Climate Resilience Alliance

GOOD PRACTICES BANGLADESH

CONCERN worldwide

গণ উন্নয়ন কেন্দ্র
Gana Unnayan Kendra

The Flood Resilience Project in Bangladesh aimed to strengthen the resilience of 21 communities across the Char areas located in the northern part of Bangladesh from 2021-2024. The project harnessed advocacy efforts to improve the implementation of policies and increase budget allocation to enhance resilience preparedness, early warning systems and action, collectively strengthening the resilience of communities to the impacts of floods.

Bangladesh is highly susceptible to a range of hazards due to its geographical location, topography, and climatic conditions. These hazards include floods, heatwaves, cyclones, droughts, landslides, and earthquakes. High population density, poverty and reliance on climate-sensitive sectors of income generation, in particular agriculture, fisheries and livestock, increase its vulnerability to climate change. There are also considerable gaps in implementation of policies linked to disaster management, with the main challenges being the implementation of policies at local level, lack of appropriate investment, and also an absence of evidence of what works in building climate resilience.

This project was implemented in two districts, Lalmonirhat and Gaibandha of Rangpur Division, as part of the Zurich Flood Resilience Alliance, funded by the Z Zurich Foundation. Now the Zurich Climate Resilience Alliance. this multi-sectoral partnership focuses on enhancing resilience to climate hazards in both rural and urban communities. By implementing solutions, promoting good practices, influencing policy and facilitating systemic change, it aims to ensure that all communities facing climate hazards are able to thrive.

In Bangladesh Community Resilience Action Groups (CRAG) were formed in each community to work with communities and advocate for innovative solutions to tackle ongoing challenges related to flood preparedness, response and recovery, and build the overall climate resilience of the communities. This booklet contains a collection of 12 good practices that were identified through the Flood Resilience Project working alongside the CRAGs.

The Brahmaputra River is expanding, threatening to wipe out a settlement of several households as it forces residents to relocate to nearby highlands. Prolonged heavy rainfall has led to frequent flooding, accelerating the shifting landscape across the river basin areas of Gaibandha. Photo: Saikat Mojumder/Concern Worldwide

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Concern GP-01

01

Rebuilding a Flood-Resilient Embankment: The Dhubni Model

In Daunbni, Rangpur, the 17 member committee meet once a month to represent their 1600 households. The group works with Concern through local partners. They have worked on reconstructing embankments for flood resilience. They have also built pathways to make movement easier during floods. Photo: Gavin Douglas/ Concern Worldwide

The context

Approximately 10,000 families and 60,000 people of the three-unions (Singimari, Patikapara and Sundurna unions) under Hatibandha sub-district of Lalmonirhat district of Bangladesh, finished their dinner as usual on October 19, 2021. Like previous night, they were preparing to go to bed. However, thet night was different to other nights. A woman, walking along the embankment road, noticed flood water speedily reaching the road edge. She instantly alerted her neighbours.

On the fateful night, the mighty Teesta River breached the earthen dam at Dhubni locality unleashing a devastating flood that would change the course of the community's future. The flood's origins are traced back to the Teesta River, where a sudden and unprecedented rise in water levels, exacerbated by the pressure on the Bangladesh Water Development Board (BWDB)-constructed earthen embankment, had created a 200-foot-wide breach. When the neighbourhoods were flooded in just a couple of hours with water at tense speed, people came out of their households, carrying children and elders for shelter. The community didn't know how their life could return to what it was before.

The aftermath

The cascading floodwaters submerged crops, inundated homes, and damaged critical infrastructure, leaving hundreds of families displaced and struggling to regain their footing. The once-thriving village of Dhubni had been plunged into a state of crisis, its resilience tested by the sheer force of nature.

The resulting torrent of water inundated approximately over 1,000 hectares of Transplant Aman rice crops, uprooted thousands of trees, and devastated local fish ponds. The impact stretched far beyond Dhubni, affecting around 10,000 families across Singimari union and neighboring Patikapara and Char Sundurna unions.

The flood's devastation extended to the region's transportation network, suspending train services on the Hatibandha-Burimari rail track for several days and disrupting access to markets, restricting the daily income of van and rickshaw pullers. Even the local schools had to remain closed for over a month, as the community grappled with the aftermath of the flood that had left a staggering financial loss of BDT 50 million in its wake.

The process of building the resilience

After the crisis subsided, the community gathered in a nearby schoolyard, discussing how to prepare for a similar situation in the future. In the face of this flood, the resilient people of Dhubni refused to be conquered by the forces of nature. With unwavering determination and a steadfast community spirit, they embarked on a remarkable journey to rebuild, emerging stronger than ever.

At the heart of this inspiring story lies the Community Resilience Action Group (CRAG), a locally-driven initiative supported by the Flood Resilience Project (FRP). Mobilizing swiftly in the aftermath of the disaster, the CRAG members engaged with the local authorities, including the union parishad, upazila (sub-district) administration, and the Bangladesh Water Development Board (BWDB), to coordinate a comprehensive response. The Union Disaster Management Committee (UDMC) played a vital role in coordinating together with the CRAG and provided 300 units of plastic sacs, at the same time the local community supplied a huge number of twelve-foot-long bamboo poles as the construction materials.

Recognizing the urgent need for action, the FRP project stepped in, providing substantial financial backing to cover the majority of the reconstruction costs. Residents rallied together, contributing their labor and time to the restoration of the embankment.

The output

Under the skilled guidance of CRAG President Md. Mosharraf Hossain, a 500-foot-long structure was meticulously reconstructed, measuring 12 feet wide at the top, 24 feet wide at the base, and standing 7 feet high. This robust design, engineered to withstand the onslaught of future floods, was a testament to the community's commitment to resilience. Once the embankment was built, the community felt a sense of relief.

The outcome

As the embankment gradually took shape, its positive impact began to transform the community. Farmlands that were once submerged and devastated now stood protected, enabling a successful harvest of Transplanted Aman rice. Villagers embraced pond fish culture without fear of losing their ponds to floodwaters, while restored market access allowed van and rickshaw pullers to resume their livelihoods. Over 100 students returned to their classrooms without disruption, and the community not only overcame the immediate crisis but also established a foundation for a future free from the constant threat of flooding. Today, more than 60,000 people sustain their livelihoods, no longer fearing the inundation of their homes, assets, or belongings.

Md. Mosharraf Hossain, President of the CRAG, proudly reflects, **"We worked hand-in-hand with the Flood Resilient Project (FRP) and local authorities, and through our collective labor, we restored safety and livelihoods. Now, our children can attend school, and our harvest is secure."** His words capture the essence of Dhubni's story - a testament to the resilience of the human spirit, where self-reliance and unity triumphed over nature's challenges, paving the way for a brighter and more secure future. In recent years, food and water shortages no longer caused such severe disruptions – Mst. Amena Begum from Dhubni village shared, **"We have endured immense hardships due to the floods. My children and I often went without food for days. For nearly six months, we survived on one or two meals a day. However, after the embankment was built, our rice fields are no longer submerged during floods. By the grace of God, we can now eat three meals a day. I am deeply grateful to Concern Worldwide for providing us with such support."**

Maintenance for sustainability

Under the leadership of Md. Mosharraf Hossain and with the active participation of CRAG members, the community collectively undertook a transformative initiative. Banana trees were planted along both sides of the embankment, while Vetiper (binna) grass was strategically introduced to prevent soil erosion. Driven by a strong sense of volunteerism, community members actively maintain the embankment, ensuring proper slope management for efficient rainwater drainage and fostering the growth of the trees and grasses. This collaborative effort not only safeguards the embankment but also strengthens the community's resilience against future environmental challenges.

Resilience

Amidst the growing challenges of climate change and the increasing frequency of floods, Dhubni's story is a powerful testament to the resilience of the human spirit. It demonstrates that when a community unites around a shared purpose and vision, no challenge is insurmountable. The people of Dhubni have not only reclaimed their lives but also secured their future, transforming adversity into opportunity and emerging as a shining example of triumph over hardship.

What would have happened today without the Dhubni Model?

The misery of the people in the community would have continued. The floods of 2023 and 2024 would have damaged their crops, especially the Transplant Aman rice, the principal source of carbohydrate. The fish would have escaped from their ponds, causing severe economic loss. Children would have faced hardship in attending the school; in severe circumstances, the school had to shut down for at least a month. More importantly, communication would have disrupted as the embankment which serves as the only major road commenting the communities.

Lessons learnt and potential for scalability

Dhubni's success extends beyond physical infrastructure, serving as a beacon of hope and a model for flood-prone communities; it is a story of empowerment and bonding collaboration. This was no ordinary rebuilding effort - it was a testament to the power of community collaboration and the unwavering spirit of the people of Dhubni community.

It showcases the transformative power of collective action, strategic partnerships, and proactive resilience-building, empowering communities, men and women, to reclaim their destinies. The lessons from Dhubni - centered on community engagement, proactive maintenance, and robust infrastructure - offer valuable insights for enhancing disaster response and recovery efforts across the region.

This story reminds us that when communities unite, even the most formidable challenges can be overcome. Dhubni's experience illustrates how collaboration and shared vision can lead to stronger, more resilient communities, better prepared to face future uncertainties. The ripple effects of these efforts contribute to building a sustainable and resilient future for many.

The technical achievements of Dhubni's embankment reconstruction further enhance its value as a case study. Its robust design and strategic placement highlight best practices for infrastructure projects aimed at improving flood resilience. Dhubni exemplifies the critical role of proactive maintenance, the impact of community-driven initiatives, and the strength of strategic partnerships. Together, these elements create a powerful blueprint for other communities striving to turn adversity into opportunity and build resilience against the challenges of a changing climate.

The success of the Dhubni initiative has the potential to serve as a model for other flood-prone communities in the region. By highlighting the key factors that contributed to the community's resilience, such as the pivotal role of the CRAG, the effective collaboration with local authorities and the FRP project, and the community's unwavering commitment to rebuilding, this story can inspire and guide similar efforts elsewhere.

