. This has made it difficult for farmers to irrigate their crops, and has led to crop failures. The drought has begun to occur in June to September – the traditional period of wet rice production. It is notable that in the Three-Year Rolling Investment Plan Book (3IP) of Kbal Trach commune, which is located in Krakor District, there is no provision for a water irrigation system to meet the water shortage that farmers in many villages anticipate even during the rainy season from 2023 to 2024.

Table 1 summarizes the climate risks that affect Trapeang Rumdenh Village, along with their months of occurrence, and the areas or land use that are most affected:

The link between climate vulnerability and tenure status

Trapeang Rumdenh Village consists of three Areas, which are distinguished not just by their topographic features but by the prevailing tenure status of their population and their exposure to climate change impacts.

Table 1. Climate risks in Trapeang Rumdenh Village, their period of occurrence, and sectors affected

Hazard	Month	Area or Land Use
Flooding	October-November	Rice fields (Area 1)
Drought	June-September	Rice fields (Areas 1 and 2)
Strong winds	Mid-April to early June	Crops, homes, and property in Area 3

Area 1 is located in the floodplain and in the transition zone of the Tonle Sap Biosphere Reserve outside of the buffer and core zones.

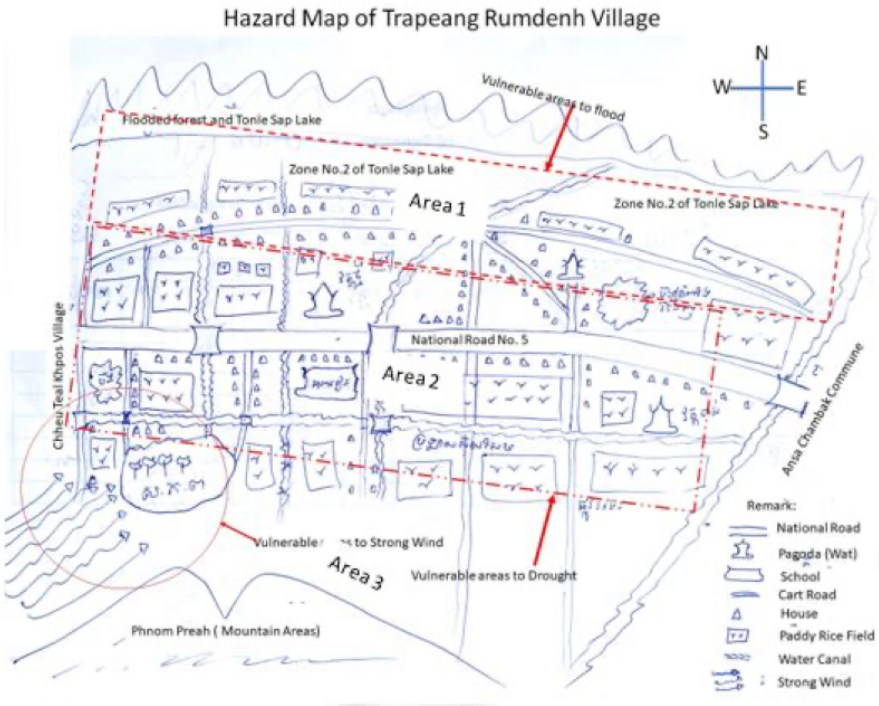
Most people living in Area 1 do not possess formal land titles.[1] This situation impacts on their capacity to recover from, adapt to, and prepare for flooding and erosion. More generally, the lack of formal land titles makes it difficult for them to access credit, sell their land, or pass it on to their children. It also makes it difficult for them to protect their land from encroachment or other threats.

In Area 2, which is located on higher ground, more people have formal land titles. However, these landowners use their land for purposes other than agriculture. This is because they think that their land, having been deforested and overgrazed and is prone to drought, is no longer fit for food production. Thus, they opt to sell or transfer their land to others, or to use it as collateral to secure loans from banks.

In Area 3, which is located in the mountains, most people manage and use the forest communally. However, this practice has not been formally recognized by the government in the form of a community forest management agreement.

In general, the lack of secure land tenure is a major challenge for people in Trapeang Rumdenh Village. It makes them more vulnerable to climate change impacts and makes it difficult for them to adapt to

[1] Sok, S., & So, T. (2019). Land Tenure in Cambodia: Challenges and Opportunities. Phnom Penh, Cambodia: Oxfam in Cambodia.



these changes. The government needs to take steps to improve land tenure security in the village, such as issuing formal land titles and recognizing customary land tenure. This will help to protect people's land rights and make them more resilient to climate change.

Response by the community

The Community Forest (CFo) of Trapeang Rumdenh is taking steps to respond to climate change. Each year, the CFo plants 200 small trees in the forest land. These trees help to absorb rainwater and reduce flooding.

In addition, the villagers engage in a variety of activities to generate income and to make up for their lost rice yields due to climate change. From February to March, they hunt for insects and spiders, which they sell to middlemen, earning for themselves between 5 US Dollars and 10 US Dollars a day. From April to June, they collect wild mushrooms, from which they make 5 US Dollars a day. From August to September, they gather wild bamboo.

Too little and too much rain: Two faces of climate change

Moa Bol, 64, is a farmer and chief of Community Forestry in Trampeang Rumdenh village. He recalls that some years ago, farmers could harvest one to two tons of rice per hectare even while they were dependent on rainwater. Recently, however, there has been too much rain in the months of September and October, causing flooding which destroys their crop.

Phal Nhem, 65, is a farmer in Trapeang Rumdenh. He relates that he and other farmers in the village used to be able to produce two tons of rice per hectare even without irrigation. In recent years, the supply of water has been severely reduced. As a result, his rice crop has been slow-growing, compared to his crop last year, which grew to as high as his knees.

The other villagers also collect wild vines from the community forest to make handicrafts, which they sell for around 2.5 US Dollars per basket. This helps to supplement their income and cope with the challenges of climate change.

Finally, some of the villagers have migrated to Phnom Penh City or to other provinces to work as construction workers. Others have migrated abroad, such as to Thailand, Malaysia, and Korea. This is a last resort for many people, but it is a way to earn a living and support their families.

Responses by authorities

The Village Disaster Management Committee (VDMC) is responsible for managing disaster response at the village level. The VDMC is composed of local volunteers who are trained to respond to disasters, such as floods, droughts, and storms.[2] They work closely with local authorities and non-government organizations (NGOs) to coordinate disaster response efforts and provide assistance to affected communities.[3]

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[2] Sok, S., & So, T. (2019). *Land Tenure in Cambodia: Challenges and Opportunities.* Phnom Penh, Cambodia: Oxfam in Cambodia.
[3] International Land Coalition. (2021). *Land Tenure and Climate Change in Cambodia*. Phnom Penh, Cambodia: International Land Coalition.

The National Committee for Disaster Management (NCDM) is responsible for responding to any risk or disaster response inside of Kbal Trach commune. However, the NCDM has limited resources to respond to the needs of vulnerable people affected by climate change.

The Three-Year Rolling Investment Plan Book (3IP) of Kbal Trach commune for 2023 to 2024 does not include any activities or budget for responding to climate risk in all of the villages of the commune. This means that the NCDM will need to find other sources of funding to support their response efforts.

Trapeang Rumdenh village has proposed to prioritize the building of a watchtower (cottage) for patrolling the forest in the community forestry of Trapeang Rumdenh. This is an important activity to help protect the forest from deforestation, which is a major contributor to climate change. However, no institution or organization has yet expressed interest in supporting this action plan.

The lack of funding and support for climate change adaptation is a major challenge facing the authorities in Kbal Trach commune. The government needs to provide more resources to the NCDM and other local organizations so that they can better respond to the needs of vulnerable people affected by climate change.

Recommendations

Strengthening land tenure security

- The community must form a community land trust. A community land trust is a legal entity that takes ownership of, or authority over, a piece of property on behalf of a community. This can help to prevent land from being sold or developed by outsiders without the community's prior knowledge and consent.
- Members of the village can begin documenting their land rights by establishing proof of their land use, such as planting trees or building a house.
- Everyone in the village must be encouraged to get involved. This can help to build support for land rights and to make it more difficult for people to be dispossessed of their land.

Practicing sustainable land management

- Planting trees helps to prevent soil erosion and improve water retention. Trees also provide shade, which can help to reduce the risk of drought.
- Overgrazing must be reduced as it can damage the soil and make it more vulnerable to erosion. It is important to manage grazing so that it does not damage the land.
- More sustainable agricultural practices must be adopted. There are a number of sustainable agricultural practices that can be used to reduce the impact of agriculture on the land. These include using cover crops, crop rotation, and intercropping.

Building resilience to climate shocks

- Diversification of income sources is vital. This can help to protect people from the impacts of climate change, such as crop failure or loss of livestock.
- Building a food supply buffer is important to help ensure that people have food to eat during times of food shortage.
- A plan should be put in place so that village members know what to do in the event of a disaster, such as a flood or drought. ■

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CASE STUDY

Peasants and fisherfolk adapt and innovate in the midst of agrarian conflicts and natural disasters

A case study of the coastal village of Ujung Baji in Takalar Regency, South Sulawesi, Indonesia

Rizki Anggriana Arimbi, Irmawati, and Indarto, Konsorsium Pembaruan Agraria/Consortium for Agrarian Reform

Ujung Bagi is one of six villages that comprise the Sanrobone sub-district in Takalar Regency, in the South Sulawesi Province of Indonesia.

Until the end of the 1970s, Ujung Bagi was characterized by vast mangrove forests, from which the villagers gathered shrimp, crabs, and fish for food. The women made a living from weaving mats out of the leaves of *Pandanus tectorius*, a palm-like tropical evergreen tree that used to grow abundantly in the mangrove forests. In the early 1980s, local elite personalities, including a group called the *Karaeng*, took control of much of the village land, especially the mangroves, cutting these down to make ponds, which they sold to local officials and outsiders.

According to a spatial count conducted by the South Sulawesi team of the Konsorsium Pembaruan Agraria (KPA), or Consortium for Agrarian Reform,[1] around 92 hectares of ponds in Ujung Bagi village are

[1] KPA is a Jakarta-based organization of peasants, women, and indigenous people working in Indonesia.

Key Messages

- Shoreline change that is caused primarily by human activities, such as land clearing and mineral extraction in the ocean and on coastal land, is manifested by coastal abrasion or land accretion. This phenomenon has emerged as a major and serious threat to the safety and livelihood of coastal communities like the village of Ujung Baji.
- Sustained sea level rise will exacerbate the impacts of shoreline change and worsen the already threatened lives and livelihoods of coastal communities like Ujung Baji.
- The community in Ujung Baji is working to save their coastline by planting mangroves. However, its efforts might not be enough to withstand the effects of severe abrasion. The problem requires change of a higher order. The National, Provincial, Regency, and relevant Ministries (Ministry of Energy and Mineral Resources [ESDM] and the Ministry of Marine Affairs and Fisheries [KKP]) must immediately review, and if possible, cancel existing and planned sand mining concessions, which have been the culprit of the degradation of coastlines.
- At the same time, the government must enforce its agrarian reform laws, which are central to social justice, but are also indispensable to adapting to natural disasters. Research shows that 23 million people in coastal Indonesia are expected to face annual flooding by 2050. Disasters will destroy homes, cultivated lands, and villages/cities, resulting in serious agrarian conflicts as tens of millions of people lose their livelihoods and are forced to flee their villages.

controlled by non-residents, such as the former Regency of Takalar, Perusda, and wealthy residents of Makassar, the capital of South Sulawesi province.

Peasants and fisherfolk were lured by unscrupulous businessmen into selling their land or land use rights during the dry season, when their rainfed farms were generally unproductive. As a result, the residents of Ujung Bagi have been reduced to working as pond laborers and guards, among others.

Following the destruction of the mangrove forests, the income of women fishers from collecting shellfish and crabs has been drastically reduced. Fewer women are engaged in mat weaving because the loss

of the mangrove forests has reduced the availability of the *pandanus* plant – the raw material for the mats.

Apart from the impact on their livelihood, the residents of Ujung Bagi face threats posed by a "changing shoreline." The coastal area of Takalar Regency, of which Ujung Bagi is part, is in a precarious state. Research shows that 18 kilometers of Takalar's 56-kilometer coastline are highly vulnerable, and that this is due to in large part to "shoreline change" (*Eka and Sakka, 2013*).

Shoreline change is caused primarily by human activities, such as land clearing and mineral extraction in the ocean and on coastal land. During shoreline changes, parts of the coastline either sustain abrasion or erosion, or else undergo accretion and sedimentation.

Abrasion is the process whereby coastal land areas are eroded as a result of the destructive energy of ocean currents and waves. Meanwhile, accretion refers to the formation of new land, as well as the siltation of waters, that is caused by an increase in the amount of sediment carried by ocean currents and which get deposited in the area.

Changes in the coastline will clearly have an impact on the use of the affected areas. Abrasion will result in the narrowing of the area and could endanger it. Millions of people living on the coast have had to migrate amid increasingly limited land and changes in social, economic, cultural, and spiritual structures. Accretion and sedimentation will cause issues, such as land area expansion, siltation of the harbor, and, worst of all, siltation of the estuary mouth, which can cause flooding around the estuary. Both accretion and abrasion will have negative effects on the environment, economy, and society (*Triatmodjo, 1999; Putra et al., 2016, Bau Ashary, 2022).*

Sea-level rise: Natural or man-made?

Shoreline change is one of the determinants of coastal vulnerability. It can also be used as an indicator of sea level rise (*Amandangi, 2012; Eka et al.,2018*).

The sea level rise in Takalar Regency waters is increasing by six millimeters to 6.5 millimeters per year. This is higher than the sea-

level rise in the waters of Java, of four to five millimeters per year. The annual relative sea-level rise along the Galesong coast ranges between 6,203 millimeters and 6,274 millimeters. The Mappakasunggu-Mangarabombang sub-district on Takalar's southern coast has a higher sea-level rise than the northern coast of Takalar Regency. On the other hand, the Sanrobone sub-district has both the highest accretion and abrasion rates (*Eka and Sakka, 2013*).

Because of the difference, sediment is transported to the south and to the north, resulting in abrasion and accretion at this location. Furthermore, based on the findings of the study, it appears that sediment accretion in Sanrobone and Mappakasunggu sub-districts is influenced not only by wave transport but also by sediment input from river mouths near the accretion site, which is what makes accretion in these two sub-districts greater than that found in Mangarabombang sub-district (*Dwi and Nurjannah, 2018*).

According to the findings of research in the Sanrobone sub-district, the largest abrasion value was recorded in 2016 to 2019, at 90,704 meters, and the largest accretion value was recorded in 2013 to 2016, at 75,011 square meters. Meanwhile, the total coastline changes from 2013 to 2022 consisted of 73,581 square meters of abrasion and 61,513 square meters of accretion *(Bau Ashary Nasir, 2022)*.

Table 1. Changes in the coastline length of the Sanrobone Sub-district

Year	Length (meter)
2013	3,738.05
2016	5,062.80
2019	4,859.05
2022	3,247.13

Coastal and small island threats are related not only to highly exploitative spatial development policies but also to global warming as one aspect of climate change. The rise in global temperature that causes melting ice at the North and South Poles, subsequently resulting in rising sea levels, will undoubtedly cause a disaster in the future. According to the Copernicus Climate Change Service (C3S) report, the average global surface air temperature reached 16.38 degrees Celsius (°C) in September 2023. That temperature is 0.93°C above the average September temperature from 1991 to 2020, making September 2023 the hottest September ever recorded globally. It was also reported that the global average temperature from January to September 2023 was 0.52°C higher than the average temperature from 1991 to 2020. Even when compared to the pre-industrial period of 1850 to 1900, the global average temperature in January to September 2023 has risen by about 1.4 degrees Celsius. Along with this phenomenon, the ice at the South Pole is melting rapidly, contracting by nine percent below average each month, and causing the decline of the Antarctic Sea ice extent to a new low in 2023.

The European Commission's Emissions Database for Global Atmospheric Research (EDGAR) reported that global greenhouse gas emissions (GHGs) would reach 53.79 gigatons of carbon dioxide equivalent (Gt CO2e) in 2022, with China, the United States, India, the EU27, Russia, and Brazil being the world's top six GHG emitters. Notably, EDGAR made the forecast that Indonesia would rank as the seventh largest emitter, releasing 1.24 Gt CO2e. This figure is an increase from the previous year's figure of 1.12 Gt CO2e.

In a 2022 report of the United Nations Children's Fund (UNICEF), titled "Children Displaced in a Changing Climate," Indonesia was listed among the 10 countries with the highest number of children displaced by extreme weather. Between 2016 and 2021, 960,000 Indonesian children were thus displaced, landing the country on the eighth spot in the top 10, led by the Philippines, India and China.

From January to November 2023, the National Disaster Management Agency (BNPB) recorded 3,383 natural disasters. With 949 incidents in the previous 11 months, extreme weather became the most common natural disaster, followed by floods with 942 incidents. Other natural disasters that occurred in Indonesia until mid-November 2023 included 813 incidents of

forest and land fires. There have also been 472 landslides, 156 droughts, 25 earthquakes, 24 tidal waves/abrasions, and two volcanic eruptions. All of these disasters resulted in the suffering and displacement of 6.99 million people, the injury of 5,572 people, the death of 213 people, and the disappearance of 15 people. The disasters also caused damage to 27,440 houses, with 3,504 severely damaged, 4,264 moderately damaged, and 19,672 lightly damaged. The disaster also damaged 748 public facilities, including 364 educational facilities, 331 religious' facilities, and 53 health facilities (*katadata.co.id, 2023).*

Geographically, the highest number of natural disasters occurred in West Java (603 events), Central Java (490 events), South Sulawesi (212 events), East Java (197 events), and Aceh (193 events) until mid-November 2023.

Coastal areas are located below sea level, making them vulnerable to disasters caused by rising sea levels, which can inundate land and even cause sea floods. The latter refers to tidal floods that will gradually submerge coastal areas and small islands in various parts of the world, including Indonesia, particularly South Sulawesi.

According to a Climate Central US study, 23 million people in coastal Indonesia are expected to face annual flooding by 2050, a five-fold increase from previous estimates due to climate change this century. Furthermore, satellite data collected by Institut Teknologi Bandung (ITB) or Bandung Institute of Technology, over the last 20 years, predict that sea-level rise in Indonesian waters is estimated to be three to eight millimeters per year. Meanwhile, land subsidence is expected to be more severe, ranging from one to 10 centimeters per year. In fact, in some areas, the decline has been as high as 15 to 20 centimeters per year. Falling groundwater levels, rising sea levels, destruction of mangrove ecosystems, and exploitative development supported by irresponsible legislation that does not prioritize people or ecological sustainability, such as the Job Creation Law (UU Cipta Kerja), will exacerbate the community's current and future vulnerability.

The impact of sand mining

Flooding and abrasion

Flooding and abrasion along the Takalar coast, including in Ujung Baji, were exacerbated by land and sea sand mining from 2017 to 2021 to meet Makassar city's infrastructure and reclamation needs. In particular, the Sangkarrang/Spermonde block sea sand mine resulted in abrasion which has severely affected at least 2,160 families in six villages in Takalar Regency. In addition, abrasion disasters have affected 1,100 families, primarily in the villages of Ujung Baji and Laguruda (*CakrawalaInfo,2020*).

Ujung Baji has become a target for sand hunters pretending to be pond developers. Residents of the village have reported that from 2017 to 2018, 140 trucks routinely carried off sand material from the village every day.

Sand mining has been propping up numerous development projects in Makassar, including reclamation projects, the construction of business centers in the Provincial Strategic Area, and supplying the material requirements of the National Strategic Projects (PSN). Notwithstanding its documented negative impacts, another sea sand mining concession covering an area of 9,327.84 hectares in Takalar and Ujung Baji village, Sanrobone sub-district is planned for the sea sand mining zone by virtue of the Provincial Regulation on the Zoning Plan for Coastal Areas and Small Islands RZWP3K and the Regional Regulation on the Regional Spatial Plan - South Sulawesi Provincial Spatial Plan No. 03 of 2022.

