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

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—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

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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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