Concern GP-02

ROSBI: Raising much-needed economic power of flood-affected communities

02

Community volunteer Mst. Mahmuda Begum, 40, is leading a Resilience Self-Help Group meeting in the yard of one of the participants. This group of women from Ramdakua, Sundarganj, meets on a scheduled afternoon to discuss and reflect on various livelihood challenges and develop strategies to address them. Photo: Saikat Mojumder/Concern Worldwide

The context

Increased own fund, not as a relief or a donation, is a big strength of building flood resilience for marginal communities in the remote and less-accessible charlands of Bangladesh. This is especially true for the household women who traditionally left out of economic activities. Women are merely housewives and homemakers. The scenarios, however, has changed. This is the story how women got empowered as economic-partner in their families towards developing flood resilience through ROSBI approach.

Before the ROSBI approach, the women of six unions of Hatibandha sub-districts of Lalmonirhat district, and five unions of Sundarganj sub-district of Gaibandha district of Bangladesh, the area under the Flood Resilience Project (FRP), faced a daunting array of challenges. Geographical isolation, traditional gender norms, and limited access to formal financial resources had conspired to trap them in a cycle of vulnerability, especially in the aftermath of devastating floods. Lacking the skills and steady incomes needed to save and build resilience, these women were often left to fend for themselves, relying on uncertain aid and dwindling resources to recover from each disaster.

The process and mechanism of ROSBI approach

The tides began to turn when Concern Worldwide through FRP and in partnering Gana Unnayan Kendra (GUK), in collaboration with local volunteers, conducted a thorough flood vulnerability assessment and formed the Community Resilience Action Group (CRAG) to organize community support. Through a process of targeted needs assessment and active community mobilization, the ROSBI model was introduced, empowering the women to take charge of their financial futures.

ROSBI stands for 'Rotating of Savings and Business Initiative'. At the heart of 27-membered ROSBI lies a self-managed savings and loan group, where each member contributes an initial BDT 1,000, followed by biweekly contributions of BDT 200. These funds are securely stored in a communal "steel box", enabling the capital to grow steadily over time. A unique lottery system is employed, granting one member a BDT 6,000 loan each month, which they can then use to invest in their businesses or address emergency needs.

The output

As the ROSBI initiative gained momentum, the results had been nothing short of remarkable. Taking an example of one group in Belka union of Sundarganj sub-district, the group's capital has now swelled to a staggering BDT 400,000, and each member has earned an impressive BDT 10,000 in profits over the past year. Across the FRP areas, 1,743 members of 105 Resilience Self-help Groups (RSHGs), had, as of the last year, generated BDT 34,82,7300.

The outcome

The true measure of success of adopting ROSBI approach lies in the transformation of the women themselves, who have blossomed from financially constrained homemakers to confident, self-reliant entrepreneurs. This initiative, on one hand, encouraged saving habits and, o the other hand, supported economic resilience by enabling community members to invest in flood preparedness measures, such as raising latrines, renovating house, purchasing livestock, spending on education and health.

"Women in our community have gained power in running household activities," attested a local expert. "The money they generate has significant contributions to family activities, and more importantly, they are making decisions on those activities. They are no longer housewives and homemakers; they are the partners of their husbands, going hand-in-hand in running their families. They have their own say, not just obeying their husbands."

These funds have had a significant impact, enabling the women to invest in vital assets such as land purchases, and land leasing. Additionally, the savings have supported the education of their children and helped with maintaining their homes. This initiative has not only strengthened their financial independence but has also enhanced their ability to cope with challenges, creating a ripple effect of empowerment and development throughout their community.

Towards sustainability

The transformative power of ROSBI lied not only in the financial safety net it provided, but also in the capacity-building efforts that empowered women. Through comprehensive training sessions, the participants had honed their skills in financial literacy and group management, equipping them to oversee the group's operations effectively. This knowledge had enabled them to enforce loan terms, distribute funds judiciously, and maintain transparent records – fostering a culture of accountability and trust within the community.

Resilience

The ROSBI approach has fostered a culture of early preparedness and collective resilience. Utilizing the CRAG's flood forecasting capabilities, the women are able to mobilize proactive actions, such as safe evacuation and livestock protection, before disaster strikes. Post-flood, the ROSBI fund serves as a vital safety net, enabling members to rapidly access funds for urgent repairs and essential purchases, kickstarting the recovery process.

Moreover, the ROSBI initiative has forged strategic partnerships with local NGOs, the Union Parishad, and government agencies, bringing in additional resources and reinforcing the community's resilience framework. This comprehensive support system has enhanced the women's adaptive capacity, empowering them to navigate the evolving impacts of climate change with increased confidence and self-reliance.

What would have happened today without the ROSBI approach?

Without adopting the approach, the women in the project area would have no means of saving for themselves, leaving them vulnerable to financial hardships. The women wouldn't have reclaimed their rightful place as equal partners in shaping the destiny of their community. They wouldn't have their own say, just had to remain obeying their husbands!

Lessons learnt and potential for scalability

Their ROSBI approach story is a testament to the power of collective action, the transformative potential of capacity-building, and the unbreakable spirit of those who refuse to be defined by the challenges they face. In the face of a changing climate, the apprach stands as a beacon of hope, inspiring communities worldwide to harness the power of resilience and forge a more secure, sustainable future.

The success story of ROSBI serving as a shining example of how community-driven solutions can transform the lives of those most vulnerable to the ravages of natural disasters such as flooding. As the FRP model continues to guide communities in unpacking their resilience, the ROSBI approach offers a replicable blueprint for empowering flood-affected women across Bangladesh and beyond.

FRP GP-03

CRAG: A powerhouse built for facilitating flood resilience

03

Moderated by the GUK Field Facilitator in Vati Kapasia, Sundarganj, Raja Mia (36), a 23-member Community Resilience Action Group (CRAG) convenes monthly to discuss and reflect on community issues, particularly the developmental needs essential for building resilience.
Photo: Saikat Mojumder/Concern Worldwide

The context

Kismat is a village in Belka union of Sundarganj sub-district under Gaibandha distract of Bangladesh. The village sits-in in a low-lying area, which is naturally flood-prone. Frequent flooding left residents with limited disaster preparedness and risk management awareness, hindering their ability to respond the hazard effectively. People lacked knowledge of efficient flood mitigation and emergency tactics. Economic recovery was further hindered by restricted access to credit and savings, making it difficult for households to rebound after devastating floods. They didn't know how to connect with government departments to avail offered facilities. The story was similar across the six unions of Hatibandha sub-districts of Lalmonirhat district, and five unions of Sundarganj sub-district of Gaibandha district of Bangladesh, the area under the Flood Resilience Project (FRP).

The process and mechanism of CRAG approach

To address these issues, Concern Worldwide, partnering with the Gana Unnayan Kendra (GUK), implemented a participatory approach, establishing Community Resilience Action Groups (CRAGs). Through community engagement, CRAG assessed vulnerabilities and organized collaborative efforts to improve disaster preparedness and risk management.

GUK's training equipped CRAG members with essential skills in disaster risk management, financial literacy, and climate-resilient agriculture. This capacity building provided the community with knowledge and resources to respond effectively to floods and maintain sustainable livelihoods.

Notably, CRAG actively involved women, enhancing their role in resilience efforts. This inclusive approach addressed the gender imbalance, where women had previously been marginalized from critical discussions and preparedness activities.

To further strengthen resilience, Flood Resilience Project (FRP) leveraged local networks, like the Union Disaster Management Committee (UDMC), to ensure timely flood information, enabling proactive preparedness measures.

When floods occurred, CRAG members coordinated evacuations, communicated with authorities, and facilitated access to essential resources. Post-flood, CRAG advocated for infrastructure repairs and recovery support through

government bodies, ensuring the community received the necessary assistance to rebuild.

This holistic strategy bolstered immediate response and fostered long-term resilience. By empowering local residents, strengthening networks, and enhancing access to resources and climate-adaptive practices, the CRAG approach laid a foundation for sustainable resilience.

The output

The success of CRAG initiative was evident in its rapid tangible outcomes. In Belka union, CRAG members actively engaged with the Union Parishad (local government) to discuss preparedness and response efforts. Md. Anju Miah, a CRAG member from Kismat, expressed gratitude for the opportunity to address the Union Parishad Chairman, stating, **"We feel honored to participate in a meeting with the Chairman. He is asking about our current preparedness and flood response management."**

This collaboration and recognition from authorities underscored the empowerment of CRAG members. Armed with training, they became vital responders, leading preparedness, response, and recovery efforts.

Within 72 hours of an impending flood in 2022, residents of Kismat were alerted through the UDMC and partners, enabling early preparedness actions. During the flood, CRAG members organized evacuations and coordinated with authorities to provide health services and distribute resilient seeds.

The outcome

CRAG's advocacy efforts with local government resulted in critical infrastructure repair, strengthening community connectivity and resilience. Courtyard meetings on savings, kitchen gardening, resilient crops, and livestock vaccination further bolstered long-term strategies.

The Belka Union Parishad Chairman commended CRAG's active role in flood management and their ability to engage with local government, expressing appreciation for their partnership in disaster response and recovery.

Additionally, the CRAG approach has expanded its focus to address critical health challenges in the region. Md. Raza Miah, President of Vati Kapasia CRAG, shared a success story:

"A few years back, we faced a tragic loss in our char when a lactating mother passed away due to anemia. Thankfully, her child survived. In response to this issue, we reached out to the Department of Health for assistance. As a result, for the first time ever, a medical camp was established in our char, providing much-needed health services to pregnant and lactating mothers. This initiative has been a significant step in addressing health concerns in our community."

Maintenance for sustainability

At present, 21 CRAGs are in operation in the FRP areas. A total of five CRAG members have been incorporated into the Belka union UDMC, while 25 members from Sundarganj sub-district and 28 members from Hatibandha sub-district have been integrated into their respective UDMCs this year. The CRAGs are regularly joining the joint-planning meetings in various government agencies. Through these, marginal people in char areas have been accessing basic public services.