Furthermore, the re-establishment of the Sangkarrang archipelago, which borders Takalar Regency, as a mining business license concession governed by a highly capitalistic structural spatial policy will put tens of thousands of fisherfolk and peasant families along the district's coast in jeopardy.

Decline in seaweed production

South Sulawesi Province is Indonesia’s foremost seaweed producer by volume, supporting the livelihoods of over 35,000 coastal households

(*BPS, 2020*). The province produces 3.66 million tons of seaweed per year, accounting for more than one-third of Indonesia's seaweed volume, 11 percent of the global supply, and more than 20 percent of the global supply of seaweed-derived hydrocolloids.[2]

Luwu, Takalar, Wajo, and Pangkep were the four largest seaweed-producing regencies in 2021. Takalar Regency as a whole has an area of 8,046.613 hectares dedicated to seaweed cultivation. With a land area of 175,618 hectares, Ujung Baji village is one of the foremost seaweed-producing centers (*DKP Takalar, 2023*).

In 2017, the Takalar Regency produced 996,550 tons of seaweed. In 2018, production dropped to 538,680 tons. With the 455,198 tons produced in 2019, the percentage decrease was greater than 15 percent. Moreover, during the COVID-19 pandemic in 2020, seaweed production fell dramatically to 409,207 tons. Despite an increase in output, the production achievement in the first semester of 2023 was 376,348.1 tons. According to discussions with the KPA, fisherfolk, and peasants, the causes of the decline of seaweed production include warmer seawater temperatures, long droughts, extreme weather/ storms, pollution from waste generated by a shrimp company, and tidal waves and abrasion, which are becoming increasingly concerning year after year.

Other economic losses

According to findings of the KPA assessment involving Ujung Baji peasants and fisherfolk, the economic impact of abrasion and tidal flooding in Ujung Baji has amounted to as much as US Dollar 25 billion. This includes the loss and damage of the lands of peasants and fisherfolk, and the persistently low crop yields following the damaging events.

In 2023, sea water intruded into the ponds, and people's homes were submerged in floods of 50 centimeters to a meter. Fisherwomen suffered great economic losses when abrasion and flooding affected their production of acetes (rebon shrimp) and shrimp paste, pandanus

[2] Seaweed-derived hydrocolloids mainly include alginate, carrageenan and agar, which are important parts of the food ingredient industry.

mats, flooded rice, and oyster/shellfish products. Furthermore, the well water has become polluted and discolored.

Community responses to mitigate and adapt to disasters caused by sand mining

The situation faced by the Ujung Baji - Takalar Peasant and Fisherfolk Community as a result of natural disasters and the threat of losing their living space and agrarian resources has increased their awareness and decision to act. Since 2019, the community and various elements have been working to save the coast by planting mangroves. This planting is done both by the community members on their own and with the assistance of the local government. Community members also build abrasion barriers to preserve the coastal environment as well as to protect their houses. However, these efforts might not be enough to withstand the effects of severe abrasion.

The Ujung Baji peasant and fisherfolk community, particularly the women, have also been doing their part to protect their environment. They are cleaning up the river estuaries, and young people in particular are cleaning up the beach to restore it to its former glory as a tourist destination before it was destroyed by mining and abrasion.

Agrarian and resource reform at the center of Takalar's environmental movement

The Takalar Regency has been in the spotlight in the last 15 years due to several prolonged agrarian conflicts. Beginning in the early 1980s and reaching a peak in 2008, peasant lands in the North and South Polongbangkeng sub-districts were illegally seized by the PTPN XIV sugarcane plantations.

Further dispossession of peasants has taken place in the last 13 years as sand mining companies in collusion with village governments expropriated lands to mine sea sand to support the construction of huge development projects, including the Center Point of Indonesia and the Makassar New Port (PSN) National Strategic Project. Besides defrauding the peasants, massive sand mining has caused the severe abrasion of Takalar's coast. More conflict is expected to result from the construction of the 640-hectare Pamukkulu dam in North

Polongbangkeng, which is also on the agenda of a 1.6 trillion-rupiah National Strategic Project. In addition, a 3,500-hectare Takalar Industrial Estate, a National Strategic Project covering five villages in the Laikang sub-district's coastal area, will be built.

The mining resistance movement in Sanrobone Sub-district began in Paddinging Village in 2010, in response to the damage to and destruction of productive rice fields, transforming them into mining puddles. This resistance movement continues to gain strength despite opposition from mining actors backed by the police, from Village Governments that are acting as mining brokers, and from self-interested community members. In fact, the resistance has expanded to other villages in the Sanrobone sub-district, culminating in 2013 with the holding of an Independent Field School for Organic Farming attended by 25 women and men. Following the field school, participants worked with KPA to conduct an assessment and participatory mapping of mining areas. They found that a total of 53 hectares of productive rice fields have been lost in Bonto Panno and Bonto Beru hamlets, resulting in the deaths of two people: an 11-year-old disabled child and an adult.

The resistance movement achieved greater heights in 2015, including the formulation of the Natural Agriculture Strategy to Save the Last Rice Fields with the collaboration of KPA South Sulawesi. In 2018, they also succeeded in establishing SEPAKAT, a women peasant organization composed of alumni of the Takalar School for Women Peasants. In addition to women from Paddinging village, women from the communities of Ujung Baji and Banyuanyara in the Sanrobone sub-district attended this school. Finally, Sepakat Pesisir was founded in 2019, with the coordinator being an alumnus of Sepakat Paddinging.

Responses by the authorities

Allocation, use and management of land/resources

The South Sulawesi provincial government has disbursed a budget of Indonesia Rupiah (IDR) 15 billion for the construction of walls to address the impact of severe abrasion on seaweed cultivation and to reduce the threat to houses in the coastal sub-districts in Takalar,

Lack of tenure security in Ujung Baji village

According to 2021 data on the Ujung Baji village, 65 percent of the population is classified as poor. One of the most important factors causing the high poverty incidence in the village is the unequal distribution of agricultural resources.

Fisherfolk and seaweed peasants hold only small plots of land, most of which is untitled. At the same time, the use of the village land for seaweed cultivation is unregulated: the first ones to stake a claim on the land and who have the capital to cultivate it can continue using it and can even expand their land. Fisherfolk and seaweed farmers who find themselves in dire straits are forced either to sell the land, if they own it, or give up their user rights. They then end up working as seaweed nursery workers or peasants in neighboring villages. Some of the men find work in the city as construction workers.

In the meantime, accretion lands, called deltas, which are growing in size and number, can be titled and sold to elite groups with powerful connections in the village government. Ponds are controlled by elite interests by as much as 80 percent.

Rice fields are primarily rainfed, and yard lands are likewise unproductive and left idle in the dry season, forcing peasants and fisherfolk to solely rely on the sea for a living. It is no surprise that the peasants and fisherfolk in Ujung Baji, while still comprising the majority, are gradually declining in number every year.

However, if properly managed, abandoned lands and yards can have significant economic value. In KPA-facilitated discussions on land use, peasants and fisherfolk talked about which lands could serve as demonstration plots for the growing of basic needs, such as vegetables. The KPA assessment showed that if one household spends IDR 10,000 (USD 0.63) per day to buy vegetables, chilies, and tomatoes, that translates to a spending by the villagers of IDR 300,000 (about USD 19) per month on such food items. When multiplied by Ujung Baji's 900 households, the villagers would be spending IDR 270,000,000 (USD 17,072) per month, or IDR 3.2 billion (USD 202,336) per year. This would make the case for maximizing the use of the village's often idle land.

The Takalar Women Peasants Union, which was founded in 2017, has been leading a movement to promote natural agriculture and the use of yard land to grow vegetables for some time, but they have yet to scale up their efforts. In addition to the issue of land utilization for daily needs, Ujung Baji peasants and fisherfolk, as well as the villagers in general, have agreed to set up conservation locations, particularly at the river mouths, which are also used by women in this village to collect oysters and clams.

In collaboration with KPA, Ujung Baji peasants and fisherfolk are currently collecting data on cultivated land tenure to determine the extent of inequality caused by unequal and unfair agrarian power relations.

including Ujung Baji village and Sanrobone sub-district. As the construction of the abrasion retaining walls is still underway in severely eroded villages, the government has assisted in mitigating abrasion disasters. This effort, at the very least, can protect the property rights of peasant and fisherfolk communities, such as houses and yards, that are threatened by disasters.

Aside from budget support for the construction of the abrasion wall, the provincial government has also mapped 19 mangrove spatial areas spread across several regencies, including Takalar. The government, in collaboration with the Department of Marine Affairs and Fisheries, as well as all elements of society, including the private sector, are encouraged to take an active role in planting mangroves in coastal areas for ecological restoration and protection, as well as to increase the economic value of coastal communities.

The South Sulawesi Provincial Government, the Governor, and the Provincial Legislative Council (Dewan Perwakilan Rakyat Daerah or DPRD) passed the 2024 Basic Budget in November 2023. This budget earmarks funds for solutions to environmental change, climate change, prolonged El Nino, and regions that are currently facing major challenges, including food supply shortage. The South Sulawesi Regional Budget's primary goal is to improve the agriculture, livestock, marine, and fisheries sectors. Peasants, fisherfolk, and cattle breeders are the subjects to be targeted. People's Business Credit (KUR) in the

amount of 30 trillion Rupiah will also be made available as soon as possible. This is also related to maximizing the use of abandoned and unproductive idle lands to increase production and promote the welfare of peasants, fisherfolk, and cattle breeders, including the Ujung Baji peasants and fisherfolk community.

Since 2019, the National Government and the Agrarian Reform Task Force have distributed approximately 2,500 land certificates for the recognition of land ownership rights, with 1,000 of them in the Sanrobone sub-district as part of the Complete Systematic Land Registration (PTSL) program. Meanwhile, the National, Provincial, and Regency Governments, in collaboration with academics, non-governmental organizations (NGOs), and cooperative business activists, have provided both capital assistance and innovative knowledge on seaweed development to adapt to climate change, which affects production and causes peasant losses.

Lessons and insights

The link between land tenure and climate change adaptation

Agrarian problems have resulted in structural inequality and poverty. The current pattern and orientation of development, which is capitalistic, allows financiers and elite groups to control land and other agrarian resources. Peasants, fisherfolk, indigenous peoples, the urban poor, women, and rural agrarian communities are deprived of their means of subsistence.

Increasingly liberal agrarian policies have exacerbated conflicts and caused massive environmental damage. Disasters happen everywhere because concessions are easily granted. Mining (on land, at sea, and on the coast), large-scale plantations, and industrial forest plantations result in the displacement of people and degradation of the environment. According to the 2023 Agricultural Census, there are 16.89 million smallholder peasant households in Indonesia, an increase of 18.54 percent from 2013, when the number was 14.2 million. In the province of South Sulawesi, 1,010,912 households make a living from agriculture, with 42.21 percent of them being smallholders. Their number has increased by 69.72 percent in the last 10 years, and is the highest recorded in the island of Sulawesi.

Meanwhile, there are 34,958 farming households in Takalar Regency, of whom 66.48 percent or 23,240 families are smallholders. The data cited indicates that land ownership and cultivation are narrowing, shrinking, and even disappearing on a national, provincial, and district-wide scale. This is undoubtedly related to the structural policies issued by the State and government during each administration.

Ujung Baji Village, as one of the seaweed-producing areas, requires the support of various parties to ensure the sustainability of peasants' and fisherfolk's lives and livelihoods. The Gigaz and Lawi-Lawi types of seaweed are improved varieties that are more resistant to the changing climate and to pests. Thus, seaweed production is expected to increase, providing economic value to seaweed peasants and fisherfolk in this village. All parties must encourage the improvement of peasant and fisherfolk communities' knowledge and capacity so that they can adapt to and survive the effects of future disasters. A halt to the creation of new ponds and restoring mangrove forests which are coastal protective belts will mitigate the negative effects of climate change, including marine resource destruction, hunger, poverty, and agrarian inequality.

Recommended policies and programs

First: as an agrarian rural community, the peasants and fisherfolk of Ujung Baji village must quickly adapt and carry out continuous innovative mitigation efforts while preserving and practicing their social, cultural and spiritual values. Furthermore, transforming the community into a strong people's organization capable of fighting collectively will be the primary capital required to address current and future tenure issues and disasters. Data on agrarian inequality, power relations, and the potential of agrarian resources in coastal villages to benefit communities when managed for the common good, must also be presented fully and completely. Village deliberations should include all stakeholders, including women, peasants, fisherfolk, village youth, existing groups such as cooperatives, and peasant groups, with a view towards formulating a fair and sustainable development concept, which will then become the basis of a Village Medium-Term Development Plan document. The following steps are recommended: (1) completing the agrarian data for landless people, peasants, and uncertified assets (rice fields, gardens, ponds, houses, among others);

(2) teaching the community how to manage vacant and rainfed land so that they can produce crops throughout the season through natural agriculture; (3) exploring and mapping the knowledge and capacity of coastal women towards the development of a just, sovereign, and sustainable village; and, (4) promoting tenure advocacy in Agrarian Reform Priority Locations with strong and independent people's organizations.

***Second**:* the National, Provincial, Regency, and relevant Ministries (ESDM-KKP) must review, halt, and remove the concession allocation from the Provincial Spatial Plan Regional Regulation No. 03 of 2022, which covers an area of 9,327.84 hectares. Mining for sea sand has made the situation and conditions of coastal communities and environmental ecosystems extremely vulnerable. Research shows that 23 million people in coastal Indonesia are expected to face annual flooding by 2050. Disasters will destroy homes, cultivated lands, and villages/cities, resulting in serious agrarian conflicts as tens of millions of people lose their livelihoods and are forced to flee their villages. Hunger, poverty, food insecurity, crime, social conflict, and other negative consequences will become intractable problems. Stopping destructive activities and protecting agrarian resources for the benefit of people and environmental sustainability are far more beneficial and rewarding on a social, economic, and ecological level. These safeguards must be strengthened through structural policies at both the local and national levels. It is past time for the State to stop caving in to the interests of financiers who have monopolized Indonesia's natural resources while causing disasters elsewhere.

Genuine agrarian reform is the only way to achieve social and environmental justice. Indonesia has a solid legal and constitutional foundation, which includes the Constitution, the Basic Agrarian Law, and TAP MPR IX/2001. This agenda inspired the nation's founders and leaders, who were committed to transform Indonesia's land tenure structure from a colonial and feudal system that robs and oppresses into a dignified and just land system for 270 million Indonesians. The President, as the leader of the executive, legislative, and judicial branches, must revoke and suspend policies that promote liberal and capitalist-oriented agrarian reform in order to serve the interests of the community of peasants and fisherfolk in Ujung Baji village, whose

lives are monopolized and controlled by elite groups, feudal figures, entrepreneurs, and sand mining operators in their area.

Third: KPA and other civil society organizations (CSOs) must fight alongside people to achieve gender and intergenerational justice. They must criticize, straighten out, and urge the government, as the party with the authority to carry out the constitutional mandate, to ensure justice and sovereignty for the people. They need to conduct grassroots education and share knowledge that promotes the struggle of peasants in particular and the public in general.

Fourth: The international community must also actively support the people's struggle for tenure rights and environmental protection. The threat of disasters caused by climate change will become a regional and global issue, especially since the Indonesian government's policies are inextricably linked to the global political and economic cooperation system. The international community must collaborate to push for the advancement of the rights of communities worldwide. Tenure rights for peasants, fisherfolk, indigenous peoples, women, children, urban poor, coastal communities, and other vulnerable groups must be recognized, protected, and respected as part of human rights. ■

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THEME 4:
Coping with risks and preventing disputes
How those with secure tenure are less likely to be at risk of land disputes, which may affect their adaptive capacity

Communities face off with a river that swallows lands and homes

A case study of river erosion in Yusuf Matubbarer Dangi Village in North Channel Union of Faridpur District, Bangladesh

Prepared by Shanjida Khan Ripa, Association for Land Reform and Development (ALRD)

—In June 2023, heavy rains caused the waters of the Padma River to swell, sending waves smashing violently against the banks of three villages, namely Yusuf Matubbarer Dangi, Shukur Ali Mridhar Dangi, and, Eman Ali Dangi under the North Channel Union of Faridpur Sadar Upazila, in Faridpur District, Central Bangladesh. In 10 days of unremitting river erosion, the homes of 102 families were washed away while some 10 acres (four hectares) of crop land were inundated by the river in Yusuf Matubbarer Dangi village.

This was not the first time that the Faridpur District had suffered devastation wrought by the Padma — the Gangetic delta, one of the major rivers of Bangladesh, along with the Jamuna and Brahmaputra Rivers. Over time, some 500 acres of land (65 acres in Decreer Char, 176 acres in North Channel, 155 acres in Char Harirampur; and another 104 acres have reportedly been lost due to river erosion

Key Messages

- The social and economic impact of climate-induced disasters on vulnerable families has been devastating. They have been forced to abandon their ancestral profession and migrate to cities in search of alternative livelihoods. They are not covered by social security programs of the government, largely because they have no permanent address. Nevertheless, it is the responsibility of the government to fulfill the basic rights of people displaced due to river erosion.
- During the consultation organized by ALRD, the residents of Yusuf Matubbarer Dangi Village decried the "massive complications" resulting from displacement from their homes, particularly concerning their livelihoods. They are applying adaptation strategies to boost their livelihood resilience against climate change. However, fragile housing, financial constraints, and lack of their own land are the greatest impediments to the sustainability of their adaptation efforts.
- The community is advocating for the distribution of *khas* lands to enable them to recover from the losses they have suffered as a result of disasters. Access to *khas* land is expected to increase the adaptability of affected communities to face the risk of climate change, especially if land distribution is accompanied by training and financial assistance in aid of implementing income-generating programs.
- There are limited opportunities for members of the community to participate and provide feedback on climate adaptation programming. People do not even feel comfortable providing feedback. Community members say many vulnerable people are left out of adaptation programs, citing favoritism and mismanagement.

(Ghosh, 2022). Between 1988 and 2013, the Padma River eroded 66 villages in Charbhadrasan Upazila, a small subdistrict in Faridpur (Ghosh, 2022). More recently, in 2022, 114 houses and 1,000 acres (404.68 hectares) of crop lands in four villages of Decreer Char Union Parishad were swallowed up by the river.

River erosion in low-lying Bangladesh has emerged as an extreme threat to people living near the riverbanks. The major rivers — the Jamuna, the Ganges and the Padma — change course naturally and in the process erode thousands of hectares of floodplain land and destroy

crops, homesteads, agricultural lands, roads, and other infrastructures.

However, climate change is accelerating these natural processes, adding complications and increasing the severity of river erosion.

It is estimated that by 2050, the rate of bank erosion along the three main river systems will increase by 13 percent, and by 2100, by 18 percent (Aktar, 2013). As a result, some 15 to 20 million people living in these areas would lose their homes, lands, and area-specific livelihoods (LightCastle, 2022).

Bangladesh in peril

Bangladesh is the seventh most vulnerable country in the world to climate change (Local Government Division – Ministry of Local Government of Bangladesh, 2023). Its vulnerability stems from its geographical location, topography, high population density, and heavy reliance on agriculture. Flooding, which always results from riverbank erosion, is a serious hazard that directly or indirectly causes the loss of lands and resources as well as untold suffering for millions of people. The Sixth Assessment Report (AR6) of Working Group II (WGII) of the Intergovernmental Panel on Climate Change (IPCC), which was published on 28 February 2022, noted the economic and non-economic losses caused by flooding on Bangladesh: around 850,000 households and 250,000 hectares of harvestable lands have been lost due to climate-induced disasters. The loss of agricultural land has also resulted in crop failure, raising the price of rice by 30 percent between 2014 and 2021 (Huq, et al., 2022).