Resilience

This holistic approach of CRAG, addressing both disaster resilience and community health, underscores the CRAG's commitment to improving the well-being and livelihoods of the flood-prone communities in Bangladesh. The successful integration of health services, in addition to the disaster preparedness and response efforts, demonstrates the program's comprehensive and impactful model for building sustainable resilience.

What would have happened today without the CRAG approach?

Without adopting the CRAG approach, people of charlands of Sundarganj and Hatibandha sub-districts wouldn't have realized their rights of accessing government services. They have still thought the floods are curse and would remain as victims of the cruse. Flood resilience would have been a dream to them.

Lessons learnt and potential for scalability

The marginal people of flood-affected areas of Sundarganj and Hatibandha sub-districts do not get afraid of interacting with local and sub-district level administration in claiming their rights. CRAGs not only limited in collaborating with UDMCs, but has become essential part of government agencies in decision-making for during and post-flood resilience services in local communities. The CRAG initiative in Kismat and across the FRP areas stands as a testament to the transformative power of community-driven action. By empowering residents, fostering collaborative networks, and enhancing access to resources and training, the program has built resilience in the face of recurring floods, serving as a model for other flood-prone communities in Bangladesh and beyond.

FRP GP-04

A transformed school for flood resilience

04

Through the Alliance programme, the school has been raised in order to protect it from flood waters. The building was raised three feet in 2021. The school now becomes a shelter during cyclones and flash floods. Locals bring their families and also livestock. This school serves 200 households. An early warning message starts the process of bringing animals, small children, elderly and pregnant women to the school.
Photo: Gavin Douglas/ Concern Worldwide

The context

In the face of devastating floods, the Uttar Dhubni Mondolpara Government Primary School in Hatibandha sub-district of Lalmonirhat district, Bangladesh, found itself grappling with a critical challenge - flood-prone school grounds that had become inaccessible and unsuitable for the 83 students. The situation got worse during October 19, 2021, when a devastating flood caused the Teesta River to rapidly overflow its banks, submerging the surrounding area, including the children's playground.

The aftermath

The sudden inundation forced the school to close for over a month, as the flooded grounds were rendered unusable and unsafe for the children. This disruption to the student's education and recreational activities underscored the urgent need for a sustainable solution.

The process of building the resilience

Recognizing the gravity of the situation, the Community Resilience Action Group (CRAG) of the Flood Resilient Project (FRP) stepped in, collaborating closely with the school committee to devise a comprehensive plan of action. Guided by the Flood Resilience Measurement for Communities (FRMC) framework, the team engaged with local stakeholders, including the Union Parishad, upazila administration, and upazila education office, to align efforts and secure the necessary support.

With the FRP's financial assistance, the CRAG team and the school committee embarked on an ambitious project to elevate the flood-prone playground. Drawing upon the abundant local resources, they sourced sand from the nearby Teesta River, a strategic and cost-effective decision that would prove instrumental in the intervention's success.

Over 11 months, between January to November 2023, the team meticulously executed the plan.

The output

Raised 22-decimal playground's plinth level by approximately two feet above the previous (2022) flood level. This strategic elevation, calculated to withstand future inundations, transformed the once-vulnerable space into a safe and functional area for the students to play, hold assemblies, and engage in outdoor activities without interruption. The school has also been acting as flood shelter.

The outcome

The impact of this transformative project has been profound. Since the completion of the playground elevation, the school has remained unaffected by subsequent flooding events, ensuring the uninterrupted continuity of education and the student's overall well-being. The elevated platform has not only safeguarded the physical infrastructure but has also restored a sense of security and normalcy for the children, allowing them to thrive in their academic and recreational pursuits.

Headmaster Md. Saiful Islam, a pivotal figure in this success story, expressed his gratitude for the collaborative effort that led to this remarkable achievement. **"We've ensured a safe, uninterrupted learning environment for our students,"** he said, reflecting on the project's lasting impact. The Union Parishad member, a community leader, further endorsed the initiative, commending the FRP's efforts and the resilience-building strategies employed.

Maintenance for sustainability

The Community School Management Committee (SMC) has planted trees around the playground with the purpose of cooling the surrounds to release heat-stress during hot summer. The SMC, together with CRAG members has been maintaining the school, especially because this infrastructure being treated as a flood shelter. The SMC has installed a loud-speaker communication device for warning surrounding people in the event of ensuing flooding and assembling likely affected people in the shelter.

Resilience

Through a remarkable collaborative effort, this once-vulnerable school has now emerged as a beacon of flood resilience, safeguarding the educational continuity and well-being of its young learners. For the community, it also serves as a flood shelter.

What would have happened today without the transforming the school as flood resilience?

Without the effort, children would have missed formal schooling at least couple of months during severe flooding. At normal flooding, children would have left sitting in the classrooms during recess not being able to use shallow-inundated yards. During severe flooding, people in the community would have missed a shelter place.

Lessons learnt and potential for scalability

This success story serves as a testament to the power of community collaboration, proactive planning, and strategic resource utilization. By elevating the school's playground, the project has not only protected the students from the disruptive effects of flooding but has also safeguarded their educational continuity and overall well-being. The lessons learnt from this initiative, such as the importance of engaging local stakeholders and leveraging locally available materials, can be replicated in other flood-prone communities, empowering them to build resilience and secure a brighter future for their children.

Its replicability is already evident. In the surrounding areas, playgrounds of nine such vulnerable schools have been raised creating happy-schooling environments for 3.500 children.

Through this transformative project, the Uttar Dhubni Mondolpara Government Primary School has emerged as a shining example of how strategic infrastructure interventions, backed by community-driven efforts, can effectively mitigate the challenges posed by natural disasters and ensure the uninterrupted progress of education in the face of adversity.

"The impact of this transformative project has been profound. Since the completion of the playground elevation, the school has remained unaffected by subsequent flooding events, ensuring the uninterrupted continuity of education and the student's overall well-being."

FRP GP-05

Overcoming waterlogging challenges through strategic infrastructure: The Gaddimari Model

05

Seven families, displaced from Badamer Char on the west side of the Teesta River, have relocated to a flood-resistant plot in Kajir Char. Earlier this year, the powerful river swallowed their land, forcing them to migrate eastward in search of safety. Photo: Saikat Mojumder/Concern Worldwide

The context

The village of Gaddimari, nestled in Haibandha sub-district under the Lalmonirhat district of Bangladesh, lies just 200 feet from the Sania Jan River, a tributary of the Teesta River. This proximity to major waterways makes the village highly susceptible to seasonal flooding, with the overflow from the Teesta regularly inundating the area. Gaddimari's geographical location, combined with inadequate drainage systems, led to chronic waterlogging, turning even minor rainfall into prolonged disruptions for the community.

The three wards of Gaddimari, home to approximately 4,500 residents, bore the brunt of this waterlogging. Agricultural fields, vital for the community's sustenance, were persistently waterlogged, and roads connecting the village to broader markets remained submerged for extended periods. The village's dependence on rain-fed agriculture and its location within a flood-prone zone created a cycle of vulnerability, where each flood compounded pre-existing challenges.

The effect

The villagers of Gaddimari faced devastating aftermath effects due to chronic waterlogging and frequent flooding from the Teesta River's overflow. The Transplant Aman rice, a staple crop for the region, suffered severely, drastically reducing agricultural productivity. This loss not only undermined food security but also forced many households to forego three meals a day, deepening the cycle of poverty and hardship.

The persistent waterlogging disrupted local communication networks, preventing residents from mobilizing for daily activities or accessing markets to sell their products. This isolation curtailed economic opportunities, leaving families unable to generate income or sustain their livelihoods. The 4,500 residents across the village's three wards faced immense challenges in maintaining normalcy, with education, health, and basic services being adversely affected. The lack of a sustainable solution perpetuated instability, underscoring the dire need for intervention to restore resilience and stability to the community.

The process of building the infrastructure

The initiative took a strategic approach to address the persistent waterlogging issues that severely affected the community's agriculture, livelihoods, and daily life. Determined to break the cycle of adversity, the Community Resilience Action Group (CRAG) of Gaddimari, under the Flood Resilient Project (FRP), spearheaded a collaborative effort to tackle the severe flooding and waterlogging issues in the area. Partnering with the local Union Parishad and Upazila administration, CRAG advocated for a sustainable drainage solution. The FRP provided significant financial support, while contributions from the local community and Union Parishad fostered a sense of shared ownership and commitment.

The output

These efforts culminated in the construction of a 93-foot-long, 10-foot-wide, and 5-foot-high concrete drain, popularly known as U-drain. The work completed in December 2023, which efficiently channeled excess water into the Sania Jan River. The drain has successfully alleviated waterlogging, safeguarding 250 households and over 100 hectares of agricultural land. By engaging the local community and securing partial contributions, the initiative fostered local ownership and strengthened the community's capacity to tackle future environmental challenges.

The outcomes

Water stagnation is a common issue in the area, causing significant hardship for communities by disrupting their agricultural activities and, in many cases, hindering local communication. The construction of the U-drain in Gaddimari has brought substantial benefits, enabling smoother local communication during the rainy season and, more importantly, protecting Transplant Aman rice crops from waterlogging. The construction has been executed with technical precision, and everyone involved for their dedicated efforts. This project serves as an excellent example for others facing similar challenges, offering valuable lessons for effective solutions.

The project stands as a model of effective community-driven action, demonstrating how collaboration, advocacy, and shared responsibility can lead to lasting solutions. By combining local knowledge, technical expertise, and resource mobilization, the initiative has not only resolved immediate challenges but also laid the groundwork for long-term economic and environmental stability, benefiting current and future generations in Gaddimari.

The construction of the drainage system has effectively alleviated prolonged waterlogging, safeguarding 4,500 people and over 100 hectares of agricultural land. By ensuring uninterrupted farming cycles and successful Transplant Aman rice harvests, the initiative has strengthened local livelihoods and significantly boosted agricultural productivity.

The project's benefits extend beyond agriculture, restoring normalcy to daily life. Over 100 students can now attend school without disruptions, and reclaimed lands have enabled livestock grazing to resume. These improvements have enhanced community resilience by addressing immediate challenges while fostering long-term economic and environmental stability.

Guided by the Flood Resilience Measurement for Communities (FRMC) framework, the initiative safeguarded the five capitals - natural, physical, financial, human, and social - thereby building a holistic and sustainable foundation for resilience. The collaborative efforts of the Community Resilience Action Group (CRAG), local stakeholders, and the Flood Resilient Project (FRP) established a sense of shared ownership, ensuring the community's capacity to withstand future environmental shocks. This integrated approach has not only resolved chronic flooding issues but also positioned the community for a stable and resilient future, benefiting generations to come.

Maintenance for Sustainability

The success of the Gaddimari project hinges not only on the construction of the drainage system but also on the community's commitment to its maintenance for long-term sustainability. By actively involving the local community in the project and securing their contributions, a strong sense of ownership was fostered. This shared responsibility has empowered the community to prioritize the upkeep of the 93-foot-long concrete drain, ensuring its continued effectiveness in channeling excess water into the Sania Jan River.

Community members, through the leadership of the Community Resilience Action Group (CRAG), are now better equipped to address potential environmental challenges. Their active participation in the project has instilled a proactive approach to maintenance, ensuring that the infrastructure remains operational and resilient. This model of shared responsibility and engagement serves as a foundation for sustainable development, ensuring that the benefits of the project extend well into the future.

Resilience

By addressing the root causes of waterlogging, the people of Gaddimari have reclaimed their livelihoods, ensured food security, and enhanced community resilience. The robust drainage infrastructure has safeguarded agricultural land, protected livelihoods, and restored normalcy to daily life, enabling students to attend school and livestock grazing to resume.

This initiative highlights the importance of active community participation, effective partnerships with local authorities, and proactive disaster management. Durable solutions like the construction of concrete drains prevent disruptions and secure the continuity of daily life, emphasizing the long-term value of sustainable development.

What would have happened today without the Gaddimari model?

Without the Gaddimari Model, prolonged waterlogging would likely still plague the area, severely disrupting the lives of 4,500 people and jeopardizing over 100 hectares of agricultural land. Farming cycles would remain interrupted, leading to failed Aman rice harvests, weakened livelihoods, and reduced agricultural productivity. Daily life would be marked by instability, with students unable to attend school due to flooding and livestock grazing rendered impossible on waterlogged lands.

The absence of this initiative would leave the community vulnerable to recurring environmental shocks, with no sustainable system in place. This lack of resilience would perpetuate economic and environmental instability, leaving the community ill-equipped to adapt to or recover from future challenges.

Lessons learnt and potential for scalability

The success of the Gaddimari project transcends its immediate benefits, showcasing the transformative power of community engagement, collaborative problem-solving, and strategic resource utilization. Through a comprehensive approach involving the formation of the Community Resilience Action Group (CRAG), stakeholder engagement, resource mobilization, and the construction of resilient infrastructure, the initiative has created a replicable model for addressing water-related challenges.

Gaddimari's exemplary model demonstrates how strategic planning, strong partnerships, and sustainable infrastructure can turn adversity into opportunity. This success story serves as an inspiration for other flood-prone communities in Bangladesh and beyond, offering a practical blueprint for community-driven solutions that build resilience and improve livelihoods.

The Gaddimari project stands as a shining example of how collective effort and strategic planning can create a resilient future and serve as a catalyst for transformative change in other vulnerable regions.

FRP GP-06

The RSHG: A platform for building flood resilience among every-day poor women

06

Joyful Begum (31) aspires to become a tailor and is currently learning to sew. After migrating to one of the raised houses in Kajir Char, Vati Kapasia, in August last year (2023), she now lives with her husband, son, and daughter. She intends to earn to afford the expenses of education for her children. Photo: Saikat Mojumder/Concern Worldwide

The context

The lives of hundreds of every-day poor women in the flood-affected areas under the Flood Resilience Project (FRP) had been embedded in poverty due to severe financial hardship. They didn't afford three meals a day. The meal items they could afford was a bowl of rice and a single piece green chili. They didn't know how to cope with seasonal floods. They didn't know mechanisms of early preparedness against the flood events. Being powerless, domestic violence was a part of their life. They used to think, that was their destiny and that was their life, granted by God.

The process of building the platform

The savings and funding mechanism: Recognizing the pressing need for financial inclusion and sustainable recovery, Gana Unnayan Kendra (GUK), the partner of the Flood Resilience Project (FRP), developed a plan to establish a network of Resilience Self-Help Groups (RSHGs). One RSHG comprised of 25 all-women members. They were to sit together once a month in one of the houses volunteered by a member. In the monthly meetings, each member to bring a set-amount of money and put it into a box. Towards the end, one member to receive the whole money in the box through a lottery.

Eventually, the revolving fund would cover each member in turn. Once the cycle completes, the fund receiving cycle will re-start.

Utilization of the received fund: Individuals were their own freedom to utilize their received fund. Preferably, they opted for small enterprises, such as goats and poultry. The extra money for initiating their preferred enterprises came from their household partners.

Capacity development support: The GUK provided training on the knowledge of savings and entrepreneurial skills. Training emphasized on flood-smart homestead vegetable production, such as 'sack gardening', flood-smart goat and poultry production, such as keeping them on raised platforms during flooding, and livestock health care such as using vaccination.

The outputs and outcomes

Each and every member of RSHG has established homestead vegetable garden; they are raising small animals and poultry. Data shows, 1,743 members of 105 RSHGs, has generated BDT 34,82,7300 last year. This initiative encouraged saving habits and supported economic resilience by enabling community members to invest in flood preparedness measures, such as raising latrines, renovating house, purchasing livestock, spending on education and health.

This extra supply of vegetables reduced vegetable price hike in local markets. The members not only consuming vegetables on their own, but also offering to their neighbors which creating social bonding.

The RSHG model, rooted in the principles of collective action and community ownership, proved to be a transformative force in the region. By providing members with essential financial management training and access to interest-free revolving funds, the initiative enabled them to reclaim control over their lives and livelihoods, shattering the shackles of debt and vulnerability.

The success of the RSHG model in the project areas has not gone unnoticed. Experts in the field of community resilience have praised the initiative, acknowledging its ability to tackle the financial challenges faced by flood-affected communities while promoting long-term development and self-sufficiency.

"The initiative as the RSHGs is taking may be small with respect to monetary capital, but the effect is noteworthy," remarked a local community leader. "With small capital, they are growing their resources, especially in the goat enterprise. They are keep going and sticking on; I do appreciate and thank FRP for facilitating; a good lesson for resource-poor individuals."

On social aspect, domestic violence has almost erased; husbands now count their wives, as the latter gained economic power. In fact, RSHG platform has empowered downtrodden women.

Towards sustainability

Across the region, community members banded together, harnessing their collective strength to rebuild homes, restore livelihoods, and invest in agriculture and small businesses – all without the burden of high-interest debt. There are 179 RSHG in the region with the total members of 4,372.

The revolving fund model, coupled with the emphasis on financial inclusion and women's empowerment, fostered a sense of ownership and self-reliance among the RSHG members. This, in turn, strengthened the community's ability to withstand future crises, ensuring that the hard-won gains of the post-flood recovery would be safeguarded for generations to come.

Resilience

The revolving fund model proved crucial for sustainable recovery, enabling resilience, self-reliance, and long-term development in flood-affected areas by promoting accessible, community-driven financial support. The transformative power of the RSHG model continued to unfold as GUK further empowered the group by supplying them with poultry and goats. This diversification of livelihood activities not only enhanced the community's food security but also bolstered their economic resilience, setting the stage for long-term development.

As the RSHG and its counterparts continue to thrive, this story serves as a powerful testament to the transformative potential of community-driven solutions. By empowering individuals, nurturing collective responsibility, and cultivating financial resilience, the RSHG initiative has paved the way for a more equitable and sustainable future, one that resonates with the resilience and determination of the Bangladeshi people.

The members now know the essentiality of an extra mud-oven during flooding; they know where to shelter animals and humans during severe flooding; they know and adopted flood-smart vegetable and animal production systems – all of those are example of resilience stem through RSHG platform.

What would have happened today without the RSHG platform?

Empowerment of the poor women unfolded in the villages such as in Vati Kapasia, where Ms Mukta Begum, the secretary of a CRAG, emerged as a beacon of hope. Prior to her involvement with the RSHG, Mukta's knowledge of savings and entrepreneurial skills were limited, leaving her family to rely solely on subsistence farming. However, the tide began to turn as Mukta and her fellow group members immersed themselves in the RSHG's activities. This would have been completely opposite to Mukta and women like her without the RSHG platform.

Lessons learnt and potential for scalability

The lessons learnt from the Sundarganj experience highlight the effectiveness of Self-Help Groups in fostering community ownership, financial inclusion, and women's empowerment.

As the FRG-GUK collaboration continues to inspire and empower communities across Sundarganj, the echoes of Mukta's transformation and the collective resilience of the SHG members will continue to reverberate, serving as a beacon of hope for those seeking to overcome the challenges of natural disasters and build a more resilient future.

FRP GP-07

Halting canal-bank erosion through nature-based solution: A community's path to flood resilience

07

For the community of Vati Kapasia, Sundarganj, life is a relentless struggle against the constant threat of losing homes and croplands to riverbank erosion, followed by the challenge of relocating to areas further from the river's edge. This char, a river basin area along the Teesta River in Sundarganj, stretches across Gaibandha to meet the mighty Brahmaputra. Photo: Saikat Mojumder/Concern Worldwide

The context

In the riverine communities of Vati Kapasia and Ujan Burail in Sundarganj sub-district of Gaibandha District of Bangladesh, the annual monsoonal floods posed an existential threat. Severe erosion from the rising waters of the Teesta River and torrential rainfall relentlessly consumed farmlands by eroding the surrounding canal, leaving residents in a constant state of fear and uncertainty.

The concern

About 1,260 families, a local market, three religious' institutions, one public school and over 400 acres of farm land had been in a constant threat of destruction from annual flooding.

The process of halting the canal erosion

Through a collaborative effort spearheaded by the Community Resilience Group (CRAG) and supported by Flood Resilience Project (FRP) through its partner Gana Unnan Kendra (GUK), the vulnerable communities found an elegant, nature-based solution to combat this daunting challenge.