Bangladesh now faces more frequent tropical cyclones, tidal surges, floods, high temperatures, and changes in precipitation patterns. About 10,000 square kilometers of the total area of Bangladesh are covered with water, making it very prone to river erosion and soil degradation (LightCastle, 2022).

According to a report of the Food and Agriculture Organization of the United Nations (FAO), 22 percent of rural households in Bangladesh are already affected by floods and 16 percent suffer from river erosion (FAO et al., 2023).

In the past 22 years, the Padma River has eroded 25,290 hectares, and the Jamuna River, 25,665 hectares, or a total of 50,955 hectares of land lost to just these two rivers, according to the Centre for Environment and Geographic Information Service (CEGIS). As a result, CEGIS said that over half a million people became homeless due to erosion of the two rivers in the past 22 years (The Daily Star, 2023).

The Bangladesh Centre for Environmental and Geographic Information Services (CEGIS) notes that every year, Bangladesh loses 32 square kilometers of land due to erosion in rivers. In its recent report, "Prediction on Riverbank Erosion 2022," the CEGIS identified 17 vulnerable locations across 12 districts, including Faridpur, all of which are located on both banks of the Jamuna, the Ganges, and the Padma rivers. If the CEGIS's forecast is correct, these 17 locations are in danger of being completely wiped out by the Padma, Meghna, and Jamuna rivers, including their adjoining rivers. Furthermore, the CEGIS warns that about 1,800 hectares of land, homesteads, roads, dams, educational institutions, bazaars, cemeteries, orphanages, and other infrastructures will no longer be a part of Bangladesh's map.

Similarly, the World Bank (WB) estimates that by 2040, cropland may shrink by 18 percent in Southern Bangladesh — which is home to a rural population numbering 19,907,094, according to the 2022 Population Census. The number of rural poor in Southern Bangladesh is at least 3,981,418 (estimated by the author). As a result, says the WB, one-third of agricultural Gross Domestic Product (GDP) could be lost by 2050 (Rita, 2022).

The social and economic impact on vulnerable families has been devastating. They have been forced to abandon their ancestral profession and migrate to cities in search of alternative livelihoods. They are not covered by social security programs of the government, largely because they have no permanent address. Nevertheless, it is the responsibility of the government to fulfill the basic rights of people displaced due to river erosion, including food, clothing and shelter. The government can also distribute *khas* land to the landless, destitute poor. This can help to alleviate the severity of climate change impacts on lives, livelihoods, agriculture, and food security.

Faridpur District: Ferocious river and massive losses

Faridpur District, located in Central Bangladesh, is an agricultural region that contributes significantly to the annual food production of Bangladesh. Faridpur is highly susceptible to the impacts of climate change due to its low-lying topography and heavy reliance on agriculture. More frequent and intense rainfall events, resulting in increased flooding and river erosion, can displace rural marginalized communities, damage infrastructure, and disrupt agriculture. For instance, between 1988 and 2013, the river Padma eroded 66 villages in Charbhadrasan Upazila, a small sub-district in Faridpur (Ghosh, 2022).

River erosion: The case of Yusuf Matubbarer Dangi Village in North Channel Union of Faridpur

The Faridpur Sadar Upazila (or sub-district) of Faridpur district covers an area of 14.60 square kilometers and is home to 57,069 agricultural families (Bangladesh National Portal, n.d.) who make their living from agriculture and fishing. North Channel, one of the unions of Faridpur Sadar sub-district, is located on the banks of the Padma River. This union has thus experienced severe bank erosion. Hydro-meteorological disasters (HMDs) occur regularly and to different degrees in the sub-district, becoming extreme during the monsoon period.

Every year, villages of the North Channel Union are affected by devastating river erosion during the rainy season. The Chartepara village and several parts of the Shukar Ali Mridhar village have disappeared under the Padma River. Houses, crop lands, schools, madrasas, mosques, and paved roads, among others, have been submerged in the river.

The people who have lost their homes and crops have taken shelter in the neighboring villages of Kaimuddin Matubbarer Dangi, Sultan Khan Dangi, and, Usuf Matubbarer Dangi. Every day, the erosion of the Padma breaks the dreams of people as their fortunes sink. They are forced to dismantle the house that they have built with their own hands and to move elsewhere.

Last June 2023, the water level of the Padma River began to rise again, triggering bank erosion and threatening the three villages of North Channel Union of Faridpur Sadar sub-district, namely, Yusuf Matubbarer Dangi, Shukur Ali in the Mridhar Dangi, and, Eman Ali Dangi.

Loss and damage

According to the North Chanel Union Parishad office, of the 1,000 people living in Yusuf Matubbarer Dangi village, five percent are landless. Majority of the members of the village depend on land, engaging in agriculture and fishing as their main source of livelihood. Riverbank erosion in the village impacts hundreds of people as it results in damage to houses and loss of crops, cattle, and, farmland. Additionally, it erodes away public infrastructure and communication systems in the village. A member of the local government of North Chanel Union Parishad reported that 102 families in Yusuf Matubbarer Dangi village have become destitute, and at least 100 acres (40 hectares) of croplands have disappeared under the river in 10 days from 26 June to 6 July 2023 due to river erosion.

Having lost their land due to river erosion, most of the population are "temporarily landless" until they can acquire new land emerging from the river. On one hand, river erosion engulfs land on riverbanks, while simultaneously raising several acres of land from alluvial accretion in rivers, on the other.

However, people who have lost their land to river erosion cannot automatically occupy this newly created land, which is classified as *khas* land. *Khas* land, which is usually owned by the Government, includes land reclaimed from the sea or from changing river courses. The *Khas* Land Management and Settlement Policy, 1997, provides that *khas* land can be distributed to, among others, families who have lost their land due to river erosion. In practice, however, this provision is not automatically nor easily enforced.

Responses by the community

During a community dialogue organized by the Association for Land Reform and Development (ALRD) with the help of Beneficiaries

Friendship Forum (BFF) — the networking partner organization of ALRD in Yusuf Matubbarer Dangi village — the community members reported that they are now living on other people's land, in different villages of the North Chanel Union — including the neighboring villages of Kaimuddin Matubbarer Dangi, Sultan Khar Dangi and Yusuf Matubbarer Dangi -- and paying an annual lease fee. They have no access to *khas* land.

A total of 15 women participated in the dialogue. All are victims of river erosion and have migrated to other areas. Most of them are still engaged in farming as day laborers on different farmlands. Some community members have put farming aside to make a living as rickshaw pullers.

During the consultation, the people decried the "massive complications" resulting from displacement from their homes, particularly concerning their livelihoods. They are applying adaptation strategies to boost their livelihood resilience against climate change. However, fragile housing, financial constraints, and lack of their own land are the greatest impediments to the sustainability of their adaptation efforts (Hossain, Babul, 2022).

Several residents of the erosion-affected area in Yusuf Matubbarer Dangi village said that river erosion has been increasing in the last two years. If a permanent dam is not constructed, they fear those other infrastructures, including many houses, will be devoured by the Padma River. They reported that in place of the dam, the Water Development Board is temporarily installing sand-filled geo bags along the banks to stop erosion but this is not going to solve the problem.

The community members are advocating for the distribution of *khas* lands to enable them to recover from the losses they have suffered. In Faridpur District, as well as in the rest of the country, access to *khas* land is expected to increase the adaptability of affected communities to face the risk of climate change, especially if land distribution is accompanied by training and financial assistance in aid of implementing income-generating programs.

Char land formation

The 147,570 square kilometer terrain of Bangladesh, which mainly consists of deltaic and floodplain formations, is one of the most rapidly changing landform systems in the world. A floodplain is a relatively flat area that is inundated by water during high flows, resulting in the deposition of silt in the floodplain to form a new island, commonly known as *char* land. Historically, human occupancy of this type of land has been marked by recurrent displacements, multiple movements and resettlements, and continually adjusting cropping patterns.

Unfortunately, the community members were not hopeful that they would get access to the *char* land, citing three reasons. Firstly, river erosion is very common and thus, people are constantly afraid of losing their land in the process. Secondly, influential people are able to grab the agricultural *khas* lands using fake documents. Finally, lack of knowledge on land documents and laws prevents the landless poor from securing land tenure security. As a result, most of the *khas* lands are controlled by a few affluent farmers, while the larger number of marginal farmers make do with a small number of lands that emerged following a riverbank erosion in the studied area.

Responses by authorities

Faridpur Sadar sub-district Executive Officer Liton Dhali said that the Faridpur district administration has given out cash to the victims of river erosion, along with a package of roofing materials to rebuild their houses, baby food, and cow feed. Chairpersons of the concerned unions have been asked to provide the list of affected families. If necessary, assistance would be provided to the families on the list. Their plans to build permanent embankments to prevent river erosion are in the proposal stage and have been submitted to the ministry. Dhali also said that "houses are given to the landless under the government's shelter scheme, called "Ashrayan Prokolpo." However, he claimed that people are not willing to live in those houses because there are no livelihood opportunities nearby. Dhali said that in 2022, an initiative was taken to build 25 houses in this union under the

shelter scheme, *"but it did not work as that land has also been eroded by the river."*

North Channel Union Parishad Chairman Mofazzel Hossain said that they have prepared a list of the affected people and that erosion prevention work is ongoing in limited areas. However, they have not been able to keep up with the prevalence and extent of erosion.

Not once nor twice, Fuljan Bibi displaced seven times

Elderly Fuljan Bibi was the proud owner of a large property that stood on the bank of the Padma River in Chartapra village of North Channel Union under Faridpur Sadar Upazila (sub-district).

In 2018, the large house she built for her family was devoured by the river Padma, the largest river in Bangladesh that is known for its strong, rough currents. Fuljan and her family became homeless.

Fuljian has lost her home not once, but seven times. Each time, she had built a new house by her own hands. No one, including anyone from the government, had provided any assistance. *"People from many NGOs and the Water Development Board visited me to listen to my suffering and to take pictures, then left,"* said Fuljian.

Fuljian built her seventh home in Yusuf Matubbar Dangi village in 2021. She lives there with her two elder sons and their families. They make their living as day laborers and rickshaw drivers.

She said, *"Once I had cows and goats at home, but I sold them all. Cows and goats should not be reared for thieves and robbers. The robbers can easily come and steal the cows by trawlers as my house is near the river. We are in great suffering; no man can bear such suffering."*

Recently, staff of the ALRD and its local network partner organization BFF visited Yusuf Matubbarer Dangi village and saw that the river erosion had started again. They witnessed the Water Development Board deploying geo-sandbags to mitigate the erosion temporarily.

The executive engineer of Faridpur Water Development Board, Partha Pratim Saha, said that a total of 13,130 sand-filled geo bags have been dumped in two places in the erosion area. He said that after discussions with the authorities, a plan for a permanent dam across the one-kilometer area is underway.

On 28 May 2023, the erosion started again, affecting a two-kilometer stretch of land along the riverbank. As a result, 10 acres (four hectares) of crop land were lost.

Fuljan Bibi will be displaced for the eighth time if the river erosion is not arrested.

Every day, the erosion of the Padma River shatters the dreams of people as their fortunes sink. They are forced to dismantle the houses that they built with their own hands and to move elsewhere.

Equitable distribution of *khas* land: Vital to community adaptation and resilience to climate change

During the British colonial rule, Bangladesh was characterized by significant land inequality and tenure insecurity. After gaining independence in 1971, land reforms were implemented to address this issue. However, the implementation of these reforms has been complex and challenging due to various factors, including poor implementation, corruption, high population density, socio-economic disparities and resistance by powerful landowners.

Land tenure systems in Bangladesh have evolved over time and can be broadly classified into three main categories: ownership-based tenure, sharecropping, and *khas* Land.

Khas land refers to government-owned land that is distributed to landless and marginalized individuals or communities. In rural areas, 89 percent of landholders own less than one hectare, and 39 percent

have less than 0.2 hectare (LANDac, 2019). A large proportion of the rural population in Bangladesh are landless, relying on agricultural wage labor for their income; have only a small plot of land; or are tenants or sharecroppers.

The major sources of *khas* land include land reclaimed from the sea or from changing river courses, land held in excess of the landholding ceiling, and land acquired due to cancellation of ownership, among others. *Khas* land is managed by the Ministry of Land.

According to the *Khas* Land Management and Settlement Policy, 1997, as well as according to the spirit of the Constitution of Bangladesh, access to *khas* land is the right of the landless marginalized poor people. Moreover, the Land Reforms Ordinance, 1984, section 7, talks about making *khas* land available for a homestead. Section 7(1) states that

> *"[I]n the rural areas if any khas land fit for being used as a homestead is available, the government shall, in setting such land, give preference to landless farmers and laborers."*

Under the *Khas* Land Settlement Policy, agricultural *khas* land can be distributed for a 99-year lease period.[1] Under the policy, landless families (defined as those who own less than 0.10 acre or 0.04 hectare) who work in agriculture should be the main beneficiaries with priority going to poor families of freedom fighters, families who have lost their land due to river erosion, landless families without a homestead, and families who have lost land due to government expropriation.

Recent officially published statistics on *khas* land are not available. However, it is estimated that in the last 20 years, the amount of *khas*

[1] Details on the process of applying for *khas* land and roles of various government officials and committees are available in English here: http://www.uttaran.net/publications/khashlandsettlement.pdf

land has ranged from 1.69 million acres (683,919 hectares) to five million acres (2,023,428 hectares).

According to government sources, not all *khas* land is worthy of distribution and that of the total *khas* land an estimated 17.3 percent is non-distributable (Barkat et al., 2020).

There is no available data on how much *khas* land has been distributed to landless and other poor families. However, only 11.5 percent of the agricultural *khas* land is reportedly held by people who rightfully deserve it and that the remaining 88.5 percent of agricultural *khas* land is under the control of powerful people, who are not eligible under any criteria of the *Khas* Land Settlement Policy (Barkat et al., 2022).

Key issues related to land tenure and climate change

- There is no authenticated information about the number of river-eroded displaced people of the Faridpur Sadar Upazila. In order to find out the actual number of displaced people, apart from official survey or research, the displaced people should be brought into the monitoring process by involving the local government. Besides, it is essential to create a database of landless marginalized communities under the supervision of the local government. The list should be updated every year. With such a database, the corruption that takes place in the preparation of the list of landless people at the local level can be reduced.
- There are limited opportunities for members of the community to participate and provide feedback on climate adaptation programming. People do not even feel comfortable providing feedback.
- Adaptation programs are deemed unfair. Community members say many vulnerable people are left out, citing favoritism and mismanagement.

- The rural population affected by river erosion are skilled and have practical indigenous knowledge. Farmers who are skilled in agricultural production have the ability to produce large amounts of crops on a small amount of land. If they are given their own land, they can contribute to the development of the country. Therefore, government land should be systematically distributed to the landless. Employment should be created through special projects. Apart from assistance provided through social security programs, people who are forced to migrate as a result of land loss should be assisted in finding new livelihoods.
- Local governments are not adequately capacitated nor engaged in the planning process of climate action. They have no actual data or information about the number of climate migrants, nor even regarding government support and further action to protect the climate vulnerable community.
- Land ownership of the poor and destitute is very low. The landless in rural areas are economically and politically powerless. They are also deprived of higher education and cannot get out of the vicious cycle of hereditary poverty. These people are the most vulnerable to climate change impacts. Although they receive some benefits from the government's social security program, it is not enough to lift them out of poverty and marginalization.
- There are several mega projects planned in Bangladesh that are likely to take over *khas* lands. These projects are expected to displace thousands of people from their homes and livelihoods, many of whom are already struggling to cope with the impacts of climate change. These mega projects are often developed without adequate consultation with the communities that will be affected, and without proper consideration of the projects' social and environmental impacts. This lack of community engagement and participation can lead to conflicts and tensions between project developers and affected communities, which can further exacerbate the vulnerability of the latter to climate change impacts.

Call to action

- Tenure security, in a variety of forms, should be provided to improve land access for the poor, and to strengthen their negotiating position.
- All new accretion of *char* lands should be brought under government control/supervision. The number of char lands at the district level and all over the country needs to be updated each year.
- The Diara survey of *char* land should be done quickly, with the participation of civil society and local farmers.
- Efforts must be made to involve the communities that are most vulnerable to climate change in all environmental programs, including those that are funded by the Bangladesh Climate Change Trust (BCCT).
- Every climate project should assess the need for coordination with other ministries, agencies, or organizations during the planning stage.
- Data related to climate projects should be gathered with accuracy and transparency, and made available to the public.
- To measure the impact of climate projects at different stages, it is important to collect baseline data on the potential beneficiaries.
- The traditional culture of Bengal pertaining to shelter — owning a house on a small piece of land, growing plants and vegetables, rearing cows and goats, among others — should be nurtured and developed by the government to replace the barracks-based shelter project culture. Houses are being built on *khas* land for the landless under the government shelter scheme. But because of the small amount of available *khas* land, there is no opportunity to implement any income-generating activities using that land. ■

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CASE STUDY

Tribal communities fight to lift the yoke of landlessness amid climate change

A case study of the Yanadi and Yrukula tribal communities in Andhra Pradesh State, India

Prepared by Rohini Reddy, South Asia Rural Reconstruction Association (SARRA)

The Yanadi and Yrukala tribal communities living in Andhra Pradesh State are two of India's Scheduled Tribes, or indigenous people who are outside of the caste system of India and are considered as socially disadvantaged.

The Yanadi and Yrukala tribes consist of over 300 families who together occupy about 4,856 hectares of land.

These tribes rely on the forest for their livelihood. They engage in hunting, fishing, small-scale farming, and collecting food and other non-timber forest products (NTFPs). In January to June, they migrate to mango-growing areas to work as farm laborers.

Majority of the tribal community members have little to no land that they can call their own. Of the 300 Yanadi and Yrukala families, only 15 to 20 percent, or 40 to 50 families, have a *patta*, which entitles them to work on assigned forest land. The rest of the families have no *patta*.

Key Messages

- The Yanadi and Yrukula tribes have not developed adaptation practices to help them cope with the impact of regular cyclones. However, they assert that they need a piece of land to build their home on and to grow food; and timely financial support to purchase seeds, fertilizers and plant protection farm inputs.
- These communities cannot always rely on aid from the government to help them cope with their disaster losses. Such aid could stop at any time, according to changes in government priorities.
- Gaps in research on the links between land tenure and food security must be remedied. Mixed methods are needed to analyze the complex casual linkages. Household-farm panel data collected over longer periods of time, combined with simulations, can also provide valuable insights about the linkages between tenure security and food security.
- Civil society organizations (CSOs) employ a variety tools and approaches to explain the link between land rights and food security, including awareness-raising campaigns, community mobilization and engagement; partnership building and networking; policy dialogues; and research and documentation, among others. At the same time, they educate the tribes on sustainable agriculture and support them, especially the women and the youth, in their adoption of natural farming techniques.

The *pattas* are not land titles that allow the holder to sell the land; they merely provide user rights to forest land, as provided for in the new Forest Rights Act. They are issued in the name of both husband and wife, and can be handed down to the children.

The *patta* lands are generally small: on average, about 0.2 hectare in size. However, families that are politically connected are able to get larger parcels from local government authorities.

Poverty incidence is high among the tribes. They belong to the poorest strata of society. Most of them suffer from low levels of education and have limited access to health care. Their children do not go to school; 99 percent of them are illiterate.

The Yanadi and Yrukala tribes have turned away from agriculture as a source of livelihood because it brings very little income. Like farmers in

the rest of Andhra Pradesh State, these tribes are generally smallholders and landless workers. Land fragmentation continues to reduce the croplands that they can use. Disputes over landownership are common in their community.