CRAG influenced the Union Disaster Management Committee (UDMC) for the intervention. The UDMC shared the CRAG's concern with the local Upazila Agriculture Office (UAO). The UAO approved the technical settings. Afterwards, FRP provided financial support for the logistics and labor costs, while the Department of Agricultural Extension (DAE) and the Department of Forestry (DoF) offered valuable guidance on the planting methods.

The preliminary idea of adopting NbS in the project through selecting dhol kalmi and binnarthope plants in the planting system came from observation of local people. They observed few houses stood stand in flood in-surge, while the rest washed away in the vicinity. People detected that standing houses were deeply surrounded by dhol kalmi and binnarthope plants.

Thus, the selection of these plants was based on their proven effectiveness in combating soil erosion. Banana trees, with their shallow but strong spreading root systems, help to stabilize the surface soil, while the sprawling vines of dhol kalmi and the extensive root network of binnarthope work in tandem to protect the ground from the ravages of runoff and rainfall.

Over 15 days, the communities came together to plant a strategic mix of 3,000 banana trees, 7,000 dhol kalmi (pink morning glory) cuttings, and 10,000 binnarthope cuttings along the one kilometer stretch of the Vati Kapasia Canal. The planst were oriented in three rows of banana trees; between the rows of banana, dhol kalmi and binnarthope plants were accommodated. The first row of bananas defended the flood water current and mostly damaged and died in course of time.

The outputs and outcomes

Beneficiaries include 1,260 families, 1 bazar accommodating about 90 Shops, 2 mosques, 1 madrasah (religious institution) and 1 Government primary school, and 400 acres of arable land from destruction of flood water.

The success of this NbS intervention was evident in the following years. In 2023 and 2024, the communities witnessed minimal soil erosion along the canal and riverbank, safeguarding their homes, livelihoods, and other critical assets from the destructive forces of the floods. Raja Mia, the CRAG President of Vati Kapasia and a local tea stall owner, expressed his profound gratitude for the transformation, stating, **"We used to be terrified that the canal would overflow or completely dissolve whilst we were sleeping, especially during monsoon season. However, after planting trees to prevent soil erosion, we now sleep peacefully at night."**

The impact of this nature-based solution extended beyond the tangible benefits of flood and erosion control. By actively involving the community members in the decision-making and implementation processes, the initiative fostered a sense of ownership and empowerment among the residents. The collaboration between the CRAGs, the community, and local government agencies further strengthened social capital and community capacity, laying the foundations for sustainable resilience-building efforts.

As Md. Liton Mia, the Sub Assistant Agriculture Officer from the Department of Agricultural Extension, aptly noted,

> **"The Vati Kapasia and Ujan Burail communities showcase a commendable model of resilience through collaborative efforts and piloting nature-based solutions. Their strategic use of banana trees, dhol kalmi, and binnarthope plants not only combats river erosion but fosters environmental and social resilience."**

Resilience

This good practice is a flood resilience technology as it managed the flood and prevented ecological destruction.

What would have happened today without the nature-based solution?

Without the solution destruction of the farms land would have continued, on one hand, and the community would remained in constant threat of destruction from annual floods.

Lessons learnt and potential for scalability

This remarkable success story stands as a testament to the power of community-driven, nature-based solutions in addressing complex environmental challenges. By harnessing the inherent resilience of local ecosystems and leveraging the collective efforts of engaged stakeholders, the Vati Kapasia and Ujan Burail communities have not only safeguarded their livelihoods but also paved the way for a more sustainable and resilient future. Its scalability under similar situation is unquestionable.

FRP GP-08

Ensuring access to animal healthcare services: An asset development premium for flood resilience

08

Tazrul Islam (42) carefully vaccinates a cow against Foot and Mouth Disease (FMD) in Haripur. Having served this community since 2007, Tazrul later became involved in the flood resiliency programs run by Gana Unnayan Kendra (GUK). Photo: Saikat Mojumder/Concern Worldwide

The context

Livestock is a critical productive asset for the inhabitants of remote char lands like Char Kapasia of Sundarganj upazila of Gaibandha in northwest Bangladesh, especially for women who play a central role in caring for animals at the household level. Strong association of women in livestock rearing not only supports marginal families by sharing labor but also enhances household incomes and food security. However, these rural communities face severe challenges due to the devastating impacts of climate change on their livestock-based livelihoods.

Frequent flooding, unpredictable weather, and limited access to veterinary services result in high mortality rates, particularly among calves, exacerbating the vulnerabilities of livestock farmers. During the monsoon season, recurrent floods severely affect animals, increasing susceptibility to diseases and leading to higher mortality rates among cattle and goats. Public and private veterinary services remain out of reach for most, leaving farmers unable to protect their animals effectively.

The effect

Loss of livestock can have a detrimental effect on resource poor farmers of Char Kapasia. This lack of financial resilience plunges farmers into severe hardships, making it increasingly difficult to meet daily family expenses. Without livestock, which serves as both a source of income and a safety net, families face a downward spiral of economic insecurity.

Addressing these challenges requires accessible veterinary services, disaster-resilient livestock management practices, and targeted support to mitigate risks. Strengthening animal healthcare systems is crucial for protecting livelihoods and building resilience in these vulnerable communities.

The process and mechanism of introducing animal healthcare services

A transformative initiative led by the Flood Resilient Project (FRP) has empowered vulnerable communities in char lands to enhance resilience through improved animal healthcare and sustainable market linkages. The FRP's success lies in its innovative, community-centric approach. Instead of relying on top-down solutions, the project actively engaged with char land residents, forming Community Resilience Action Groups (CRAGs) to address their unique challenges. These groups served as a platform for dialogue and collaboration, enabling residents to co-create tailored interventions that address their specific needs.

Central to the initiative was the decision to involve local youth as change agents, fostering a sense of ownership and sustainability. The CRAGs played a pivotal role by establishing communication with the Upazila Livestock Office and raising concerns through the Union Disaster Management Committee (UDMC). Their proactive efforts mobilized the Upazila Livestock Officer, who responded by providing critical animal healthcare services, including deworming and vaccination.

However, the financial barriers faced by farmers, particularly for Peste des Petits Ruminants (PPR) vaccinations for goats, posed a significant challenge. To address this, the FRP offered financial support, enabling the farmers to organize collective vaccination drives. CRAG members coordinated with cattle-rearing households to gather their animals at designated locations on specific dates. This arrangement allowed for efficient deworming and vaccination, ensuring broad coverage and better health outcomes for livestock.

Through the FRP, young men and women from the char land communities were trained as Local Service Providers (LSPs), equipping them with the skills and knowledge to deliver essential veterinary services to their fellow farmers.

LSPs are individuals who offer fee-based services within a specific local area. LSPs include various local actors across the input and output markets, such as animal health service providers, AI (Artificial Insemination) service providers, vaccinators, input retailers, collectors, and aggregators.

The outputs

By addressing both immediate and systemic challenges, this initiative has significantly enhanced the capacity of farmers to protect their livestock. It not only improved animal health but also created a sustainable framework for ongoing care, supported by strengthened linkages between communities and government services. The FRP's collaborative model demonstrates how grassroots engagement, strategic partnerships, and targeted financial support can transform vulnerable communities, building resilience and ensuring sustainable livelihoods for the future.

These LSPs, earning between BDT 10,000-12,000 (approximately USD 100-120) per month, became the linchpins of the livestock healthcare system, providing regular vaccinations, disease surveillance, and ongoing training in best practices.

"Empowering youth and strengthening market access revolutionized our livestock practices," enthused Fatema Begum, the secretary of the Vati Kapasia CRAG. **"We've seen healthier cattle and increased income, giving our community hope and stability despite the harsh climate realities we face."**

The impact of this community-driven approach was profound. By engaging 500 livestock farming families, representing over 3,500 cattle, goats, and sheep, the FRP's vaccination program dramatically reduced animal mortality rates, especially among calves. This not only safeguarded the communities' primary source of income but also fostered a renewed sense of optimism and resilience in the face of environmental challenges.

The outcomes

The FRP's intervention went beyond just animal healthcare, addressing the broader ecosystem required for sustainable livestock development. The project facilitated connections between the char land farmers and the Upazila-level (sub-district) Department of Livestock Services (DLS), enabling them to access government resources and technical expertise. Senior DLS specialists were actively involved in the farmer capacity-building programs, ensuring that communities adopted the most effective, climate-adaptive animal husbandry practices.

But the FRP's holistic approach didn't stop there. Recognizing the importance of market linkages, the project also worked to connect the char land farmers with input suppliers and output markets, helping them secure competitive prices for their livestock products. This, in turn, boosted the communities' economic resilience, diversifying their income sources and strengthening their ability to withstand future shocks.

Towards sustainability

The success story of Char Kapasia, under Sundarganj Upazila, of Gaibandha District, exemplifies the transformative impact of the FRP's integrated approach. In this isolated char land area, separated from the mainland by the Teesta River, the project's interventions have truly revolutionized livestock-rearing practices.

"The FRP project has improved our livelihoods by raising awareness about animal health and vaccinating our cattle," Fatema Begum explained. **"It has also created vital linkages among Local Service Providers (LSPs), livestock farmers, and the Upazila Livestock Office."** The community, under CRAG) and supported by FRP, has been routinely arranging vaccination camp twice a year.

Resilience

The project's holistic, community-driven model has not only improved animal health and productivity but has also empowered local youth, strengthened market access, and fostered deeper connections with government services. This multifaceted approach has been instrumental in building a resilient, self-sustaining livestock ecosystem, one that can withstand the mounting challenges posed by climate change. As the mortality of animals reduced, households have been selling 'saved' animals and using the 'extra' money for flood resilience activities such as elevating their homes so that they don't need to go to shelter places, and also can keep their animals in elevated sheds during flood.

What would have happened today without the animal healthcare services?

Without the introduction of animal healthcare services through the Flood Resilient Project (FRP), the 500 livestock-rearing households of the remote char lands of northwest Bangladesh would still grapple with the devastating impacts of climate change on livestock. Alarmingly high mortality rates, especially among calves, would persist due to frequent flooding, and the lack of veterinary care. Farmers would continue to lose their primary income sources, plunging communities into deeper poverty and exacerbating food insecurity.

The absence of trained Local Service Providers (LSPs) and community-driven vaccination programs would leave livestock vulnerable to disease outbreaks, leading to diminished productivity and further economic hardship. Without improved market linkages, farmers would struggle to secure fair prices for their livestock products, undermining any potential for economic resilience. In this scenario, communities would remain trapped in a cycle of vulnerability, without the tools, resources, or knowledge to adapt to climate challenges, leaving livelihoods and prospects.

Lessons learnt and potential for scalability

The Flood Resilient Project (FRP) offers valuable lessons and immense potential for scalability. A key takeaway is the importance of a community-centric, integrated approach. By engaging local residents through Community Resilience Action Groups (CRAGs) and training Local Service Providers (LSPs), the FRP empowered communities to take ownership of solutions. This fostered sustainability and ensured interventions addressed specific local challenges, such as providing veterinary services and establishing market linkages.

The success of the vaccination program and the collaboration with the Upazila Livestock Office highlight the value of leveraging government resources while building local capacity. These partnerships ensured access to technical expertise and climate-adaptive practices, further enhancing resilience. Additionally, connecting farmers to markets boosted economic opportunities, demonstrating the importance of addressing both production and market access.

The FRP's model is highly scalable due to its adaptable framework. Its focus on empowering local youth as change agents, fostering government collaboration, and integrating economic development makes it replicable in other vulnerable regions. By applying these strategies, similar projects can improve livestock-based livelihoods and build resilience in climate-affected areas, providing a blueprint for sustainable development that addresses interconnected challenges. This holistic approach ensures long-term impact and adaptability to varying contexts.

FRP GP-09

Functioning UDMCs towards community flood resilience

09

Nur Moslema (33), a GUK community volunteer in Belka, Nobabganj, is guiding a group of women on how to purify and manage safe drinking water. She reaches out to the households immediately after an announcement of an impending flood. Volunteers like her, employed by Gana Unyan Kendra, serve as tireless advocates, educating flood-affected communities on preparedness and minimizing losses from the increasingly frequent floods in Sundarganj, Gaibandha. Photo: Saikat Mojumder/Concern Worldwide

The context

In disaster risk management, the effective participation of all stakeholders is very important. Recognizing the fact, the Government of Bangladesh (GoB) formed the Standing Orders on Disaster (SOD) in 2019. The objective was to inform all concerned about their roles and responsibilities at every stage of disaster risk management. As per the SOD, each ministry, division, department and agency will prepare its own detailed work plan to perform its responsibilities and functions efficiently; and will take necessary measures to implement it as per their own duty and capacity. To respond to a disaster, the National Disaster Management Council (NDMC) and the Inter-Ministerial Disaster Management Coordination Committee (IMDMCC) will coordinate disaster-related activities at the national level. Coordination at division, district, city corporation, upazila, pourashava, union and ward levels will be done by the respective Disaster Management Committees (DMC). Accordingly, Union Disaster Management Committees (UDMCs) were formed across the Flood Resilience Project (FRP) areas like other parts of the country.

While the establishment of the UDMCs took place rapidly, their development had been slow. The FRP, through its partner Gana Unnan Kendra (GUK), stepped in boosting functioning of UDMCs in the project area.

The process of establishing relationship between FRP and UDMCs

The UDMCs were largely non-functional due to a range of reasons, including a lack of funding, a lack of understanding of their roles and responsibilities and a lack of capacity or knowledge to role such a range of comprehensive tasks across a union. The FRP, through its Community Resilience Action Groups (CRAGs), played a pivotal role in overcoming limitations of the functioning of the UDMCs. The FRP directly involved in 10 UDMCs in the project area. In addition to advocacy, the FRP has been sponsoring the alternate monthly meetings of UDMCs.

The outputs and outcomes

By providing capacity building support including clarity on their roles and responsibility, eight UDMCs, working with FRP, are now functional; they are conducting regular meetings, completed Community Risk Assessment (CRA), and, more importantly, have completed and are implementing the Risk Reduction Action Plan (RRAP).

The UDMCs didn't have separate emergency fund initially, which hindered implementing their activities during emergency period. Those eight UDMCs successfully mobilized local resources as contingency fund, a total of BDT 128,322 (BDT 94,822 in Sundarganj sub-district and BDT 33,500 in Hatibandha sub-district). Utilization of those funds included dissemination of early warning message through mobile loudspeaker, rescuing activities conducted during flood, and minor repairs and renovation of embankments and roads. For example, Singgimari UDMC (under Hatibandha sub-district) provided support to renovate 130-foot road-cum-embankment. For this contribution, 2500 people in the three wards remained flood-free and Transplant Aman rice in 500 acres of land saved from damage.

The FRP and its implementing partner, GUK, successfully influenced local government (Union Parishad (UP)) to shift their focus from flood response and recovery to pre-event risk reduction activities. As a result, nine out of the ten FRP-involved UPs allocated BDT 14,407,425, BDT 29,427,425 and BDT 35,232,425 in the financial year 2022-2023, 2023-2024 and 2024-2025, respectively, in their annual development budgets aiming community disaster preparedness activities. Prior to this programme- influencing-initiatives, the UP budgets did not reflect any level of financing for preparedness activities. In addition, programme facilitated open budget sessions in working areas, which allowed communities to engage in the budgeting processes and put forward their disaster preparedness needs. Those budgets were used for road renovation, construction of wooden/bamboo bridge, supporting latrines repair, tube wells installation, and plantation.

A total of five CRAG members have been incorporated into the Belka UDMC, while 25 members from Sundarganj sub-district and 28 members from Hatibandha sub-district have been integrated into their respective UDMCs this year.

Towards sustainability

The functioning of the UDMCs is the testimony of their sustainability. For example, at the forefront of one of these initiatives was Momena Begum, the UDMC's resolute vice chairperson in Belka union. **"When floods approached, our community was prepared,"** she recounted. **"The training we received from GUK on disaster preparedness and emergency response meant we knew what steps to take."**

Under Momena's leadership, CRAGs engaged in assessing community vulnerabilities and designing practical solutions. Participatory training sessions equipped CRAG members with vital skills in financial literacy, climate-smart agriculture, and early warning systems.

"The CRAG members became our eyes and ears," explained Belka Union Parishad Chairman Md. Ibrahim Khalilullah. "They adeptly communicated critical information to households, coordinated evacuations, and ensured that everyone received emergency supplies."

Indeed, as floodwaters rose in 2022, CRAG volunteers mobilized promptly. They knocked on doors, alerting families to the impending danger and guiding them to safety. Collaborating with the UDMC, they distributed food, clean water, and medical supplies to those in need, while also helping authorities identify the most vulnerable individuals requiring immediate assistance.

For enthusiastic Momena and her fellow UDMC members, this is merely the beginning. They are already laying the groundwork for ambitious future initiatives, from enhancing early warning systems to advocating for essential infrastructure upgrades. Their vision is a community that not only withstands floods but flourishes amid an increasingly unpredictable climate.

"This is our home, and we are not going anywhere," Momena declared with unwavering determination. **"We will continue to fight, adapt, and build a future that benefits us all. When this community unites, there is nothing we cannot achieve."**

Resilience

Under the UDMC's guidance, CRAG members learned innovative techniques for cultivating flood-resistant crops and managing livestock more effectively. They also gained access to savings groups and microcredit programs, equipping families with financial tools to recover and adapt after disasters.

Integral to this process was the UDMC's commitment to ensuring women played a central role in resilience-building initiatives. **"Women are the backbone of our community,"** An UDMC member asserted. **"Their voices and contributions are essential in developing effective solutions for everyone." "We didn't just want to help people survive the floods - we sought to empower them to thrive despite their challenges,"** said the other member. **"Consequently, we focused on strengthening livelihoods, enhancing access to financial services, and promoting climate-smart agricultural practices."**

As floodwaters receded, the impact of the UDMC's efforts became increasingly apparent. Families that had previously struggled to recover from floods were now bouncing back more quickly. Household incomes stabilized, food security improved, and residents experienced a renewed sense of empowerment and agency in the face of uncertainty.

"The UDMC has transformed our community," reflected Chairman Khalilullah. **"In the past, we felt powerless against the floods. Now, we know that by working together, we can overcome any challenge."**

What would have happened today without the functioning UDMCs?

Without the functioning UDMCs, the life of thousands of inhabitants under FRP, would have remained unchanged – fear of uncertainty against the constant fear of another flood – a dim light and a dim future.

Lessons learnt and potential for scalability

The properly functioning UDMC's impact extended beyond immediate emergency responses. Through their partnership with FRP and GUK, they implemented long-term measures designed to bolster the community's overall resilience.

The success of the UDMCs in FRP zone has attracted attention beyond its borders. Representatives from neighboring unions had visited to study their model, eager to replicate the approach of localized disaster management and community-driven resilience building.

In the FRP areas, the efforts of the UDMC stand as a testament to the power of community resilience, showing that through collaboration and empowerment, they can elevate their defenses against nature's fury and forge a brighter future together. This will be an example for non-functioning UDMCs.

FRP GP-10

Building community connectivity for flood resilience: Transforming lives in char lands

10

Since the construction of the road in Dhubni, Hatibandha, school children are now able to attend classes regularly. On one side of the road, there are two primary schools with approximately 400 students who rely on it for their daily commute. Photo: Saikat Mojumder/Concern Worldwide

The context

The communities in Char Kapasia of Vati Kapasia Union under Sundarganj sub-district of Gaibandha district, by nature, face significant challenges due to frequent flooding. Over the years, the repeated floods submerged a section of the major low-lying earthen road, severing connections between communities and causing severe disruptions to daily communication. Inhabitants were unable to travel, preventing them from accessing markets to sell their produces and/or purchase essential goods, which critically impacted their livelihoods. Children could not attend school, interrupting their education and jeopardizing the future of the community.