The impact of climate change, particularly extreme weather events that result in droughts and floods, has increased the difficulties of these farmers, driving them deeper into debt and poverty.

Climate change: The straw that breaks farmers' backs

Andhra Pradesh State has been hit by more than 60 cyclones since 1975. The most recent cyclones that swept over the State were Mandous (11 December 2022) and Mocha (4 May 2023). Cyclone Mocha affected many people, and flooded 973 villages in 105 mandals (local government areas).

In Tirupati District, 75,000 acres (over 30,350 hectares) of gardens and vegetable crops were destroyed, along with 1,400 kilometers of roads and 20 small water sources. In Venkatagiri and Balayapalli mandals, 80 percent of the rice crop planted on 12,000 acres (4,856 hectares) of land was lost. In addition, 1,400 kilometers of roads were destroyed; and 20 small water sources in Tirupati District were affected.

At least two to three cyclones batter Andhra Pradesh every year. Experts predict one more cyclone by the end of 2023.

Responses by the community

SARRA,[1] a training resource agency that is focused on promoting natural farming technologies in India, has been supporting the Yanadi and Yrukala tribes since 2018.

[1] SARRA was established in 1984 with a view to function as a training resource agency in the South Asia region for enhancing the proficiency levels of rural development agencies. Since 1990, SARRA has conducted several capacity-building programs in sustainable agriculture in the region in collaboration with the International Institute of Rural Reconstruction (IIRR) and the Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC), both based in the Philippines.

In the aftermath of Cyclone Mocha, SARRA provided relief assistance to the tribes by collecting donations from all over the sub-district. Affected families received a ration of rice, pulses, and oil.

SARRA has recorded no adaptation practices among the tribes. However, the latter have expressed their specific needs, including among others: (1) a piece of land to build their home and to grow food; (2) timely financial support to purchase seeds, fertilizers and plant protection farm inputs; (3) transport facilities; (4) safe drinking water; and, (5) a community shed where they can gather and hold discussions.

Responses by authorities

The Chief Minister of Andhra Pradesh, Y.S. Jagan Mohan Reddy, inaugurated a program in early 2023 to distribute *pattas* covering de-notified conditional land to beneficiaries.

Preparatory to this, the State government conducted a land resurvey program in Tirupathi District to address all issues relating to land ownership. Reddy said that the land resurvey will be completed by March 2024, following which borders will be marked, and *pattas* will be issued through the Sub-Registrar Offices in the villages. This program will cover hundreds of villages every month, and by the end of 2024, all of the 17,000 villages in Andhra Pradesh will be covered by the concerned government departments.

Current land policies, while good on paper, are poorly and slowly being implemented because of the lack of political will. In contrast, the transparent and accountable research being conducted by the academia, with the help of selected representatives from villages, self-help groups (SHGs), and civil society organizations (CSOs), is putting pressure on the government and building awareness among advocacy groups.

Assessment

Tenure security and resource rights enhance the communities' climate resilience, through the adoption of sustainable land management

practices, such as soil and water conservation measures, land use planning, natural farming and soil heath management, that can mitigate the effect of climate change.

Tenure security enables landholders to access climate finance, crop insurance, and climate grants. Landholders can engage in long-term planning, risk assessment and adaptation strategies. They can invest on reforestation, afforestation, and sustainable farming systems. Tenure security also encourages landholder to undertake biodiversity conservation and ecosystem management.

Tenure security can reduce the impact of climate-induced displacements and reinforce the practice of climate resilient sustainable practices that can improve the lives and livelihoods of small landholders.

Authorities can improve their response to climate disasters by facilitating the distribution of land title documents, which provide legal recognition and protection against land grabs and encroachments of climate-induced migrants. Authorities can also link up urban consumers with small producers, benefitting both financially and promoting better health.

Authorities must go beyond the distribution of rations to affected communities, which could stop at any time when the government's priorities change. The communities need land and the knowhow to use such land in a productive manner. Women and youth must be prioritized in such interventions.

Recommendations

The growing land scarcity and landlessness threatens food security in poor countries. Low-cost tenure reforms have the potential to improve tenure and food security. Gaps in research on the links between tenure and food security must be remedied. Mixed methods (i.e., multi-cropping as opposed to monocropping) are needed to analyze the complex casual linkages. The commitment of the Government agencies is critical.

Youth landlessness and unemployment is a growing challenge in agrarian societies where population growth is still high. The creation of employment opportunities and the provision of secure property rights for the youth is increasingly important to ensure social stability and food security. More research is needed to investigate the potential of alternative livelihood strategies for the youth and displaced populations, whether in rural or urban settings. Tenure security and food security should be put into the broader perspective of livelihood security to facilitate comprehensive research that takes on board the new challenges of a rapidly changing world.

A mixed methods approach is needed that can utilize natural experiments as well as randomization where feasible in combination with increasing flows of spatial and time-series data from diverse sources. Household-farm panel data collected over longer periods of time, combined with simulations, can also provide valuable insights about the linkages between tenure security and food security. The structural complexity and context specificity limit what can be generalized from randomized social experiments. Still, randomized pilot experiments should be encouraged in relation to the implementation of new land policy reforms.

CSOs, through community driven programs, can strengthen the process of facilitating the distribution of land title documents. Land redistribution, if poorly managed and not accompanied by necessary support and resources, may lead to conflicts.

By providing secure land tenue, mobilizing communities, and empowering them (women, men, and youth) on climate-resilient and adaptive capacities, people can better navigate the challenges of climate change and work towards a sustainable future which is climate-resilient.

CSOs use the following tools and approaches to explain the link between land rights and food security:

- **Awareness-raising and advocacy through campaigns.** CSOs undertake campaigns and awareness-raising initiatives to illuminate the link between land rights and food security. This is

being done through campaign posters and leaflets; organizing workshops and public events, developing role plays; and, media coverage.

- **Community mobilization and engagement.** CSOs work with communities to involve them in decision-making processes on land rights, land use, and food security. They empower the local communities to advocate for their land rights and food security.
- **Partnership and networking.** CSOs often associate/collaborate with other likeminded organizations and government departments to enhance the results of their implementation of sustainable agriculture practices.
- **Capacity-building.** CSOs provide training courses to farmers and other community members on the importance of linking land rights and food security.
- **Legal support.** CSOs assist individuals/farmers who are facing land rights violations and help them in the legal proceedings.
- **Policy dialogue.** CSOs facilitate discussions among the government, communities, and other partners to find solutions to issues pertaining to land rights and food security.
- **Research and documentation.** CSOs conduct research on land rights and food security. They gather information/data to highlight the impact of insecure land tenure on food security in support of policy changes.
- **Adoption of sustainable agriculture.** Communities increase their resilience to climate change impacts through the adoption of climate-resilient crops, indigenous solutions, and sustainable agricultural practices.
- **Natural farming.** Natural farming, which uses traditional knowledge, promotes healthy food production.
- **Climate change mitigation.** The planting of trees in common areas contributes to carbon sequestration and mitigation of climate change effects. ■

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CASE STUDY

Managed retreat as a pathway to community recovery and rehabilitation in the wake of disasters

A case study of community resettlement in the sinking island of Ghoramara, West Bengal, India

Compiled By Jennifer Brown, Senior Land Tenure Specialist, Landesa; field research and initial writing on Ghoramara Island by Pinaki Halder, India National Program Director, Landesa and Sudipta Biswas, former Landesa specialist; additional research by Sourav Kumar Chandra, Landesa Mangroves Forest Project Manager.

Ghoramara Island, which sits at the mouth of the Hooghly River roughly 92 kilometers south of Kolkata, India, had a land area of 8.4 square kilometers in 1975. Today, its land area has shrunk to 3.95 square kilometers.

The island continues to shrink as sea level rise and extreme changes in river flows erode the island. This process of erosion is further intensified by storm surges triggered by seasonal tropical cyclones which have increased in frequency in recent years. The area has been struck by four tropical cyclones since 2019: Fani (May 2019), Bulbul (November 2019), Amphan (May 2020), and Yaas in May 2021. Cyclone Aila, which struck the island in May 2009, was also devastating to the island.

The population of Ghoramara Island, once around 40,000, has fallen to 5,193 (Census of India, 2011) due to out-migration. Ghoramara

Key Messages

- Managed retreat is becoming increasingly necessary in a variety of coastal and delta contexts. The case study of Ghoramara Island may be used as an example of the important considerations that should be reflected as more governments begin devising plans for resettlement through managed retreat.
- Current relocation efforts are largely "one-off" and devised as needed. No systematic institutional frameworks, policies, or funding mechanisms exist to support the relocation of entire communities when needed for managed climate-related retreat.
- Governments and stakeholder groups working on resettlement plans should be guided by the following principles: (1) how beneficiaries will be identified, ensuring that women are included; (2) how the land for resettlement will be acquired, when no available land exists; (3) how much land will be allocated to each family; (4) what laws and regulations may need to be adopted to streamline, standardize, and make transparent and participatory the process of resettling communities; (5) how the process of resettlement will be kept participatory and transparent, especially as the community is concerned; (6) how can women and marginalized groups be ensured of an active voice in decision-making; (7) how can governments leverage the resettlement process to support and strengthen conservation and climate mitigation efforts; and, (8) how will the government fund the resettlement program, among others.

residents had mostly been farmers and even the marginalized sections of the community had a homestead plot and could depend on agricultural wage earnings for sustenance. As the island has eroded, the better-off villagers who occupied upland areas in the central part of the island have almost all moved permanently off-island and purchased land in nearby areas. The remaining marginalized sections of the island have come to depend on migratory labor of some members of their families and on limited farming activities where it remains possible — either on their own small plots or on leased land.

Ghoramara Island is a stark preview of the changes increasingly impacting islands and coastal communities in the Sundarbans.

Climate change event: Cyclone Yaas

On 26 May 2021, the cumulative effect of the four-meter-high sea surge, caused by the combined effects of an astronomical tide (coinciding with the full moon) and Cyclone Yaas, decimated the Sundarbans.

Ghoramara Island suffered the worst impact of the disaster. The ingress of saline water swept away hundreds of houses and rendered most agricultural land uncultivable. All residents of the island were heavily impacted, though the most vulnerable residents living on the edge of the island were completely devastated. The government assessed the most vulnerable and in need of aid to be 30 families.

Fortunately, despite the physical devastation of the island, there was no loss of life as the Government of West Bengal started evacuation and rescue operations when the cyclone warning was sounded 48 hours in advance. The Block Panchayat Head of Sagar recounted that, *"The aged and vulnerable population were shifted to Kakdwip and Sagar flood shelters. Post cyclone, adequate relief measures have been taken to provide succor to the helpless families. Several CSOs [civil society organizations] and youth organizations are coming to the island with dry food, milk, water, and clothes for the families who could not leave the island and had taken shelter at school buildings."*

Landesa was invited by the local government to visit the island in the wake of Cyclone Yaas to assist in the development of a resettlement plan for the island's most vulnerable residents. This experience highlighted that resettlement requires not only identifying available suitable land, but it also requires identifying beneficiaries, ensuring a secure transfer of land rights to undisputed land, and a host of accompanying assistance to help people – and especially women and vulnerable sections of communities – rebuild lives and livelihoods. The case study highlights the many questions for government policymakers, NGOs, and local populations to consider when climate change forces managed retreat, through relocation and resettlement.

Overview of the Sundarbans, West Bengal, India

Land and People. The Indian Sundarbans has a population of 4.4 million. Within this area, Ghoramara Island is located in Sagar Block (a block is a subdivision of a sub-district). As of the 2011 census, the entire population of Sagar Block was 212,037 and Ghoramara Island's population was slightly over 5,000 — a number that has declined further since Cyclone Yaas. Sagar Block is 88 percent Hindu and 12 percent Muslim. Members of Scheduled Castes make up 27 percent of the population and Scheduled Tribe members are 0.4 percent of the population.[1]

Within the area of the Sundarbans, there are two land use zones: the human settlement area and the core protected area of the mangrove forest where people cannot live or own land. The core area of the Sundarbans refers to the most ecologically sensitive part of the forest. It is characterized by dense mangrove vegetation, diverse wildlife, and vital breeding grounds for various species. All land in the core area is strictly protected and managed by the Forest Department to ensure the preservation of its unique biodiversity and delicate ecosystem.

There are roughly 104 islands in the Sundarbans, of which roughly half are inhabited, and half are restricted from human entry. Many of these islands, including the topic of this case study — Ghoramara Island — are subject to land loss due to erosion, rising sea levels, and inundation during storm surges, a problem that has increased over the years.

Tenure Systems and Land Governance

Human settlement area. In the human settlement area of the Sundarbans, land tenure relationships are similar to that of the rest of West Bengal State. The State is unique among Indian States for implementing largely successful and enduring land reforms, including land redistribution by imposing a ceiling on land holdings and redistributing "ceiling surplus" land to landless persons, and by recognizing and protecting a class of protected tenants called *"bargadars."*[2] As a result of these reforms, the area is dominated by farmers who operate small

[1] Scheduled Castes (SCs) are members of the lowest social class. They are listed (or "scheduled" in the Constitution and receive special government support. Scheduled Tribes (STs) are similarly listed and provided with government protection and outreach. STs are members of India's original indigenous groups.

[2] This was called for and conducted under the West Bengal's Estate Acquisition Act (1953) and Land Reform Act (1955).

holdings and by near-landless families (those holding less than one acre/ 0.41 of a hectare) who may have a house plot and small piece of agricultural land, but who also rely on agricultural labor.[3] Within Sagar Block, 24 percent of workers' main livelihood comes from cultivating their own land and 44 percent make their main living from agricultural labor. Figures for Ghoramara Island, which is within Sagar Block, are unavailable, though the island's economy is almost entirely agricultural. Farming in Sagar Block is dominated by marginal farmers (those holding less than 1 hectare) with 18,896 farmers falling into this category. There are an additional 1,505 smallholder farmers (those holding between one and two hectares).

Agriculture is a key livelihood activity in the district with rice (paddy) as the key crop cultivated. For those with holdings near rivers or near the coastline, saline intrusion is a constant concern and increasingly limits agriculture. For those living in these fringe areas and for those who are landless or near-landless, livelihoods often depend on mangrove forest and other coastal non-agricultural activities, such as fishing.[4]

The area is also impacted by large businesses and landholders with fishponds and prawn farms. These businesses can be profitable but provide minimal employment opportunities for local populations compared to agricultural activities such as rice farming, which would historically include the hiring of the local agricultural labor force.

Core protected area. In the core protected area, human entry is restricted and limited, although entry is permitted for limited livelihood purposes, such as fishing, crabbing, honey collection, and mollusk shell collection. Sagar Block and Ghoramara Island are located outside of the core protected area.

Main local institutions. Important government bodies in the Sundarbans include:

- Gram (village) and Samati (block) Panchayats. Gram Panchayats (GPs) are elected local governance units.
- Block Development Offices (BDOs) are responsible for implementing government programs related to development and for administration of a block, including rural development programs.

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[3] District Statistical Handbook 2014 South 24-Parganas. (2016). Government of West Bengal, Bureau of Applied Economics & Statistics, Department of Statistics & Programme Implementation. Available at: HYPERLINK "http://wbpspm.gov.in/publications/District%20Statistical%20Handbook"Publications (wbpspm.gov.in)

[4] Ibid.

- Block Land & Land Reform Offices (BL&LROs) are responsible for keeping the Record of Rights (land records) and land administration.
- Women's self-help groups (SHGs). West Bengal has a strong network of women's SHGs, which are established and supported by the government's State Rural Livelihoods Mission (SRLM). SHGs promote savings and advance credit and are a forum for women's collaborative economic empowerment.
- The Department of Sundarban Affairs (SAD) implements development activities through the Sundarban Development Board (SDB) and promotes social, economic, infrastructural, and cultural advancement of people residing in this area.
- The Forest Department protects and manages land in the core area to ensure preservation of its unique biodiversity and delicate ecosystems. The Forest Department's duties also include the operation of the lease and permit system through which authorizations for forest exploitation are awarded.

Impacts of climate change and disasters on people's welfare

Prior to Cyclone Yaas, the residents of Ghoramara Island had already been coping with the catastrophic, but slow, loss of their land. Many families were already surviving through labor migration. Families report engaging in two types of labor migration. One type is seasonal migration in search of wage-earning jobs in nearby rural or urban areas. The second type is more permanent migration to large urban areas of other Indian states. The remittance made by this migrating population offers relief to the remaining family members – often women, children, and the elderly.

When Cyclone Yaas struck, the local government reported that roughly 1,100 families remained living on Ghoramara. These are families who cannot afford to resettle or buy land elsewhere and whose livelihoods remain firmly anchored to the island. Their livelihoods now depend on remittances from migrating family members and on cultivating what agricultural land remains usable.

Responses by the community

In the immediate aftermath of Cyclone Yaas, Landesa spoke with community members who were just starting to assess the extent of

damage and cope with the destruction. Two women shared details of their immediate situation, plans, and needs:

Sandhya Hazra was waiting for a ferry boat to cross the river back to Ghoramara. She said, *"I took shelter in a relative's home at Kakdwip with my daughter in the morning of the storm surge. I came back here to collect whatever could be retrieved from the debris. Last year, we weathered past the mighty Cyclone Amphan with less damage. The Yaas storm surge has snatched whatever we still possessed. My husband is a fertilizer dealer here, but we both are not coming back again here."*

Tanuja Biwi was returning home after collecting food, water and clothes distributed by a visiting club from the city. She said, *"My husband at home is sick. He cannot walk. By the grace of the Almighty we are alive, but the gushing in sea has taken everything we had, even a couple of goats. Our room caved in. We need immediate attention."*

Response by the authorities

In the wake of Cyclone Yaas, the South 24-Parganas District Administration developed a rehabilitation plan for the 30 most vulnerable families affected by Cyclone Yaas. A key component of the developed plan was to relocate the most vulnerable families to stable land off-island. The government identified a block of government land on the large and stable Sagar Island to relocate the 30 families. The families to be resettled were those living on the edge of Ghoramara Island, who prior to the cyclone had had a piece of land to live on and a small agricultural plot to grow seasonal crops and vegetables. Their homes and small land plots had all been severely damaged or swallowed completely by the storm.

As an initial step, the district authorities visited Ghoramara Island and nearby Sagar Island in June 2021 with the following intentions:

- Facilitate initial discussions and planning for the proposed resettlement of 30 of the island's most vulnerable families who had completely lost their homesteads due to the storm surge.
- In consultation with the Block Development Officer, Block Land and Land Reforms Officer, and Panchayat authorities, evaluate the

suitability of the land identified on Sagar Island for resettlement through government land allocation.
- Develop a resettlement and livelihoods rehabilitation plan for the 30 families.

Landesa accompanied the authorities and provided technical advice on land-related matters.

During the visit a panchayat official noted that 1,100 families had been living on the island prior to Cyclone Yaas. He said that the 30 families that were identified for resettlement were the most absolute vulnerable and those who had not already been able to purchase land off-island.

The authorities planning the resettlement area on nearby Sagar Island, included the following in developing the land use plan:
- House and garden allocation of 0.16 acre (0.06 hectare) for each of the 30 families;
- Community gathering area, including a small playground and shaded area for community meetings of 0.25 acre (0.10 hectare);
- Community pond and drinking water source of 0.20 acre (0.08 hectare); and,
- Internal pathways, drainage, and approach road of 0.15 acre (0.06 hectare).

The total area needed was 5.40 acres (2.2 hectares). It is notable that when government land is allocated, the State government has a policy of granting joint titles to wives and husbands or single titles to women-headed households. This policy was followed in the resettlement plan.

The development plan necessary in order to resettle these 30 families was comprehensive. It required the creation of a new hamlet, including all infrastructure, government services, and livelihood building support.

The full plan for development is detailed in the table on the following page.