The consequences

The absence of reliable road infrastructure during flood events left the community isolated and vulnerable, unable to carry out normal activities. This isolation not only intensified economic difficulties but also deepened social hardships, underscoring the urgent need for resilient infrastructure to ensure connectivity and stability during flooding.

The recurring floods created persistent challenges, severing access to essential services and opportunities. Floodwaters regularly disrupt transportation, leaving residents unable to reach markets, schools, or healthcare facilities. Farming households, unable to transport their produce, were forced to sell at lower prices directly from the farm. Middlemen exploit this situation, taking the goods to markets and depriving farmers of fair compensation. The road network's disconnection during the rainy season, often lasting two to three months, leaves van and rickshaw pullers without income, further compounding economic hardships.

Children are forced to halt their education, and families struggle to maintain their livelihoods amidst the isolation caused by the floods. This lack of reliable infrastructure not only disrupts daily life but also perpetuates cycles of economic vulnerability and social instability, highlighting the urgent need for sustainable solutions to address these recurring challenges.

The process of building the earthen road

The implementation of the road construction project in Char Kapasia Union followed a strategic and inclusive process to address recurring flood-related disruptions. A collaborative effort with the Community Resilience Action Group (CRAG) and the local Union Parishad ensured seamless execution. Joint planning led to the rehabilitation of an earthen road, a critical infrastructure for maintaining community connectivity.

A strategic decision was made to elevate the road 3 to 4 feet above flood levels, guaranteeing year-round accessibility and mitigating the impact of seasonal floods.

The success of this project can be largely attributed to the collaborative efforts of the Flood Resilient Project (FRP), the Community Resilience Action Group (CRAG), and the local Union Parishad. This synergetic approach ensured the smooth implementation of the road construction and fostered a sense of community ownership.

The output

A remarkable transformation was set in motion in June 2023 by constructing a climate-resilient road. This infrastructure project, spanning over 2,241 feet and 12 feet in width, has empowered more than 2,100 households across multiple villages, including Fakirer Gram, Kaderer Char, Ujan Bural, Moddhapara, Purbapara, Uttorpara, Keranir Char, Bazar Char, Ucha Char, Badamer Char, Kajiar Char, Purba Badamer Char, Adarsha Bazar, and Abason Prokalpa.

The outcomes

The simple yet ingenious design of the climate-resilient road has profoundly transformed the lives of the Char Kapasia Union community in Gaibandha. By ensuring the road remains passable even during severe floods, this solution has effectively addressed the community's greatest challenge, restored connectivity and fostered resilience.

Farmers now have direct access to markets, enabling them to transport and sell agricultural commodities like milk, eggs, and produce without middlemen exploiting the situation. This newfound autonomy has significantly boosted their incomes and economic opportunities. The van and rickshaw pullers also benefit from uninterrupted income, even during the rainy season, as reliable transportation ensures consistent work.

Year-round accessibility to education has ensured that schools remain open, allowing children to continue their studies without interruptions caused by flooding. Additionally, the road has improved access to primary healthcare, enabling patients and elderly residents to reach medical facilities with ease.

The project's community-centric approach prioritized resolving disruptions to daily life, market access, and education. By addressing these critical needs, the road has not only restored connectivity but also bolstered the community's overall resilience. Its strategic design ensures continuous movement, improving stability and quality of life for all residents.

The transformation has also empowered women, providing them with opportunities to engage in economic activities. This success story illustrates the far-reaching impact of climate-resilient infrastructure, symbolizing hope, stability, and progress. The road serves as a model for sustainable development, demonstrating how targeted interventions can overcome environmental challenges and create lasting change for vulnerable communities.

Maintenance for sustainability

The CRAG members have been playing a crucial role in ensuring the long-term sustainability of the road. By planting vetiver, pink morning glory, banana, and mango trees along the roadside, they have taken proactive measures to preserve and stabilize the infrastructure. This community-driven approach demonstrates the residents' commitment to maintaining this vital lifeline and safeguarding their newfound connectivity.

Resilience

By elevating the road above the flood danger level, the project has not only enhanced physical connectivity but has also strengthened the community's ability to withstand and adapt to the devastating effects of flooding. This innovative approach has laid the foundation for a more prosperous and secure future for the residents of Char Kapasia Union and surrounding areas, where flood canot not hinder their every-day life.

What would have happened today without the new road?

Without the construction of the climate-resilient road, the communities in Char Kapasia Union would have continued to face severe isolation and disruptions during the flood season. Residents would have struggled to access markets, undermining their livelihoods and economic opportunities. Children's education would have been severely impacted, as they would have been unable to attend school regularly. The lack of reliable transportation would have further exacerbated the hardships faced by the community, particularly in accessing essential services such as healthcare. The profound transformation enabled by the elevated road would not have been possible, and the vulnerable communities would have remained trapped in a cycle of isolation and diminished resilience.

Lessons learnt and potential for scalability

The Char Kapasia road project stands as a beacon of resilience-building, offering valuable insights for future initiatives. Its success hinged on the collaborative efforts of the Flood Resilient Project (FRP), Community Resilience Action Group (CRAG), and Union Parishad, ensuring effective implementation and fostering strong community ownership. The strategic decision to elevate the road above flood levels proved transformative, underscoring the critical role of targeted engineering solutions in addressing climate-related vulnerabilities.

The community's proactive role in maintaining the road, exemplified by CRAG's tree-planting initiatives, highlights the importance of collective responsibility and local stewardship. This sense of ownership not only ensures the road's sustainability but also empowers communities to safeguard essential infrastructure for the long term.

The project's replicability is profound, serving as a model for constructing climate-resilient infrastructure across other flood-prone Charland (riverine) regions of Bangladesh. By adopting the project's successful strategies—collaborative stakeholder engagement, strategic elevation design, and community-based maintenance—similar regions can achieve comparable transformations.

The Char Kapasia road project demonstrates how targeted, inclusive interventions can mitigate connectivity challenges, enhance community resilience, and pave the way for sustainable development in vulnerable areas, setting a precedent for scalable and impactful infrastructure solutions.

FRP GP-11

Elevated homestead plinths: Safeguarding households from flooding

11

Nuruzzaman (52) and his wife Housenare (45), have benefited from the Alliance programme. They have three daughters and two sons. Yasmin (15), Rarasel (6), Yasin, Rashida (23). They live in the Rangpur district in northern Bangladesh. They are from Goddimari, Lalmonirhat District, Rangpur. Being beside the Test river means this community are on the front lines of flooding in this area. Photo: Gavin Douglas/ Concern Worldwide

The context

The Sundarganj sub-district in Gaibandha district, part of Bangladesh's flood-prone delta, faces recurring challenges from frequent inundation. Vulnerable households in Char Kasaia suffer significant impacts, including extensive damage of homes, loss of assets, and disruption of livelihoods. The low-lying homestead locations heighten their exposure, leaving families to grapple with food and clean water shortages and increasing health risks from waterborne diseases. Flooding forces many to repeatedly rebuild or relocate, straining already limited resources and perpetuating economic instability. The lack of stable shelter exacerbates insecurity, creating a cycle of vulnerability that is difficult to break. These challenges underline the need for sustainable interventions to mitigate flood risks, strengthen community resilience, and ensure access to essential resources, safeguarding the well-being of families in this flood-affected region.

The misery

Floods have devastating effects on poor households, intensifying their vulnerability and trapping them in cycles of poverty. Disasters often destroy homes, leaving families exposed to harsh conditions and dependent on temporary shelter. Vital assets such as livestock, crops, and food reserves are frequently lost, eliminating key sources of income and sustenance. This disruption of livelihoods forces families into financial insecurity and debt, making recovery an uphill battle.

Access to clean water and sanitation becomes severely limited, heightening the risk of waterborne diseases. Education is disrupted as children are unable to attend school, further jeopardizing the future of affected families. Psychological stress and uncertainty about recovery compound these challenges, while limited resources for rebuilding leave many struggling to regain stability. The long-term economic and social repercussions of floods perpetuate hardship, making it increasingly difficult for households to break free from disaster-induced poverty.

The process of building the structures

The initiative to elevate homestead plinths in Vati Kapasia Union addressed the persistent challenges caused by recurring floods. Spearheaded by the Flood Resilient Project (FRP) in collaboration with the Community Resilience Action Group (CRAG) and local governance bodies, the project adopted a holistic approach. Key measures included raising homesteads, planting trees as natural flood barriers, and fostering community involvement to ensure sustainability. This initiative provided immediate protection and significantly enhanced long-term resilience, transforming the lives of affected families.

To identify the most vulnerable households, the FRP, CRAG, and Union Parishad conducted door-to-door assessments, listing 50 households in low-lying areas at high risk of inundation.

The primary intervention involved elevating homesteads by raising plinths 3–4 feet above floodwater levels. This provided a secure foundation, protecting families' homes from recurring floods. Budget estimates were prepared for each household, and in the first phase, 15 families received support to safeguard their homes and resume livelihoods without fear of flood damage.

To further enhance resilience, CRAG implemented an environmental initiative by planting trees, including mango, neem, blackberry, betel nut, and coconut, around the raised homesteads. These trees served as natural flood barriers while offering economic benefits from fruit and nut harvests.

These comprehensive measures have significantly improved the security, stability, and sustainability of the supported families. Plans are underway to assist the remaining 35 households, reinforcing the project's commitment to building a resilient and self-reliant community in flood-prone areas.

The output

In the first phase, 15 families received support to safeguard their homes and resume livelihoods without fear of flood damage.

The outcomes

The Char Kapasia Plinth Elevation Model has profoundly improved the lives of vulnerable families, offering security against floods and fostering economic stability and future opportunities. By raising homesteads above flood levels, the project safeguarded homes, enabling families to remain safe during floods and continue their daily activities without disruption. Livelihoods, such as livestock farming, were protected, ensuring economic stability, while minimized school closures allowed children to continue their education, contributing to long-term community development.

Environmental enhancements were achieved through tree plantations around elevated homesteads, serving as natural flood barriers, reducing soil erosion, and providing economic opportunities through fruit and nut harvests.