Since this plan was developed, Landesa has continued its communication with involved government officials. According to the authorities, a land allocation map with internal roads was prepared by a survey team engaged by the BL&LRO. All 30 identified families received land record documentation for the land received, which was granted jointly in the names of wives and husbands, and the families have taken possession of the land. The local government prepared and levelled the land using labor resources from MGNREGA and enlisted the families for construction of houses and sanitation facilities. A deep tube well was installed for drinking water. Many of the families have started living permanently on the allocated land plots and have developed vegetable gardens. The livelihood activities, in-depth work with women's SHGs, and links to services have also been taken up, though Landesa has not been directly involved in this and cannot speak to progress.

Activity	**Details**	**Departments and Programs**
Land distribution to 30 families from block of government land	Provide 0.16 acre (0.06 hectare) of land to each family for construction of house and other land-based livelihood activities. Jointly title land to married couples.	Block Land & Land Reforms Department (BL&LRD), Block Development Office (BDO), Samiti (Block) Panchayat, Gram Panchayat (GP)
Land leveling and preparation for development		BDO via Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)[5]

[5] MGNREGS program supports rural residents with a minimum number of day of wage labor per year and is used to secure local labor for public works and infrastructure projects.

Construction of approach road and internal roads	These all must be constructed from scratch to allow communication, access to markets, public services, etc.	BL&LRO, BDO via MGNREGS, Panchayat & Rural Development Department (P&RD) via MGNREGS Panchayat Samiti, GP
House construction support to 30 families	Permanent, cement *(pucca)* houses for 30 families	P&RD via rural housing support scheme, Sundarbans Affairs Department (SAD), Sundarbans Development Board (SDB); house building grant for Cyclone Yaas victims
Drinking water	Sinking of one tube well	Public Health Engineering (PHE), Backward Classes Welfare (BCW), P&RD, SAD, SDB
Water for other purposes	Excavation of community pond for cleaning of utensils, clothes, etc.	P&RD via MGNREGS
Sanitary toilets	Construction of latrines for 30 individual households	Mission Nirmal (Clean) Bangla (MNB) & MGNREGS
Drainage	Construction of suitable drainage channels	BDO, P&RD (MGNREGS)
Electrification	Electricity connection for 30 families	Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) government rural electrification scheme

Community gathering place for the hamlet	Playground for the children; community recreation space for observance of festivals, etc. Area of about 0.20 to 0.25 acre (0.08 to 0.1 hectare).	P&RD (MGNREGS)
Livelihood assistance		**Departments and Programs**
Developing and nurturing betel vine and/or kitchen gardens for 30 families		P&RD (MGNREGS)/ Horticulture, Agriculture Department
Distribution of livestock (chicks, goats, sheep, cows, etc.)		Animal Resources Development (ARD) Department
Developing and nurturing fruit-bearing trees (mango, guava, etc.)		Horticulture, MGNREGS
Pisciculture community pond (supply spawn of locally suitable varieties)		Fishery Department
Links to other needed services		**Departments and Programs**
Formation and/or strengthening women's self-help groups (SHGs), which provide credit, livelihood, and other support for women in groups of roughly 10.		SHG & Self-Employment Department, District Rrual Development Cell (DRDC), P&RD, Banks, Comprehensive Development Corporation (CADC), State Rural Livelihoods Mission (SRLM)
Skill development training of women SHG members /all eligible youth for self-employment		SHG & Self-Employment Department, DRDC, P&RD, CADC, SRLM

Training on animal rearing	ARD Department, SRLM (Anandadhara)
Pensions for all eligible persons, including widows, the disabled, and the aged.	P&RD Department, Indira Gandhi National Old Age Pension Scheme (IGNOAPS), Indira Gandhi National Widow Pension Scheme (IGNWPS), Indira Gandhi Disability Pension Scheme (IGNDPS) and other State social pension schemes
Public Distribution System (PDS) and inclusion on Khadya Sathi lists or transfers of ration cards as needed (families eligible for reduced price rice rations)	Food and Supply Department
Health insurance – Swasthya Sathi (government program)	GP, Health Assistant (Female), Integrated Child Development Services (ICDS)
AWC (rural childcare center) and primary school enrollment at nearby location	GP, Education Department

Assessment

Ghoramara Island is one of the first stark stories of land submersion and forced migration worsened by the impact of climate change. In this case, the security of land tenure that island residents enjoyed did not help them to avoid the disastrous impacts of continuous flooding and more frequent and severe storm surges. Unfortunately, rapid adaptation was not a feasible option for this place. Therefore, most of the community was forced to leave their land.

Still, land remains of central importance to these families and securing new land for the most vulnerable of the island's populations was an

ideal outcome. As mentioned above, many of the island's families — or at least some of their members — have entirely migrated off-island in search of alternative livelihoods. For the remaining families, and in particular for the most vulnerable and poorest sections who do not have the means to relocate using their own resources, government assistance to secure a small house and agricultural plots was paramount.

In this case, various government departments and branches have been able to work together to support these 30 families. Nearby land was available and identified. Selecting beneficiaries was relatively straightforward. Women's SHG groups already existed and could be mobilized to support livelihood activities. Still, this has been and is a complex effort. As can be seen from the table above, resettling these families involved multiple government departments. Such an effort may be possible for 30 families, but what about the hundreds or thousands living on the edge of the Sundarbans who may require such assistance in the years and decades to come?

Recommendations

Given the ongoing and real threat of climate change-intensified displacement in areas of the Sundarbans, in-place adaptation measures versus managed retreat must be regarded as a topic of major policy discussion and decision-making. In the Sundarbans, given the exposure of some areas to increasing frequency of storm surges and land erosion, adaptation in place may not be practical. Managed retreat may be necessary. Ghoramara Island is a prime example of an area that required managed retreat.

Given that managed retreat may be increasingly necessary in a variety of coastal and delta contexts, this small case study of Ghoramara Island may be used as an example of the important considerations that should be reflected as more governments begin devising plans for resettlement through managed retreat. The case of Ghoramara shows that current relocation efforts are largely "one-off" and devised as needed. No systematic institutional frameworks, policies, or funding mechanisms exist to support the relocation of entire communities when needed for managed climate-related retreat. As governments

begin to devise such policies, the experience of Ghoramara can be used to think through the questions that must be answered.

Key questions for consideration by governments and others working on resettlement plans:

- **Identification of beneficiaries of resettlement programs.** Who should be eligible for resettlement assistance and land grants? If only the more vulnerable will be resettled, how are they identified? Will both landed and landless persons be assisted? How can identification programs ensure that women are recognized and included?
- **Identification of land.** Ideally, identifying nearby land would minimize feelings of total displacement and allow the continuation of some existing economic and social activities. What if no suitable nearby land is readily available? Would the government consider purchasing land? How much land should be allocated to each family?
- **Laws, policies, and institutional arrangements.** What laws and regulations may need to be adopted to streamline, standardize, and make transparent and participatory the process of resettling communities? What processes can be put into place to help institutions work smoothly and efficiently together?
- **Community participation in decision-making**. Will the families to be resettled have input into the choice of location? Will they have a say in the other support provided, like the livelihood support? How can the process be made or kept participatory and transparent?
- **Gender integration and social inclusion**. How can women and marginalized groups be ensured an active voice in decision-making? How will the intervention specifically reach out to and obtain the input and suggestions of these groups? Can the intervention be made gender transformative? That is, can women's role be permanently highlighted and elevated in impacted communities?
- **Do no harm**. At times of disruption and change, the possibly of gender-based violence increases. How can program designers minimize this risk? What resources are available for women facing such harm? What training in psychosocial support may be needed for those implementing resettlement programs?

- **Conservation and restoration**. What efforts to promote climate-smart livelihoods and sustainable land management choices can be included? How can government ensure that resettlement does not lead to additional environmental problems? Further, how can governments leverage the resettlement process to support and strengthen conservation and climate mitigation efforts? Should restoration efforts be a key component for managing abandoned land, or should it be left to further degradation, resulting in the loss of potential benefits of ecosystem services?
- **Funding**. In the case of Ghoramara Island, existing government land and existing government programs were used to resettle residents. How can resettlement be funded when existing programs do not exist, and government land is not available? How can national and international funds and resources be tapped? ■

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CASE STUDY

Collective land ownership empowers farmers to choose their pathways to recovery and resilience

A case study of how land rights security improves sustainable rice farming and increases climate mitigation in upland communities in Passi City, Iloilo, Philippines

Prepared by Marie Joy Demaluan and Caryl Pillora, Center for Agrarian Reform and Rural Development (CARRD)

In the early hours of 8 November 2013, Super Typhoon Haiyan raged in the southern Philippines. The Category 5 storm struck the Visayas region with devastating winds and towering waves. Haiyan, locally known as "Yolanda," is one of the deadliest Philippine typhoons on record. The storm affected more than 14 million people across 44 provinces, taking the lives of more than 68,000 people, with 1,800 still missing, and leaving over 14 million people homeless (Wignaraja and Ramachandran, 2022). Overall agricultural losses were estimated at 10.6 billion Philippine Pesos (241 million US Dollars), with production losses costing 8.6 billion Philippine Pesos (195 million US Dollars) and agricultural infrastructure damage amounting to 2.0 billion Philippine Pesos (45 million US Dollars) (Verzani and Corpuz, 2003).

In November 2023, the Philippines marked 10 years since this unprecedented natural disaster laid waste to the entire Visayas region of the country. Sadly, even after a decade, reconstruction and rebuilding have not yet been completed in all of the affected communities.

Key Messages

- The government must ensure that land titles are not just awarded to farmers but that farmers actually occupy and make use of the land. Though the collective Certificates of Land Ownership Awards (CLOAs) received by the farmers in Passi City provided them with the right to occupy and till the land, the government should support and expedite the process of parcelizing collective land titles and issue individual land titles without delay. Individual titles offer stronger land tenure security.
- The experience of the Passi farmers has shown that the practice of organic agriculture offers an effective pathway towards livelihood recovery and resilience in the aftermath of climate-induced devastation of crop lands. Organic agriculture promoted the use of seeds with high adaptive capacity; increased farmers' income, thus reducing their need to take out loans; improved soil texture and fertility; and, opened up access to government support services for organic farmers.
- In order to incentivize the practice of organic agriculture, the government must offer and strengthen its support for organic farmers so that they would not be lured to go back to conventional farming. The government must promote organic agriculture, both for its environmental and commercial values.
- In the absence of civil society organizations (CSOs) that help promote organic agriculture in the communities, local governments should provide dedicated technical person/s with in-depth knowledge of organic agriculture who could educate and guide the farmers in shifting to organic agriculture practices.

Experts of the United Nations Development Programme (UNDP) presciently reported on 27 November 2013, a few weeks after the typhoon, that post-typhoon reconstruction could take as long as 10 years, citing complex problems such as property rights, missing title deeds and land zoning (ABS-CBN News, 2013).

Typhoon Yolanda brings out the strength of Passi farmers

Passi City, one of 42 municipalities in the province of Iloilo, in Western Visayas, was pummeled by Typhoon Yolanda. Over 3,000 families in the city lost their homes and approximately 19,351 hectares of

The City of Passi covers a land area of 25,139 hectares — a predominantly mountainous area dominated by rolling hills and narrow valley plains with relatively flat land stretching alongside the Jalaur and Lamunan rivers.

Passi has relatively good soil types with substantial surface and groundwater. It has no distinct dry and wet seasons, making it suitable for growing a wide range of crops, such as rice, sugarcane, and pineapple.

Its population of 79,663 people (Census, 2010), or 16,058 households, grows at a rate of 1.36 percent per year. The city is subdivided into 51 barangays, 38 of which are rural and 13, urban. Passi is a fourth-class city and has a poverty incidence of 21 percent (Mapa, 2021).

agricultural land (77 percent of the total land area of the city) were affected.

The farmers were getting ready to harvest their sugarcane and rice when Yolanda struck the city, causing utter financial ruin for the farmers. Debris and logs, carried away by flood waters, ended up on farmlands and destroyed lot boundaries. Soil fertility dropped because of erosion and surface runoff. Farming activities were put on hold for months because of the soaring labor costs of rehabilitating the lands. A number of organic farmers returned to chemical farming, for which they could receive more fertilizer and seed subsidies and which required less labor. Rural women farmers were further burdened with care work for children and the sick.

The farmers of Passi City suffered no less from Yolanda than the millions of other farmers in the Visayas region. However, their livelihood recovery proved to be much faster.

Just less than three years after the typhoon, the Passi City farmers were producing more organic rice than the local market could absorb. In 2016, they received organic certification for their crops and developed a partnership with a marketing company to sell their organic rice at mainstream markets for a premium price.

The Passi City farmers' recovery and resilience were built on legal proof of land ownership — the Collective Land Ownership Award (CLOA).

The CLOA is a document that provides evidence of ownership of the land granted or awarded to agrarian reform beneficiaries (ARBs) under the Philippines' Comprehensive Agrarian Reform Program (CARP).

Land reform has been the cornerstone of every administration in the Philippines. On 10 June 1988, the Comprehensive Agrarian Reform Law (CARL) was enacted with the avowed aim of achieving genuine land reform. The CARP, which was implemented by the government to enforce the law, sought to promote equity and productivity in the agriculture sector by redistributing agricultural lands to landless farmers, farm workers, and tenants, and ultimately to achieve societal goals of advancing social justice and sound rural development.

Land redistribution under the CARP has been one of the highest in Asia in terms of the percentage of agricultural lands awarded and rural populations covered. On the other hand, it has been slow to acquire lands from politically connected landed elites for distribution to intended beneficiaries.

The CARP was supposed to have completed agrarian reform in 10 years. However, 35 years after the government began implementing it, 562,873 hectares of land have yet to be redistributed, and 1,380,422 hectares remain under *collective* CLOAs that need to be parcelized so that individual titles could be issued to agrarian reform beneficiaries (ARBs).

As of 2020, the inventory of the Department of Agrarian Reform (DAR) on collective CLOAs in Passi City under the Support to Parcelization of Lands for Individual Titling (SPLIT) project recorded 367 collective CLOAs covering 7,213 hectares and 4,666 ARBs.

In 2004, the Center for Agrarian Reform and Rural Development (CARRD),[1] a non-profit organization that provides technical assistance to farmers covered by CARP expanded its operations to Passi City, Iloilo to offer technical support for farmers that were undertaking the parcelization of their collective CLOAs into individual CLOAs or land titles.

[1] CARRD is a non-profit organization providing technical assistance to farmers covered by CARP in the provinces of Batangas, Capiz, and Iloilo. Its land rights security project in Passi City is supported by the German Catholic Bishops' Organization for Development Cooperation (Misereor).

From 2018 to present, CARRD has been working on the parcelization of 39 collective CLOAs, or 10 percent of the 367 collective CLOAs in Passi City. These CLOAs cover 2,328 hectares and will benefit 1,369 ARBs.

In particular, this study covers eight upland communities of Passi City – Agtagbo, Alimono, Dalicanan, Jaguimitan, Magdungao, Salngan, Tagubong, and Talungonan. The majority of these farmers were among the earliest batches who benefited from CARP by way of collective ownership registered under the name of their farmer associations or cooperatives.[2]

CARRD's interventions on and advocacy for the parcelization of collective CLOAs are based on evidence that individual CLOAs offer stronger land tenure security**.** While collective ownership provides a sense of security among farmers in the face of aggression and resistance from landowners, it has resulted in second-generation ownership issues, such as boundary disputes among farmers within the collective land; intermittent threats and harassment from the former landowners; the entry of dummy farmers; accumulation of arrears on land amortization and real property tax payments; selling of rights due to inadequate support services and succession issues for ARBs who have died or are no longer capable of farming. Individual CLOAs would help to prevent these issues.

CARRD also reported that in the aftermath of Typhoon Yolanda, individual titleholders were more invested in the quality of their recovery and were more motivated to fix the damage to their farm. They regarded their land as a valuable and permanent asset for the family in the long term.

Collective land ownership: The bedrock of Passi farmers' recovery and resilience

Despite not having received their individual CLOAs, the Passi City farmers were empowered by their collective ownership of their lands to make decisions on how to manage and rehabilitate their farms.

[2] In the early years of the implementation of the CARP, one of the approaches used by the government to fast-track the acquisition of lands from private landowners and distribution of the lands to farmers was through collective land ownership awards where vast tracks of lands were titled under the name of farmers' associations and cooperatives.

Aside from supporting farmers to reinforce the security of their landownership, CARRD taught the farmers on organic farming.

Classroom-type training and actual field practice were provided to the farmers in a ladderized format. Because of the massive soil erosion caused by the typhoon, each farm underwent rapid soil analysis to determine the level of organic matter and soil fertility. This also helped in determining the right proportion of materials for making compost and biofertilizers.

The training activities organized by CARRD were aligned with the Philippine National Standards on Organic Agriculture, which were then being vigorously promoted following the enactment in 2010 of the Philippine Organic Agriculture Act. Farmers who showed a higher degree of learning and skills improvement were pooled to form a team that would conduct regular field inspections to monitor the level of practice and compliance with the standards. This team also provided mentoring to the farmers on improving farm design and developing farm plans.

The security of ownership that the collective CLOA reinforced facilitated the farmers' return to organic agriculture practices. Typhoon Yolanda had momentarily forced the Passi farmers to revert to chemical farming, which offered seed and fertilizer subsidies. However, the farmers subsequently realized that they had the power and control to choose which crop or variety of rice to plant, the type of inputs to use, and which practices to adopt. This helped them to go back to organic agriculture. The communities also availed of the rehabilitation programs that were being provided by the government and the private sector to access resources to rebuild infrastructures and improve their organic agriculture practices.

Instrumental in mobilizing farm production support services to the organic rice farmers was the *Katilingban sang mga Agraryo Padulong sa Pag-uswang sang Iloilo Agrarian Reform Cooperative* (KASAPPI ARC). KASAPPI ARC was organized by CARRD in 2007 to bring together farmers who have secured collective CLOAs and to increase their access to resources that could improve farm productivity. The cooperative became a conduit for all support services not just from CARRD but from the different government agencies as well. Among

the services that KASAPPI ARC provides to organic rice farmers are agri-extension, production loans, farm input supply, crop insurance, common service facilities (tractor, hauling, threshing, drying, and milling), and marketing support.

Women's leadership also played a vital role in sustaining agrarian reform advocacy in the communities and in managing the organic farms. Six out of the 11 paralegals in Iloilo were women farmers; they provided regular mentoring to the farmers in their ongoing process of parcelization of lands for individual titling or whenever they experience threats from their former landowners. On the other hand, organic rice women farmers were well-entrenched in the actual farm operations. Forty percent of the total farms dedicated to organic rice production were managed by women farmers. They made significant contributions, starting from seed selection until the marketing of the milled rice (CARRD, 2020).

Organic agriculture: Passi farmers' road to recovery

Finding seeds and organic inputs

Typhoon Yolanda not only flattened the standing rice crop in November 2013, but also the farmers' ability to secure seeds for the succeeding planting season. The farmers thus sourced from other rice-growing areas, six traditional rice varieties that had the same characteristics as those that they used to grow. This increased the capacity of the community to produce its own planting materials.

Meanwhile, two sugar mills in Passi City enabled the farmers to produce organic fertilizer, by supplying them with by-products from sugar, such as mud press and mill ash. These were mixed with available waste on the farm, such as chicken manure and pruned leaves from plants rich in nitrogen, and the mixture was allowed to decompose for a month inside a controlled environment.[3] Liquid biofertilizers and biopesticides were also produced individually by the farmers and collectively by the farmers' cooperative.

[3] The Local Government Unit of Passi City provided infrastructure that allows the farmers to mass produce organic fertilizer.

Broader adoption of organic agriculture

In 2014, less than two years after the onslaught of Typhoon Yolanda, the farmers restarted growing organic rice. At the time, 17.39 hectares were devoted to organic rice production in four communities. To date, a total of 93 farmers are involved in the project, cultivating a total of 50.33 hectares in eight communities.

Rebuilding the rice mill

One of the most expensive stages of the rehabilitation was the restoration of the dedicated rice mill[4] for colored rice, including the drying facility. CARRD, together with the farmers and their cooperatives – Salngan Agrarian Reform Beneficiaries Multi-Purpose Cooperative (SARB MPC) and *Katilingban Sang mga Agraryo Padulong sa Pag-uswag sang Iloilo Agrarian Reform Cooperative* (KASAPPI ARC) — pooled resources, both financial and in-kind, to rebuild the organic rice milling facility.[5] Two years after the typhoon, the facility became not only functional but had become more efficient in producing grains required by the market.

Breaching the mainstream market for organic rice

Passi farmers significantly increased their production of organic rice as more farmers enrolled in CARRD's organic farming program. They started to produce rice twice a year instead of the usual one cropping cycle a year.

Soon, the local market could no longer absorb their produce. KASAPPI ARC entered into a marketing agreement with the Global Wellness Organic Corporation (GlowCorp) to develop the product and distribute it in the mainstream market. The marketing agreement allowed the farmers, through KASAPPI ARC, to negotiate and command a premium price for their organic rice.

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[4] The rice mill was donated by the Japan Embassy in the Philippines in 2008 under their grant assistance for grassroots projects.

[5] SARB MPC is the community-based cooperative while KASAPPI ARC is the district level cooperative. Farmers are both members of these cooperatives.

Through GlowCorp, the farmers' organic rice is now being sold in major supermarkets. KASAPPI ARC is assured of a stable market regardless of fluctuating farmgate prices of rice.

At the same time, in 2016, the communities secured organic certification for their product from the Organic Certification Center of the Philippines (OCCP). This certification enabled the communities to negotiate a higher price in the market. A year later, KASAPPI ARC and one of its members, Mrs. Ofelia dela Cruz, won the Department of Agriculture (DA) Western Visayas Region Organic Agriculture Achievers award.

Organic agriculture and the freedom to make farming decisions

Mrs. Ofelia Dela Cruz, a woman farmer and agrarian reform beneficiary (ARB) living in Barangay Salngan, a village in Passi City, recalls that in 1995, she started practicing organic agriculture because she wanted to apply the acquired knowledge from the season-long training she attended in her family's newly awarded land. She noticed that since her family started consuming organic food produced directly from their farm, none of them got sick.

"However, when Typhoon Yolanda hit us," Mrs. Dela Cruz relates, "our farm was covered in rocks, logs, and debris."

"We lost everything — our homes, food source, and fruit trees. It was a really traumatic experience that took years to fully recover from," she says.

Despite the setbacks her family suffered, Mrs. Dela Cruz eventually returned to organic agriculture.

She explains: "Land tenure enabled us to pursue organic agriculture practices because we owned the land," she explains. "We did not have to follow the dictates of a landowner. Organic agriculture was a big help in increasing our income and making our farm more resilient to pests and weather changes. I hope the government gives more attention to promoting organic agriculture, gives more incentives, and improves their implementation of existing programs on organic agriculture."

Building resilience through social protection

The devastation brought by Typhoon Yolanda highlighted the urgency to expand the government's subsidy for crop insurance to boost the resilience of farmers in times of disaster. Through the Registry System for Basic Sectors in Agriculture (RSBSA) of the Department of Agriculture (DA), farmers registered and submitted their profiles. Farmers' enrolment in RSBSA provided them with the opportunity to access different forms of support services from the government, including crop insurance subsidies. This was especially helpful for farmers who availed of loans from government-facilitated loan infrastructures. KASAPPI ARC became an accredited underwriter for the Philippine Crop Insurance Corporation (PCIC), thus enabling the cooperative to facilitate crop insurance enrolment and renewal and the processing of claims on behalf of its members. Farmers of the organic rice program were among those covered by these crop insurance subsidies.

In 2021, CARRD partnered with the Center for Informatics - University of San Agustin in piloting a telehealth project in the same communities in Passi City. The initiative provided accessible free medical services to farming households in times of health emergencies.

Benefits gained by the farmers and their cooperatives

Increased income

Low production costs, a premium price for their produce, and stable yields have boosted the economic returns to the farmers. On average, farmers currently enjoy a net income of 35,310 Philippine Pesos (620 US Dollars) per hectare. In contrast, farmers in the same community practicing conventional farming earn only between 20,200 and 26,000 Philippine Pesos (between 355 and 457 US Dollars) per hectare depending on the season and fluctuating farm gate price.

Reduced need for loans

Since the majority of the inputs were prepared by the farmers themselves (e.g., seeds, fertilizers, and biopesticides), farmers availed

of loans from the cooperative only when they needed to hire additional laborers during land preparation and harvesting.

Availability of seeds that have high adaptive capacity

Some of the Passi farmers observed that traditional rice varieties are not attractive to pests and diseases. They attributed this to the fact that these varieties do not require heavy fertilization and only produce minimal yet productive tillers, unlike the conventional varieties. Moreover, farmers observed that traditional varieties require less irrigation and are more tolerant to drought.

Improved soil texture and fertility

According to the farmers, the continuous application of compost and organic fertilizers makes soil texture more refined, thus increasing their capacity to absorb and retain water.

Access to government support services

Being recognized as CARP beneficiaries as well as being certified as producers of organic rice, the farmers' cooperatives — SARB MPC and KASAPPI ARC — were prioritized to receive support services from the government (e.g., training, production loans, common service facility, and crop insurance).

Income for KASAPPI ARC

The cooperative generated income from facilitating the purchase of dried "palay" — or rice that has not been husked — and marketing the rice in partnership with GlowCorp. Income earned by KASAPPI ARC was utilized to expand the project and improve milling operations.

Recommendations

Strengthening and sustaining land rights security

- *Prioritize quality over quantity of land distribution.* The government must focus more on the quality rather than the quantity of land distributed to ensure that land titles are not just awarded to

farmers but that farmers actually occupy and make use of the land. Though the collective CLOAs received by the farmers in Passi City provided them with the right to occupy and till the land, the absence of clear individual boundaries (which could be resolved by awarding individual titles) creates conflict among farmers and even opens up opportunities for former land owners to re-occupy the land through dummy farmers.

- *Prioritize social preparation.* The farmers must be educated not just about the benefits of the program but equally important, about their roles and obligations. In the case of farmers in Passi City, their post-land distribution and acquisition obligations, including paying amortization and local taxes as new landowners, further strengthened their ownership of their lands.
- *Improve agrarian reform database and documentation.* The government must improve its system of land documentation and harmonize related processes among different agencies to cut short the process of parcelization of collective land titles as well as to ensure more comprehensive action when issues arise.
- *Develop a more extensive cadre of paralegals and land rights defenders.* Paralegals and advocates are the first line of defense by the community who will represent them in negotiations in case there are issues and threats related to land ownership.

Improving land productivity through sustainable agriculture

- *Improve the capacity of local governments to promote organic agriculture.* In the absence of civil society organizations (CSOs) in the communities, local governments should provide dedicated technical person/s with in-depth knowledge of organic agriculture who could educate and guide the farmers in shifting to organic agriculture practices.
- *Incentivize the practice of organic agriculture.* The government must provide more incentives to farmers practicing organic agriculture so that they would not be lured to go back to conventional farming because of government subsidies, like hybrid seeds and commercial fertilizers. The government must promote organic agriculture, both for its environmental and commercial values.
- *Ensure that the provision of support services is needs-based.* Support services provided by the government must be based on

the felt needs of the farmers rather than a uniform, generic package provided throughout the country. Organic agriculture requires specialized training for the farmers, organic farm inputs, and dedicated post-harvest facilities which are totally distinct from conventional farming.

- *Increase the capacity of farmers' organizations to manage projects.* Farmers' cooperatives must be strengthened to make them more viable as conduits for support services. The more stable the organization is in terms of governance and finances, the better it can secure resources and projects.

Others

- *Provide substantial resources for evidence-based organic agriculture advocacy.* More substantial resources must be invested in the documentation of organic agriculture experiences in order to establish evidence of the benefits and gains of using such technology. These are crucial in advocating for effective policies and in persuading farmers to adopt the practices.
- *Improve the mechanism of land information and data sharing among government agencies.* There is an urgent need to improve coordination and data sharing among local government units (LGUs) and other CARP-implementing agencies to identify agricultural lands that should not be converted to non-agricultural purposes, especially in the absence of the National Land Use Act (NLUA). ■

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THEME 5:
Rebuilding after disasters

How tenure security/insecurity affects the post-disaster capacity of people to recover and rebuild

Land emerges, land disappears: Char dwellers continue fighting for land tenure security

A case study of Char Bangla, a riverine char land in the coastal region of southern Bangladesh

Prepared by Rafique Ahamed Sherajee
Association for Land Reform and Development (ALRD)

Char Bangla is one of over 145 *chars* in the Southern part of Bangladesh. A *char* is created in the dynamics of erosion and accretion in the rivers of Bangladesh. The *char* emerges as an island within the river channel, or as land attached to the riverbanks. Once vegetated, such lands offer opportunities for settlement or agricultural activities.

Char Bangla was formed in this way. It began to form along the Bura Gouranga river in the 1960s and gradually took the size of a large *char* land in the 1980s. Char Bangla is now nearly 1,012 hectares in size. Located in Char Biswas Union in Galachipa *upazila* (sub-district) in Patuakhili, Char Bangla is populated by about 500 landless families.

Who owns the *chars*?

According to State policy, when a *char* is raised in a river, it is first handed over to the Forest Department, which undertakes its

Key Messages

- Land titling will enhance the adaptive capacity of the *char* people. Otherwise, they will exhaust their resources and undergo physical and mental stresses in the process of securing land titles and addressing land conflicts.
- Char Bangla dwellers have adapted to climate change through a variety of ways, including changing their cropping patterns along with the seasons; timing their cultivation according to predictions of natural disaster; switching to occupations that are more adapted to the weather and climate; diversifying their crops; and, changing their eating habits, among others. But an injurious coping strategy that they have resorted to to cutting their spending on health and on their children's education, with all the negative anticipated outcomes.
- Landless families in the coastal areas will continue to face the frequency and intensity of cyclones and other extreme weather events. Unless their land tenure security is strengthened, they will continue to struggle to face disasters and to rebuild in the aftermath.

forestation for 20 years. In parts of the *char* that are fit for human settlement, the State administration grants a one-year lease for cultivation for landless people.

In 2019, the Department of Land Records and Survey (DLRS) started the Diara Survey — a special kind of survey to determine how many *chars* are found in Galachipa sub-district, in Paruakhali district and to measure their area coverage.

Originally, the *char* lands were listed as *khas* land in the State land account. The agriculture *Khas* Land Management and Settlement Policy 1997 had redefined who comprised landless households. According to the Policy, the landless refer to: (1) households that depend on agriculture but do not have land of any kind (neither homestead nor agriculture); and, (2) households that are dependent on agriculture, have homestead land less than 0.10 acre (0.04 hectare) in size, but do not have agricultural land.

Eighty percent of the inhabitants of *char* lands have no land of their own and are considered as ultra-poor. They live on leased land and are vulnerable to various forms of exploitation. They struggle for a living without access to proper sanitation, primary healthcare and

education, basic infrastructure, and protection of the law. They are excluded from State initiatives and institutional services (e.g., legal aid, health, education, livelihoods, social protection, village court, and formal judiciary).

In the years 2005, 2006 and 2007, the landless people of Char Bangla each received a one-year lease from the administration. Five years later, some land grabbers and landlords (*jotdars*) came in and tried to claim the *char* land. In particular, they brought in their own tenants (sharecroppers) to cultivate the land and thereby displace the settlers. Disputes erupted between the tenant recruits and the farmers, prompting the administration to stop the settlement of the *char* land. Criminal and civil suits were filed, but as a result, the people lost their land, causing them great financial hardship.

In 2006, the landless people filed a writ petition in the High Court challenging the administration's decision to withhold the one-year lease that it had earlier granted. Six years later, in 2012, the High Court finally ruled in favor of the farmers, and directed the administration to allocate the one-year lease in favor of the landless people until the Diara Survey has been completed.

The High Court also instructed the administration to form a committee to monitor and complete the Diara Survey within one year.

At first, the Deputy Commissioner (DC) of Patuakhali district did not comply with the High Court's order. This prompted the farmers to file a contempt petition against him. Only then did the DC begin undertaking the Diara Survey. The COVID-19 pandemic halted all related activities, but in 2021 the Diara Survey resumed and it is still ongoing.

In cooperation with the non-government organization (NGO), the Association for Land Reform and Development (ALRD), and their partner organizations, the landless people held several meetings with the DC, Upazila Nirbahi Officer (UNO), the Assistant Commissioner (Land), and Regional Officers overseeing the Diara Survey. They also submitted several memorandums citing various irregularities in the conduct of the Diara Survey. This clearly shows that the process of getting settlement for landless people in *char* areas is quite time-consuming and complicated.

Impact of disasters on *char* dwellers

Climate disasters like flood and river erosion put a lot of pressure on *char* dwellers. So do erratic weather patterns, such as hotter summers and milder winters. It has been observed that there are now only four seasons instead of the usual six. This has negatively affected farmers' production calendars and expected incomes.

Country context

With a population of 163 million living in an area of 147,570 square kilometers (or 1,252 persons per square kilometer) [World Bank, 2016], Bangladesh is one of the most densely populated countries in the world. Over 70 percent of the population lives in rural areas and is mainly engaged in agriculture and related activities. More than two-thirds of the rural population is landless or functionally landless (owning less than 0.2 hectare of land), and 26.4 percent live below the national poverty line with over half of these being classified as very poor [BBS, HIES, 2016]. Endowed with limited land and other natural resources, and with a high population density, poverty is a pervasive problem in rural Bangladesh.

According to a 2016 World Risk Report by the United Nations University, Institute for Environment and Human Security (UNU-EHS), Bangladesh was ranked fifth in the disaster risk index. Between 1970 and 1998, 171 large-scale water-related hazards, such as cyclones, storm surges, droughts, floods, and river erosion disasters, killed an estimated half a million people and affected more than 400 million. The poor are hit hardest because they live in greater density in the most poorly constructed housing in settlements on lands prone to hazards - particularly along the 700 kilometers of coast affected by storm surges [CERP, PPA Report, WB, 2005].

The morphology of the country's rivers is highly dynamic and river bank erosion is also a regular phenomenon, particularly along the banks of the main rivers. The present rate of the Jamuna bank erosion is about 1,770 hectares per year while bank erosion by Padma River is about 1,298 hectares per year. Lower Meghna erodes at a rate of 2,900 hectares per year (Bangladesh Delta Plan 2100, 2018). On average, an estimated 20 to 25 percent of the country becomes inundated due to river spilling and drainage congestion. Extreme situation results when the three major rivers (the Ganges, the Brahmaputra, and the Meghna) reach their flood peak at the same time. In general, 55 to 60 percent of the country is inundated during extreme flood events. Annually up to 20,000 to 30,000 households lose their homes, land and livelihood as a result of erosion and thus become destitute (EKN, 2007).

Land in the *chars* is used for purposes of settlement as well as cultivation. As much as 90 percent of the *chars* that are not eroded in the first four years of their emergence are used for either cultivation or settlement. After seven or eight years, both settlement and agricultural practices are commonly found in the *chars*. Reliable data on landholding size in the *chars* is difficult to obtain. Some parcels of *char* land may have claimants even though they are submerged. Other areas change classification from water to land, or from grassland to cropland. Other lands are strictly *khas* (public) land: some *char* lands are *khas* land, but not all *khas* lands are char lands.

Like the rest of Bangladesh, Char Bangla sustained the full impact of Cyclone Sidr in 2007 and of Cyclone Aila in 2009. Patuakhili District, where Char Bangla, is located, was one of the hardest hit areas.

Salinity in water and soil is one of the adverse impacts of climate change hazards, such as cyclones, floods, storm surges, droughts, and changing temperature patterns. In all of these cases, agricultural land in coastal areas is degraded. During Cyclone Aila, the pressure of 10- to 13-meter-high tidal surges broke the river embankment, resulting in the intrusion of saline water into agricultural land and shrimp farms. Along with prolonged waterlogging, this resulted in increased salinity in water and soil. Agricultural land became unproductive, and farmers growing rice, jute, and sugarcane suffered massive crop failures. Farmers tried to plant *boro* rice, which can grow under poor conditions, but the land had become too degraded even for that.

Furthermore, to produce *boro* rice, pulse, or other crops, farmers had to take out loans, which created additional financial burden on smallholders, marginal farmers, laborers, and sharecroppers.

Responses by the community

Today, 320 families living in Char Bangla still lack tenure security. Like Siraj (see Box on the next page), they do not know whether or not they will have a piece of land of their own in the future. After the two devastating cyclones, Sidr and Aila, and because of the destructive floods caused by river erosion year after year, Char Bangla people have diversified their occupations: most engage in agriculture and fishing. Twenty-five percent rely on three occupations (agriculture, fishing, small treading); and about 10 percent engage in four

Siraj Khan, 65, has been living with his family on Char Bangla for the last 27 years. He has never had a piece of land to call his own. He catches fish in the nearby Galachipa river and cultivates rice on a small low-lying piece of land in the neighboring area.

In 1993, a group of families, including his own, settled in the *char* area, which was nothing but a jungle at the time. They cleaned up the area and began living there. During the first five years of their stay, they were left undisturbed and they lived relatively peacefully.

Siraj relates:

"Five years later some influential people from other areas showed up and started claiming that they were the landowners. In 2007, Cyclone Sidr hit our community. The strong winds did not affect us that much, but the storm surge damaged our houses. We took refuge in a local shelter home, intending to rebuild our houses thereafter. But soon after Cyclone Aila hammered us. Again, the storm surge caused more damage than the cyclone wind. Water rose four feet higher than before. Since our homes were all makeshift houses, all were destroyed except for a few. The flood did not last long, but all our crops were damaged. Since Char Bangla is very far from the sub-district headquarters, we got neither relief nor media coverage. At that time, most of the people lived by fishing. Luck was on our side, and we caught a lot of fish in the river. But danger remains, as tide water rises to our house during the new moon and the full moon. At present, the Diara survey (a special survey for one or more char lands) is going on. We are hoping that in the near future, the government will grant us khas land in accordance with the policy. We will fight for our land rights just as we will continue to fight to survive climate disasters.

occupations (agriculture labor, non-agricultural wage labor, fishing, small scale trading). Other Char Bangla farmers have opted to leave their community and migrate to other places.

Another adaptive practice of the Char Bangla dwellers is to change their cropping patterns along with the seasons, time their cultivation according to predictions of natural disaster, and to switch to occupations that are more adapted to the weather and climate. They have tried to cultivate crops according to the season or climate. They have grown mostly *boro* and *rabi* paddy, guided by the seasons from January to June: January for planting, March for weeding *boro* paddy, and, from May to June for harvesting *boro* paddy. They have started cultivating vegetables, pulse, and, sometimes jute.

They have also changed their eating habits. During the flood period, *char* dwellers are forced to sell their cattle to purchase food for the family and to forestall the death of their livestock.

Coastal belt *char* dwellers are also encouraged to diversify crops. They grow saline water-tolerant crops, and vegetables such as pumpkin, ladyfinger, eggplant, and spinach, which require a minor irrigation system. This strategy has proved to be effective for long-term planning but not in the short-term.

Migrant and non-migrant households have also reduced their expenditures on health and education. The possible reasons could be that the affected households had stopped sending their children to school and made them work instead. This strategy however is expected to result in other problems related to skills (education) and labor.