Elevated homes reduced exposure to waterborne diseases, promoting better hygiene and improved health conditions. Enhanced sanitation and reduced health risks further improved living conditions, while uninterrupted education ensured continued progress for children and the broader community.

Active collaboration with local groups fostered community ownership and strengthened networks, ensuring the sustainability of these efforts. By working with local stakeholders, the project created a replicable model of resilience. With plans to assist additional families, this initiative paves the way for sustainable solutions to challenges faced by flood-prone communities.

Towards sustainability

Maintenance is vital for the sustainability of the Char Kapasia Plinth Elevation Model, ensuring its long-term effectiveness. Residents have been playing a key role in preserving elevated homesteads by conducting regular inspections and reinforcing plinths, particularly after heavy rains or floods, to prevent erosion and structural damage. Planting and caring for trees around homesteads strengthen resilience by creating natural barriers against floodwaters and reducing soil erosion. Proper drainage maintenance further prevents waterlogging, reducing risks to plinth stability.

Community involvement is central to this effort, supported by periodic awareness sessions on maintenance good practices and environmental conservation. Collaboration with local governance bodies ensures access to technical support and resources as needed. Sustainable practices such as composting and agroforestry enhance soil health and bolster resilience. By combining regular upkeep with active community participation, the Char Kapasia Plinth Elevation Model can continue to protect livelihoods and promote long-term resilience against flooding.

Resilience

Where floods are a way of life, households must adapt to coexist with the risk. Elevating homestead plinths is a critical, pragmatic solution that offers stability and safety. This intervention allows families to remain in their homes during floods, avoiding the disruption of seeking temporary shelter. Elevated plinths also provide secure spaces for livestock, safeguarding vital economic assets.

The Char Kapasia Plinth Elevation Model exemplifies resilience—the community's capacity to withstand and recover from floods. By raising homesteads above flood levels, families are protected from displacement and asset loss, enabling continuity in agricultural and livestock activities. Tree plantations around elevated plinths create natural barriers, mitigating soil erosion and enhancing environmental sustainability while offering economic benefits through harvestable resources.

Resilience extends to improved health outcomes, as elevated homes reduce exposure to waterborne diseases and improve hygiene. Children benefit from uninterrupted schooling, fostering long-term development. Community participation in maintenance and planning strengthens social cohesion, instilling a shared sense of responsibility.

This holistic approach integrates physical protection, economic stability, and social empowerment, enabling families to thrive despite recurring floods. The model's success underscores the importance of sustainable interventions in building resilience and ensuring a secure future for flood-prone communities.

What would have happened today without the homestead plinth elevation initiative?

Without the Char Kapasia Plinth Elevation Model, vulnerable families in Vati Kapasia Union would have continued to suffer the devastating impacts of recurring floods. These events would result in repeated destruction of homes, forcing families to rebuild or relocate after each flood. This relentless cycle would perpetuate economic instability, as resources would be consumed by immediate repairs rather than invested in long-term development.

Livelihoods, heavily reliant on agriculture and livestock, would remain at constant risk. Floods would inundate farmland and result in livestock losses, significantly undermining income and food security. Children's education would be frequently disrupted by school closures, as families would prioritize survival over learning, thereby hindering community development.

Health conditions would deteriorate, with families exposed to waterborne diseases due to contaminated floodwaters and inadequate sanitation. The psychological toll of repeated losses and displacement would exacerbate the community's vulnerability. Environmental degradation, including worsening soil erosion, would continue unchecked without the tree barriers introduced by the model.

In the absence of the Char Kapasia Plinth Elevation Model, the community would remain trapped in a cycle of disaster vulnerability, economic insecurity, and social stagnation. This model has been pivotal in breaking that cycle by providing stability, safeguarding livelihoods, improving health, and fostering resilience, thereby transforming the future for these flood-prone families.

Lessons learnt and potential for scalability

The Char Kapasia Plinth Elevation Model has provided valuable insights into enhancing resilience in flood-prone communities while ensuring uninterrupted economic activities and improved financial stability. Engaging local groups like the Community Resilience Action Group (CRAG) and Union Parishad ensures that interventions align with actual community needs, fostering local ownership and long-term sustainability. Combining structural measures, such as plinth elevation, with environmental efforts like tree planting creates lasting resilience against floods. A phased approach enables continuous learning, resource optimization, and adaptation, enhancing the project's overall effectiveness and reach.

The pilot phase supported 15 vulnerable households, laying a foundation for scalability. Expansion plans include assisting 35 more households in Vati Kapasia Union. The model's success has sparked interest in other flood-prone regions, showcasing its potential for replication and broader application. This approach offers a sustainable and adaptable framework for addressing flood challenges and improving community resilience across similar contexts.

FRP GP-12

The early warning system: An effective strategy for flood resilience

12

In Nobabganj, Sundarganj, the Union Parishad has issued a forecast regarding the rising water levels in the Teesta River, following several days of heavy rainfall. Mohammad Dukhu Mia (38) was the first to take action, spreading the news throughout the community and raising awareness among residents and to prepare to face the possible disaster. Photo: Saikat Mojumder/Concern Worldwide

The context

Flooding is a recurring and devastating issue in the Hatibandha sub-district of Lalmonirhat district in Bangladesh. Communities in this region are frequently caught off-guard by the arrival of floodwaters, as the lack of reliable early warning systems meant that residents often had little to no time to secure their homes, move livestock and valuables, or evacuate to safer areas before the floods struck. This left them highly vulnerable to the devastating impacts of the floods, including loss of life, damage to property, and disruption to livelihoods.

The lack of flood forecasting stations upstream of Hatibandha sub-district and limited forecasting for Sundarganj sub-district increased the flood risk of the downstream communities, particularly due to the Teesta Barrage's impact during increased flow. Therefore, tailored local level flood forecasts in an understandable and actionable format had been perquisite for enhancing community resilience.

The process of building the system

The solution to this problem was the establishment of a localized early warning system (EWS) that provided real-time flood alerts and information, giving communities the crucial lead time, they needed to take protective measures. This community-based EWS involved a network of local volunteers and authorities who worked together to receive, interpret, and disseminate flood warnings to at-risk communities. The system utilized a combination of modern meteorological data and traditional ecological knowledge to provide accurate and timely alerts, which were communicated through multiple channels such as mobile phone SMS, loudspeaker announcements, and physical flood risk markers.

The Flood Resilience Measurement for Communities (FRMC) framework was used to assess the community's flood resilience and guide the development of resilience-building interventions. By evaluating 44 resilience indicators across the five capital

domains (human, social, physical, natural, and financial), the framework enabled a deep, multi-dimensional understanding of the community's strengths and weaknesses in the face of flooding. This informed the implementation of targeted initiatives to enhance the community's overall resilience.

RIMES, supported by the Flood Resilience Project (FRP), made an effort to broadcast localized action-oriented early warning messages and advisories to stakeholders at all levels in real time, to reduce some of the gaps in access to early warning information. For this purpose, field teams generated a list of voice message recipients from targeted unions, upazila and districts. The voice message recipients include but not limited to the community members, local service providers, market actors, private sector agents, Union Disaster Management Committee (UDMC) members, Upazila Disaster Management Committee (UzDMC) members, local government, government stakeholders, etc. In addition to the initial list, contact numbers of some field staff, partner office staff and project staff were included in the list to maximize reach of information.

The praise from the Regional Integrated Multi-Hazard Early Warning System (RIMES), a renowned regional organization focused on multi-hazard early warning systems, underscores the effectiveness and importance of the community-based EWS developed by FRP. RIMES' endorsement validates the robust and innovative approach taken, which integrates state-of-the-art meteorological data with local knowledge and community engagement.

The outputs and outcomes

In July 2024, the success of this community-based EWS was demonstrated when the Community Resilience Action Group (CRAG) received real-time flood warnings and quickly mobilized to relay the information to the wider community. Residents were able to heed the warnings, monitor water levels using the flood risk poles, and take necessary precautions such as securing their homes, relocating livestock and valuables, and evacuating to designated safe areas. As a result, the community was able to minimize the impact of the flood, with reduced damage to property and livestock, and no reported loss of life.

During 2023-24, three thousand people received the early flood warning four times a year.

Towards the sustainability

Strong partnership between service providers such as RIMES and Bangladesh Water Development Board has created sustainability as RIMES has supported and strengthened the capacity of government institutions on disseminating locally adapted early warning messages. The project also utilized existing community structures and cost-effective methods which can be sustained in the long run.

Resilience

People are now receiving early warning messages in 36 – 72 hours in advance of flooding and are taking action by getting prepared for rice harvest, removing livestock and vulnerable people (children, pregnant women and elders) to shelters. People also are planting early maturing rice varieties in the early flood areas andwith the warning of ensuing flooding, farmers don't hesitate to harvest rice early at 70 – 80% maturity stage.

What would have happened today without the EWS?

Without the EWS, the loss of crop and property damage would have continued. People would have seen flood water beneath their beds when woke up.

Lessons learnt and potential for scalability

The key lessons learned from this initiative are the critical importance of providing early flood warnings to communities and the value of empowering local authorities and residents to actively participate in the early warning and disaster preparedness process. By giving households and the UDMC advance notice, the EWS enabled them to take timely and appropriate actions to safeguard lives, livelihoods, and property. This underscores the transformative potential of community-based EWS in building flood resilience.

Overall, this community-based EWS for flood early warning in the Hatibandha upazila represents a compelling case study of how the integration of modern science and traditional knowledge, coupled with strong community engagement, can significantly enhance the resilience of vulnerable populations to natural disasters. The success of this initiative serves as a model for replication and scaling in other flood-prone regions, with the potential to save countless lives and livelihoods.

"The key lessons learned from this initiative are the critical importance of providing early flood warnings to communities and the value of empowering local authorities and residents to actively participate in the early warning and disaster preparedness process."

Members of the Zurich Climate Resilience Alliance are funded by the Z Zurich Foundation, with the exception of Zurich Insurance Group. However, the views expressed in this publication do not necessarily reflect the official position of either the Foundation or the company.

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