Analysis

The majority of the poor and extreme poor have little access to assets, most important of which is land. Land, indeed, determines the economic condition in rural Bangladesh where agriculture and fisheries are the major pillars of the household economy. Land also determines social standing and political power. A family without land — a deprivation in and of itself — and without higher education is caught in a vicious cycle of poverty. Thus, landlessness appears to be one of the key factors for social exclusion and capability deprivation. Capability deprivation further leads to other deprivations and exclusion from employment, higher education, standard housing, and social security.

It is quite evident that human actions are responsible for the acceleration of climate change. As climate change advances, the frequency and intensity of extreme weather events, such as cyclones, heat waves, flooding, droughts, and heavy precipitation, are going to increase significantly. Although the global frequency of tropical cyclones is expected to decrease or remain essentially unchanged, they may become more intense.

Landless families in the coastal areas will continue to face the frequency and intensity of cyclones and other extreme weather events.

Unless their land tenure security is strengthened, they will continue to struggle to face disasters and to rebuild in the aftermath.

Recommendations

- Properly designed participatory approaches to adaptation can play a role in reducing vulnerability in disaster-prone areas.
- *Char* land people, animals, and agricultural products require adequate protection and shelter from extreme weather events.
- Local awareness about climate change should be enhanced for the generation of local people's knowledge.
- Insurance for crops could be introduced for *char* land people.
- Knowledge and resources for crop diversification should be developed, as well as adaptive agricultural practices. Crops like wheat, corn, and watermelon can be planted but they should fetch the proper market price.
- Both the print and electronic media can play a significant role in spreading information down to the community level on how to cope with the impact of climate change.
- Land titling will certainly enhance the adaptive capacity of the landless people. Otherwise, they will exhaust their resources (money, crops, time, social capital, among others) and undergo physical and mental stresses in the process of securing land titles and addressing land conflicts (including court cases, criminal allegations, and other disputes).
- Secure tenure can improve the adaptation capacity of women and children. The insecure land tenure of the family impacts more on women and children, who frequently forego their basic needs, such as food, health, shelter, education, livelihood, and, security, thus making them less resilient to climatic disasters. Women also can not apply their indigenous knowledge related to family farming and homestead gardening due to lack of land or land tenure security. ■

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CASE STUDY

Climate change affects us all, but the landless more than others

A case study of how tenure security/insecurity affects the post-disaster capacity of communities in Helambu and Melamchi Municipalities, Nepal

Prepared by Jagat Deuda, Community Self-Reliance Centre (CSRC)

In June 2021, heavy monsoon rains engorged the Melamchi and Indrawati rivers, sending torrential floodwaters cascading towards the rural municipality of Helambu and the municipality of Melamchi, both located in the Sindhupalchok District in the Bagmati Province of Nepal.

The floods had a devastating impact on the people of Melamchi. Five people lost their lives, six people were injured, and 20 individuals went missing. A total of 337 houses were fully damaged, resulting in the displacement of 525 families. The flood also had a significant impact on agriculture. Over 1,600 hectares of cropland — which were a lifeline for subsistence farmers — were lost. Farmers' livelihoods were destroyed and food security was threatened. In addition, the complexity of land tenure systems in the region exacerbated the challenges faced by the affected communities in their efforts to rebuild and recover.

Disasters and new inequalities

Unequal access to disaster loss compensation

In general, climate disasters force families to leave their homes: they lose their land and property.

Key Messages

- Policies on climate change are largely silent on land and tenure issues. Organizations working on land and climate change need to work collaboratively to increase understanding on how to integrate the two issues.
- In post-disaster response, recovery, and reconstruction, land tenure or possession of land ownership certificates must not be the exclusive eligibility criteria for availing of the government compensation package.
- The government and all stakeholders concerned must immediately secure the resettlement and proper rehabilitation of all displaced families. The government must allocate "safe" land areas to resettle the displaced families.

However, the severity and duration of such displacement — and prospects for recovery — are not the same for all affected people. Land tenure security determines how easily and how quickly displaced people can rebuild and bounce back from a disaster.

In the aftermath of a disaster, the government often provides a compensation package to make up for losses suffered by affected communities. Unfortunately, access to such support is closely tied to land tenure. This policy therefore excludes tenants, sharecroppers, and those who lease or occupy land from receiving immediate assistance and compensation. In addition to being excluded from compensation, tenants and others in informal land tenure situations face the threat of eviction. This exacerbates their vulnerability and instability.

Women, who often have limited access to property and land rights due to cultural norms and legal barriers, are especially vulnerable in this context. They are disproportionately affected by land-related issues and may not benefit from compensation or inheritance of property.

Ineligibility for livelihood Loans

Displaced families who have lost their source of income need to find other livelihoods. Because the compensation package from the

government is neither enough nor provided in a timely manner, affected families are forced to take out loans to tide them over. However, banks require collateral against the loan, such as a deed to land, house, and other property. An informal land tenure certificate will not do. Thus, families that cannot access formal credit have to rely on informal lenders and pay high interest on the loan.

Conditional post-disaster rebuilding

Displaced families endure harsh living conditions in temporary shelters, which often lack basic amenities and can be overcrowded, making daily life a significant struggle.

Access to government housing support has become a challenge for some families due to the unavailability of land for building new houses.

Land tenure in Nepal in the context of climate change

Different types of land tenure have existed in Nepal over the years. Raikar, Guthi, Birta, Jagir, Kipat, have been the major land tenure types (MoALMC, et al., 2018).

The National Land Policy 2015 groups the different land tenure types into three categories, as follows:

- Formal tenure includes Raikar land, Guthi land, government land and public land that are legally recognized in related legislation and policy documents of the Government of Nepal.
- Non-formal tenure covers lands that are included in the Field Book after the cadastral survey; lands with official records and documented revenue payments but are not covered by the cadastral survey; lands without documentary evidence, are self-settled, and are covered by existing laws.
- Informal tenure refers to lands that have been used and occupied for long periods of time even without documentary evidence of ownership; and encroached land which are not covered by existing laws.

These land tenure systems are exploitative and inequitable and have historically caused starvation among the Nepali peasantry and inflicted a tremendous amount of hardship in their search for livelihoods (Uprety, 2021).

This situation is particularly problematic for those living on Trust land or are working as tenants. As a result of these challenges, some families are forced to permanently relocate to urban areas, leaving behind their traditional rural livelihoods and communities.

Responses by the community

The community plays a pivotal role in helping the affected families, such as aiding search and rescue efforts, providing food, and arranging temporary shelter. Moreover, the community offers temporary accommodation to several individuals who have been displaced due to disasters. Their efforts do not stop there – the community also actively participates in the treatment and care of the injured individuals.

Land distribution in Nepal is highly skewed. An average land holding size is 0.86 hectare. Forty-seven percent of households own only 15 percent of the total agricultural land, with each landholding having an average size of less than 0.5 hectare. About 29 percent of households do not own any land (Adhikari, 2008). Nepal's deeply discriminatory and hierarchical society has excluded Dalits, women, and indigenous peoples from getting access to and control over land. Forty-four percent of *Dalits* in the Terai are landless while 22 percent of *Dalits* in the hill are landless (CSRC, 2012). About 80 percent of the indigenous population are marginal landowners, possessing one acre (0.4 hectare) of land. Only 23.8 percent of women own land[1], especially in urban areas.

Nepal is ranked as the world's fourth most vulnerable country to anthropogenic climate change.

At the same time, it is the 20th most vulnerable country in the world to multiple-hazards (MoHA and DPNet-Nepal, 2015). Nepal experiences recurring incidences of earthquakes, floods, landslides, and fire.

The most profound impacts of climate change will be on the agriculture sector, water resources, public health, and energy. The Eastern Himalayas experience widespread warming of 0.01 to 0.04°C per year. The amount of rainfall is declining over the whole central and eastern regions. Almost all types of land degradation exist in the country, particularly soil erosion, landslides, and flooding.

[1] Women's ownership of land has increased mainly because of the government subsidy up to 40 percent on land registration fee in the name of woman.

The degree of mobilization and self-organization increases the likelihood of the community's participation in reconstruction efforts and of enhanced social inclusion.

Responses by the authorities

Resettlement remains a distant dream for displaced families. The government program for resettling the displaced families is lagging behind and to this day not a single family from the Melamchi area has been resettled.

Some families opt to find settlement areas outside of the government program. Unfortunately, many settlement areas in Melamchi are at extremely high risk of disasters. These settlements, which are located on floodplains and steep hills, are highly vulnerable to floods and landslides. Nevertheless, people continue to live in these "unsafe" areas even after a disaster because they say they have no better options.

In fact, even government sponsored resettlement programs fail to consider possible disaster impacts in the resettlement areas. Riverbanks are often considered by the government as preferred areas for resettling displaced families, when in fact, these areas are at high risk of floods and inundation and expose the displaced families to another set of disasters.

The option of rebuilding their homes is not possible for many affected families. The compensation amount being offered by the government is not sufficient to purchase a minimum amount land and to build a decent house. Where families had initially received some money, the compensation stopped after the first installment.

As a result, the situation of displaced families continues to deteriorate. Many of these families have survived several monsoons, winters, and summers -- living in temporary shelters that pose health risks, particularly to children, the elderly, and pregnant and lactating mothers. A few cases of premature deaths of family members and relatives of these families have been reported. Water facilities and toilets are limited but are shared by several families. Overall, the living

The faces of loss and survival

Mr. Devi Prasad Guragai lives in Helambhu Rural municipality-6, which was badly affected by the Melamchi flood. He had been working as a tenant, as his forefathers did before him, and in return received half of the harvest. Mr. Guragai said that his half of the yield had been sufficient to feed his family and to cover their other needs. In 2021, the Melamchi flood washed away their entire land and paddy. Following the disaster, an employee from the local government came to record the loss incurred by the landlord. Mr. Guragai's loss was not accounted for. At the time, Mr.Guragai feared that if the government decided to provide compensation, only the landlord would receive it, and not him nor his family. True enough, since his losses were not recorded, he was considered as ineligible for aid.

The five-member family of Ben Bahadur Thapa Magar and Kalawati Thapa Magar resides in Helambhu municipality. During the Melamchi flood, his family lost the land that they were cultivating. Their land is Guthi (Trust), which is government or public land classified as formal tenure land by the National Land Policy 2015. Mr. Magar used to grow cardamon and banana as his family's main source of income. The flood washed away their land and they have yet to receive compensation for their losses.

Ms. Kalawati Thapamagar works as a wage laborer to support her family. Her husband suffers from mental illness and cannot work. Her family built a house on a small parcel of Guthi (Trust) land, for which they have a temporary certificate. In the wake of the Melamchi flood, Ms. Thapamagar attempted to apply for a bank loan. However, the bank would not accept land with a temporary certificate as collateral. The family thought of selling the land but decided not to, as it was all that they had left after the floods. They continue to live a hard life with very

situation of displaced families is not dignified and families require immediate assistance.

Recommendations

Policy recommendations

- The government must recognize that improved tenure security is an important enabler of climate change adaptation. Land tenure issues must be prioritized in the development of climate adaptation strategies and actions.

- Policies on climate change are largely silent on land and tenure issues. Organizations working on land and climate change need to work collaboratively to increase understanding on how to integrate the two issues.
- In post-disaster response, recovery, and reconstruction, land tenure or possession of land ownership certificates must not be the exclusive eligibility criteria for availing of the government compensation package.
- Land use planning is essential to reduce disaster vulnerabilities and risks. The government must prioritize developing the land use plans at local, provincial and federal levels, identify "unsafe" areas, and take appropriate measures to protect people from disasters.
- The government and all stakeholders concerned must immediately secure the resettlement and proper rehabilitation of all displaced families.
- The government must allocate "safe" land areas to resettle the displaced families and relax administrative processes in land registration.
- Securing the equal rights of women and men to land is essential for post-disaster recovery, social equity, and economic growth. The right to own land not only enhances women's status and position in the family but also in the post-disaster situation; this entitlement plays a major role in reducing vulnerabilities.

Community (Melamchi) level recommendations

- Losses incurred by tenants, sharecroppers, and other secondary landholders need to be accounted for and included in the compensation package.
- The compensation package should cover not just the loss of people's houses but also the loss of arable land.
- The local government must check and regulate sand mining in the Melamchi river. After the Melamchi floods, a large area of arable land along the riverbank has been reduced to sand dunes and boulders. Sand mining in the river is expected to increase, leading to increased risk of floods. ■

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CASE STUDY

Land rights take center stage in Asia's fight against climate change

Prepared byb Pubudini Wickramaratne[1] *and Rashmini de Silva,*[2] *Oxfam*

The impacts of the climate crisis on land are immense: it causes loss of land, soil erosion, and land degradation that forces changes in land use. It threatens the land rights of communities, causes displacement, affects food security, and aggravates land inequality. These impacts have led to greater competition for land, and increased pressures on land use. Communities struggle to cope with loss and damage, unable to recover from them or to improve their climate resilience.

Oxfam listened to women and men from Bangladesh, Nepal, Sri Lanka, and Timor-Leste who shared their stories on how the climate crisis has caused loss and damage to their lands, and the impact this has had on their lives.

The stories demonstrate that land ownership is a key factor in determining people's eligibility to receive assistance to recover from loss and damage. Those who could prove land ownership received

[1] Pubudini Wickramaratne is the Land Rights Policy Lead of Oxfam International.
[2] Rashmini de Silva is Oxfam International's Research Consultant (Gender, Climate Change, Agriculture). She is also a researcher of the Law and Society Trust.

Key Messages

- The rural poor who lack land tenure security are less able to adapt to the impacts of the climate crisis because they cannot make the necessary farming decisions and investments designed to improve their resilience and adaptive capacity.
- Proof of land ownership is the key that opens access by the rural poor to government support that is crucial for recovery from climate-induced loss and damage. Many of the rural poor are unable to show such proof and thus are excluded from support that they need to rebuild their lives and livelihood following loss and damage from climate change.
- The impact of the climate crisis goes beyond socio-economic ruin, but also results in the loss of a person's standing in her/his community. Without land, the rural poor suffer the degradation of their identity and pride.
- Women and girls face the risk of violence from men when the family's fortunes sink. They are also forced to take on the main responsibility for keeping the family together when the men leave their homes for work elsewhere. They are always harder hit in the aftermath of climate-induced loss and damage.

compensation and alternative land or relocation benefits, while those who did not own the land or could not show proof of their rightful ownership and tenure struggled to obtain these benefits. Similarly, land ownership gave access to membership in farmer societies through which government extension services relating to climate adaptation and mitigation as well as climate finance were channeled.

The stories we heard show the importance of secure land tenure to avoid, minimize, and address loss and damage, particularly for the most vulnerable, and to increase their climate resilience.

Lack of decision-making power over land, coupled with power imbalances and overlapping inequalities, increases the climate vulnerability of farmers and prevents them from taking steps to avoid loss and damage.

In Sri Lanka, 80 percent of lands belong to the State[3] and are distributed among people under the Land Development Ordinance[4] and the State Land Ordinance.[5] These two laws provide the mechanisms under which State land can be distributed to persons. The policy of the State has been that State lands ought not to be transferred to people as freehold, and hence the permits and grants under which State lands are distributed contain many conditions requiring development of the land as per specifications mentioned in the permits and restrictions on selling or otherwise disposing of the lands. However, the implementation of these laws has been slow and involves prolonged administrative processes. Even where State lands have been distributed to people, much of the control and decision-making power related to these lands is retained by the State.

K.P. Somalatha is a paddy farmer from the drought-stricken Monaragala District in Sri Lanka. She occupies State land that had been given to her through a land grant by the government. Even though she has rights to her land, Somalatha explains how the State still retains control over the land, seriously affecting farmers' ability to adapt to climate change and at times forcing them to find livelihoods other than farming.

> *"We used to cultivate paddy in two seasons but with the unpredictability of rain, we have reduced it to one. Rice farmers struggle to earn a profit with low-yielding harvests, [and also] only once a year because we do not have enough water."*

Even though State lands have been allocated to people by the government, crucial decisions such as those pertaining to water allocation, the kind of fertilizer and other farming inputs to be used,

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[3] Law & Society Trust, 'State Lands and Land Laws: A Handbook' (2015) < https:// www.lstlanka.org/wp-content/ uploads/ 2022/ 02/Booklet-2-State-Lands-English-1.pdf> accessed 14 June 2023

[4] Land Development Ordinance No. 19 of 1935

[5] State Land Ordinance No. 8 of 1947

and the seed varieties to be planted, are still made for farmers by the government agriculture officials, leaving little or no decision-making power to the farmers with paddy lands located under irrigation systems.

> *"Our land was awarded to us by the State through a grant and for which we received a land certificate. However, we are landholders in name only. We cannot really make any decisions about our land. We want to cultivate indigenous paddy varieties which require less water and produce a higher yield while using less amounts of agrochemicals. But State officials prioritize corporate profits. We very rarely get any compensation for droughts, and when we do, the amount we receive does not cover even 10 percent of the loss we suffer."*

Prolonged droughts in Somalatha's village have diminished groundwater levels. As a result, their lands are no longer arable. Rural farmers struggle to cope with these losses and damages. They often fall into debt or stop farming altogether. The domino effect of having limited to no control of one's land has severe economic and non-economic implications which go beyond their lack of resilience to climate change.

Land ownership is a key criterion for membership in farmer societies through which agriculture extension services, including crop insurance, and drought relief, are provided.

In Sri Lanka, farmer and irrigation societies are one of the main mechanisms through which government-led support is channeled to agricultural communities. As land ownership is a prerequisite for membership of these societies, farmers who do not have formal ownership of lands are unable to access agriculture extension services, support for adaptation and mitigation measures, crop insurance, and drought or flood relief provided by the government.

Namal Sanjeewa is a fourth-generation farmer from Badulla District in Sri Lanka. Namal cannot access drought relief because he does not own his farmland.

> *"We have occupied these lands for over three generations, but the State refuses to give us land permits, saying that we are living on encroached State land. They refuse to release irrigated water from reservoirs to our lands because they want us to vacate the area and give our lands to a private company for sugar cane plantation. We do not receive any agriculture extension services or technical support for climate mitigation or adaption from the Agrarian Services Department. Since we do not own the land, we are not recognized as farmers. We are unable to register for crop insurance or drought relief for the same reason."*

High temperatures, irregular rainfall patterns and prolonged droughts have degraded their lands and rendered the soil infertile. Harvests are going down. Without assistance from the government and without secure land tenure, farmers like Namal are unable to make investments to adapt to these climatic changes. Thus, they continue to suffer loss and damage year after year.

> *"We carry these losses to our next cultivating season. It affects our families, our children's education, household food security, health and all aspects of our lives. Recovery after a drought seems next to impossible to us. The State refuses to formalize our ownership and we are forced to watch our farming communities deteriorate in the face of extreme drought. In addition to our livelihood, our dignity and worth as small-scale food producers is at stake."*

There are around 163 farming families in his village facing a similar predicament to Namal. Unable to bear the continued losses and increasing debt, many of these farmers are gradually moving away

from agriculture to daily wage labor or have migrated to cities to find jobs.

Loss and damage to land exacerbate existing gender inequalities and trigger a chain reaction of socio-economic consequences for women and girls.

Land degradation due to lack of water and prolonged droughts has reduced yields and has had a significant impact on farming communities in Bangladesh. It has affected not only farmers but also agricultural workers, creating a ripple effect within agricultural communities.

Shaheena Aktar is a daily-paid agricultural worker from Nowapara, a village in Cox's Bazar, Bangladesh.

> *"Because of lack of water, the harvest is low. I am not paid properly by the landowner when the income from the crops is low. We have to travel far to bring water to irrigate the land because water is scarce here. It takes a lot more time, but I am not paid for the extra hours I work. Although we work in the same field, men are paid more than we are."*

The consequences of reduced household income disproportionately affect women and girls.

> *"I am a single mother. I live in a rented house. If I do not get paid, I cannot pay rent, buy food, or send my daughter to school. If women do not bring in enough money from their farming work, they are beaten up by their husbands. This is very common in my village. Because families do not have enough money, girls discontinue their education or are married off early. Early marriage is quite common in my village."*

The intricate chain reaction of socioeconomic consequences which start with the loss of land productivity or degradation of soil leads to generational inequalities, especially for women.

Climate-induced migration increases the care burden on women and exposes them to harassment and violence.

Shamsun Nahar is a farmer from Hajrakhali, a village in Satkhira, Bangladesh. Her region is characterized by high soil salinity levels due to water logging and river erosion. This has lowered the productivity of their farms. As a result, the men are forced to migrate to cities in search of employment, leaving behind women with increased responsibilities and exposure to vulnerabilities.

> *"Our household income is affected when our farmlands produce low yields. It affects the food we eat, our children's education and even our dignity. We cannot depend on our farmlands as our sole source of income. It is very common for men to move away to [distant] regions to earn money to support their families."*

This increases the burden on the women who are left behind in the village.

> *"Women have to walk long distances to collect water. When a family's income is affected or reduced, it creates a lot of pressure on the women and leads to domestic violence."*

Loss of land has many consequences, including diminishing one's status and position in society.

H.M. Morshed lives along the banks of the Bishkhali river in Dhaalbhanga village in Barguna, Bangladesh, where floods due to cyclones and tidal upsurges and riverbank erosion are highly prevalent. His house was destroyed by cyclones Aila and Sidr and he lost almost 80 percent of his family's land to river erosion.

"When the Bishkahli river had a solid embankment, my land was protected and I could cultivate there. After the floods broke the embankment, further erosion took the lands away, and now the banks of the river are very close to my house. As we lose more of our land, we will have less and less land to make a living from."

For Morshed, apart from losing his lands, the biggest setback that he has suffered was to his status in society.

"When I had my land, I was regarded highly in my community. After the river took my land, my position in society dwindled. I would not be facing these economic hardships if I had my land. People who own land can recover faster after a disaster. "

Land ownership influences a person's status or position in society. Loss of land due to the climate crisis not only has economic consequences but also non-economic losses related to a person's status in their community.

Lack of land ownership increases the vulnerability of communities and decreases their ability to recover from loss and damage.

Chanahari Chaudhary is a farmer from Chandrapur Municipality in Nepal, an area prone to floods, drought, river erosion and heavy rainfall. Chanahari's family used to cultivate paddy, vegetables and maize on his land, which has now been converted to a riverbank.

"My land was destroyed by floods. Our main source of income was farming. I used to earn 150,000 Nepalese Rupees, or about 1,175 US Dollars, a year. After our land was destroyed, my family and I were forced to take on daily-paid labor work to make ends meet. We could barely buy food or educate our children after the floods destroyed everything. We subsequently

leased some land and started cultivating mangoes and vegetables."

Chanahari reports that he received little to no support from the government to rebuild his life and livelihood following the disaster. His story reflects how loss and damage to land and its consequences are often irreversible.

Farmers who do not possess formal ownership of their land are extremely vulnerable in the context of natural disasters. In the absence of evidence of their right to the land, they risk losing it. Thus, following a disaster, some farmers decide to remain in their communities, which are still hazardous, rather than to migrate or relocate. This traps them in highly vulnerable environments and exposes them to further risks.

Communities who owned land could only access government-led support after Cyclone Seroja affected Timor-Leste.

Timor-Leste suffered heavy loss and damage due to Cyclone Seroja in April 2021. People living in flood-prone, high-risk zones in the capital Dili and other municipalities lost their lands and homes.

The scale of the impact caused by the cyclone prompted the government to enact Decree Law No. 7/2021, which provides for government assistance to victims of serious accidents or disasters. In particular, the law enabled landowners to leave Dili to rebuild their lives elsewhere.

Meanwhile, affected Dili households that returned to their home villages received housing construction materials and 1,000 US Dollars for labor costs. However, this government assistance was not available to people without land. As a result, many families returned to still unsafe areas to rebuild their houses. Besides the dangers this posed to their safety, the families also risked being evicted from what was considered as a government-owned land.

Dilva Coreira lives close to the Timorese naval base in Hera with her husband and five children. She moved there as a young girl when her father, who was a fisherman, was relocated from Bidau-Mota-Klaran to Hera in 1991 by the Indonesian Department of Fisheries along with 200 other fisher families. Her village is surrounded by the sea on one side and large fish ponds on the other.

> *"We have lived there for 30 years and are very worried about our rights to the land. When the government registered this land, they did not write down our names or give us any documents, so we are concerned that they did not register the land in our names. We have asked for information, but the government has not explained our rights to us. We have heard that the government will relocate us to a new area in Dili or to a rural area, but they have not explained the real benefits and risks of these options to us.*
>
> *We have lost not only our homes but also our income from agriculture. We do not know where we will get the support we need to re-establish our livelihoods as farmers and fisherfolk, or what will happen to our land."*

Through cracks and crevices, land matters…

These stories demonstrate that loss and damage to land not only affects the land rights of communities, but also has an impact on other aspects of their lives. These experiences also show that secure land tenure is a significant factor that enables communities to better respond to the climate crisis. Secure land tenure empowers communities to make decisions and investments to improve their climate resilience. Land ownership enables communities to receive assistance and climate finance to address and recover from loss and damage. Oxfam therefore advocates for strengthened land tenure rights as a pathway to address the climate crisis. ■

This article is an excerpt from "Loss and Damage to Land: Voices from Asia" published by Oxfam International in June, 2023.

The full paper can be accessed via: https://policy-practice.oxfam.org/resources/loss-and-damage-to-land-voices-from-asia-621531/#:~:text=paper%20(5%20MB),Overview,lands%20and%20impacted%20their%20lives

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Mainstreaming land rights in the narrative of climate change

From 10-11 October 2023, the Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC) and the Association for Land Reform and Development (ALRD), in partnership with the Global Forum on Agricultural Research and Innovation (GFAiR), the Global Land Tool Network (GLTN) and the Land Portal Foundation (LPF), organized a conference on *Mainstreaming land rights in the narrative of climate change — views from the ground* took place in Dhaka, Bangladesh. The conference produced the Dhaka Declaration, which submitted recommendations to operationalize a human rights-based approach to climate justice that affirms the link between climate action and the land tenure security of the rural poor. This included ensuring that land governance, land reform, and equitable access to land, water, and natural resources are the building blocks for climate resilience and guaranteeing the full involvement of all stakeholders, particularly those most vulnerable to climate change.

We are from grassroots and local communities, civil society organizations, academic and research institutions, international organizations, and a cross-section of the citizenry from twenty-one countries[1] who have participated in the conference on *Mainstreaming land rights in the narrative of climate change: views from the ground,* held on 10-11 October 2023, in Dhaka, Bangladesh.

We recognize that the climate crisis is the result of global injustice and continues to create conditions for greater inequality. Developed

[1] In-person and virtual participants from Bangladesh, Cambodia, Ethiopia, Germany, India, Indonesia, Italy, Ivory Coast, Jordan, Kazakhstan, Kenya, Madagascar, Nepal, Netherlands, Philippines, South Korea, Sri Lanka, Uganda, United Kingdom, United States of America, and Vietnam.

countries became wealthy through fossil-fuel powered industries that unleashed the carbon emissions responsible for climate change. In a world severely impacted by the climate crisis, developed countries are demanding that poor, developing countries cut their carbon emissions at the cost of their own development pursuits.

We acknowledge the existing global instruments and commitments such as the Kyoto Protocol, Sendai Framework for Disaster Risk Reduction, Paris Agreement, Warsaw International Mechanism for Loss and Damage, and others.

Climate change affects everyone. Yet the poor, vulnerable, and excluded groups suffer its worst effects. It exacerbates existing inequalities. Women and children are the hardest hit in the face of climate-led disasters and slow-onset climatic changes.

We declare that the lack of land rights such as landlessness and insecure land tenure of the rural poor:

- renders them extremely vulnerable to the impact of climate change, as they are forced to settle in areas that are fragile and disaster-prone;
- inhibits their ability to recover from impacts of climatic events;
- restricts their capacity to engage in climate adaptation and mitigation which protect and sustain their lives and livelihoods;
- deters them from implementing sustainable land use and governance practices;
- severely limits their right to make decisions and investments that ensure their survival and improve their resilience; and,
- disqualify them from government compensation for loss and damage, extension services, and support for resettlement.

We are concerned that climate-induced migration and displacement detaches people from their source of livelihood and can cause socio-cultural disintegration of communities, thereby, increasing conflict.

We express concern that people affected are often treated as a problem rather than an active partner in climate action. The planning and implementation of adaptation and mitigation programs are often

top-down, and communities are excluded from discussions and decision-making.

We affirm that the rural poor can lead climate solutions in their communities as shown by experience. These include adopting sustainable land use and governance practices, transitioning to sustainable agriculture, promoting indigenous knowledge, diversifying their livelihoods and crops, including growing climate-resilient varieties, and sustainable and participatory management of community forests and rangelands, among others.

We recognize the close linkages among climate injustices, insecure land tenure, and violations of human rights. A human rights-based approach to climate action requires safeguarding the most vulnerable people while responding to their needs and supporting them to be agents of their own resilience.

We therefore submit the following recommendations to operationalize a human rights-based approach to climate justice that affirms the link between climate action and the land tenure security of the rural poor:

- Amplify the voices of the poor and marginalized. Those who are most vulnerable to climate change impacts must participate and be represented in political and decision-making processes.
- Ensure that land governance, land reform, and equitable access to land, water, and natural resources are the building blocks for climate resilience. Secure tenure will increase the capacity of the rural poor to sustainably use their land.
- Recognize and protect indigenous peoples' rights to land and culture, and support customary use, management, and governance of land and natural resources, including forests, rangelands, and fisheries. Governments and policymakers should enact and reform laws, ratify and implement international conventions to safeguard indigenous peoples' stewardship over their domains.
- Address gender discriminatory laws, policies, and practices which hinder equal land rights for women; remove barriers to women's full participation and decision-making in sustainable land use, management and governance.
- Ensure the full involvement of all stakeholders, particularly those most vulnerable to climate change, in the formulation,

implementation, monitoring and evaluation of policy instruments for land-based climate change adaptation and mitigation. People in vulnerable situations who face greater risks and threats from climate change have the right to meaningful and informed participation in all decisions that affect their rights and survival. The rights to free, prior, and informed consent of indigenous peoples and other affected communities must be respected.

- Respective governments should adopt open data principles and standards when publishing land governance and climate change data in accordance with FAIR[2] and CARE[3] Principles. Open data is a precondition to the right of people to meaningful and informed participation in decisions that affect their rights and survival.
- Governments should uphold, protect, and enforce the rights of all persons that have been internally displaced due to climate change – in accordance with the Universal Declaration of Human Rights (UDHR) and international obligations.
- Develop new normative arrangements to respect, protect, and enforce the rights of persons displaced across *international* borders due to climate change. This includes the development of a protocol to the Convention relating to the Status of Refugees to ensure that the human rights of persons displaced due to climate change across international borders are formally acknowledged and enforced.[4] The global community has an obligation to care for these displaced persons.

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[2] In 2016, the "FAIR Guiding Principles for scientific data management and stewardship" were published in Scientific Data. The authors intended to provide guidelines to improve the Findability, Accessibility, Interoperability, and Reuse of digital assets. The principles emphasize machine-actionability (i.e., the capacity of computational systems to find, access, interoperate, and reuse data with none or minimal human intervention) because humans increasingly rely on computational support to deal with data as a result of the increase in volume, complexity, and creation speed of data.

[3] The "CARE Principles for Indigenous Data Governance" (Collective Benefit, Authority to Control, Responsibility, and Ethics) was developed by the International Indigenous Data Sovereignty Interest Group (within the Research Data Alliance) – a network of nation-state based indigenous data sovereignty networks and individuals – in consultation with indigenous peoples, scholars, non-profit organizations, and governments. The CARE Principles are people- and purpose-oriented, reflecting the crucial role of data in advancing innovation, governance, and self-determination among indigenous peoples. The Principles complement the existing data-centric approach represented in the "FAIR Guiding Principles for scientific data management and stewardship."

[4] Promotion and protection of human rights in the context of climate change mitigation, loss and damage and participation. Report of the Special Rapporteur on the promotion and protection of human rights in the context of climate change, Ian Fry. Document A77/226. Seventy-seventh session of the United General Assembly, 26 July 2022.

- As governments and multilateral institutions have committed to establish climate funds, these funds must reach local communities and must align with community-identified priorities to build resilience and address loss and damage due to climate change.

We pledge our commitment and solidarity in pursuit of the above recommendations.

Signatories

Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC)
Association for Land Reform and Development (ALRD)
Huairou Commission
Center for Agrarian Reform and Rural Development (CARRD)
Community Self-Reliance Centre (CSRC)
Community Development Assistance (CDA)
Konsorsium Pembaruan Agraria (KPA)
Landesa
Law and Society Trust
Namati
OXFAM
South Asia Rural Reconstruction Association (SARRA)
STAR Kampuchea (SK)
Abma Cultural Development Forum (ACDF)
ARD
Association for Realization of Basic Needs (ARBAN)
Badabon Sangho
Beneficiaries Friendship Forum (BFF)
Charbangla Bittohin Samobay Somiti-Patuakhali
Centre for Development and Peace
CHT Headman Network
Gono Kallyan Sangstha
Gram Unnoyan Sangstha

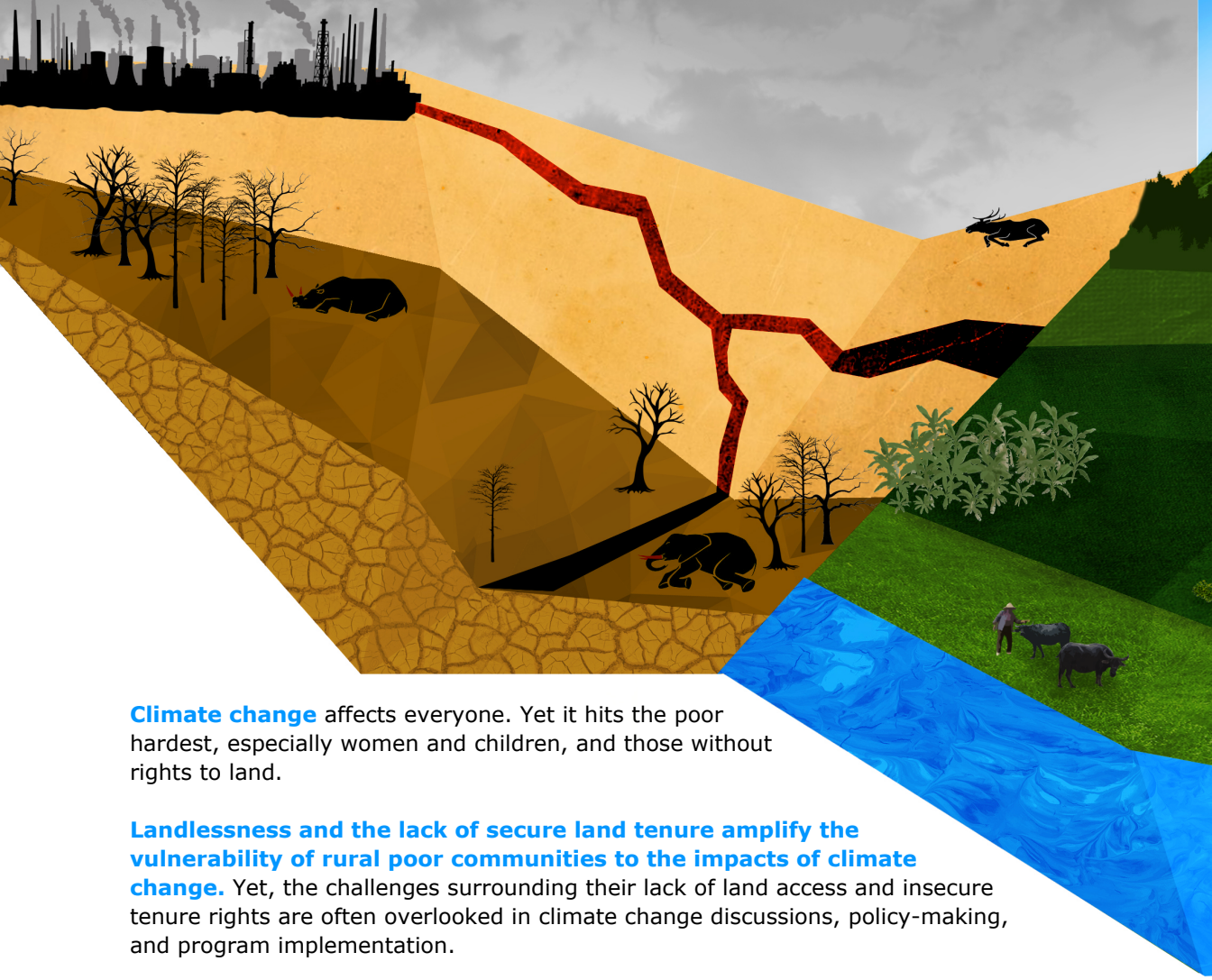
Haor Area Upliftment Society (HAUS)
Landless Development Organization (LDO)
Maleya Foundation
Poribesh Haor Development Society
Onnochitra
Poribesh Haor Development Society
Reach to Unreached (RUN)
RULFAO
Speed Trust
Sundarban Adivashi Munda Sangstha (SAMS)
Women Commission for Development in Bangladesh

The **Global Forum on Agricultural Research and Innovation (GFAiR)** is a unique global multi-stakeholder platform operating in the agricultural Research and Innovation (R&I) system and driven by 900+ Members from 13 constituencies. This inclusive nature rooted in the regions brings to our dialogues and actions diverse interests, capacities, and perspectives, but with one focus: agricultural R&I that recognizes small-scale producers as key global actors and co-innovators.

The **Global Land Tool Network (GLTN)** is an alliance of global, regional, and national partners contributing to poverty alleviation and the Sustainable Development Goals through increased access to land and tenure security for all. The Network's partnership of organizations is drawn from the rural and urban civil society, international research and training institutions, bilateral and multilateral organizations, and international professional bodies. GLTN takes a more holistic approach on land issues and improves on global land coordination through development, dissemination and implementation of pro-poor and gender responsive land tools. These tools and approaches contribute to land reform, good land governance, inclusive land administration, sustainable land management, and functional land sector coordination.

The **United Nations Human Settlements Programme (UN-Habitat)** helps the urban poor by transforming cities into safer, healthier, greener places with better opportunities where everyone can live in dignity. UN-Habitat works with organizations at every level, including all spheres of government, civil society, and the private sector to help build, manage, plan, and finance sustainable urban development. UN-Habitat envisions cities without slums that are liveable places for all, which do not pollute the environment or deplete natural resources.

The **Land Portal Foundation (LPF)** believes access to information is crucial to achieve good land governance and to secure land rights for vulnerable people. The Foundation creates, curates and disseminates land governance information through linked and open data technologies, and support our partners to take the same steps.



Climate change affects everyone. Yet it hits the poor hardest, especially women and children, and those without rights to land.

Landlessness and the lack of secure land tenure amplify the vulnerability of rural poor communities to the impacts of climate change. Yet, the challenges surrounding their lack of land access and insecure tenure rights are often overlooked in climate change discussions, policy-making, and program implementation.

This publication shares twelve stories from Asia and Africa where communities seek to cope with climate change by claiming their rights to land. **These case studies show how the absence of secure land rights make poor rural communities more vulnerable to climate change impacts and limit their ability to recover.** They also illustrate how the lack of land rights prevents communities from engaging in climate adaptation and mitigation; disqualifies them from government compensation for loss and damage; deters them from implementing sustainable land use and governance practices; and, severely constrains their right to make decisions for their survival and resilience.