



CASE STUDY

TRANSBOUNDARY FLOOD RESILIENCE IN NEPAL AND INDIA

Project name: Nepal-India Transboundary Flood Resilience Project (TBR)

Country: Nepal and India

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Annual flooding is one of the primary stressors eroding the ability of transboundary communities in this region to achieve development outcomes, including a better quality of life. The majority of people living in these transboundary communities have limited opportunities for socio-economic mobility due to their perceived caste affiliations, which still resonate in traditional Nepalese and Indian society. With few income generating options available to them, most rely on farming to survive. When floods disrupt their sole livelihood, they have little means to recover.

THE PROBLEM

Communities in the Gandak/Narayani and Koshi river basins along the Nepal-India border are closely linked not only by cultural and socio-economic ties, but by shared vulnerability to meteorological stressors. According to projections from the World Resources Institute Aqueduct Global Flood Analyzer, floods are expected to affect **156,600 PEOPLE IN NEPAL** and **10.5 MILLION PEOPLE IN INDIA** every year. Exacerbated by climate change and significant glacier melting in the Himalayas, annual flooding events, which typically occur during monsoon season and originate in the mountains of Nepal, wreak havoc on low-land communities in Nepal and India, killing people, livestock and crops. Furthermore, existing government warning systems were too slow, leaving most people without enough time to prepare for impending flood water, and government coordinated responses to flood-affected communities on both sides of the border were insufficient to meet the multitude of recovery needs.

PROJECT OUTCOMES

Through the **Nepal-India Transboundary Flood Resilience (TBR) project**, Lutheran World Relief (LWR) is collaborating with Grameen Development Services (GDS), SAHAMATI, Dan Church Aid, and Integrated Development Foundation (IDF) to assist communities located along the India-Nepal border in strengthening their resilience to the devastating effects of flooding. The project aims to do this through implementing integrated strategies to improve Early Warning Systems (EWS), strengthening government and community capacities in Disaster Risk Reduction (DRR), and building resilient livelihoods



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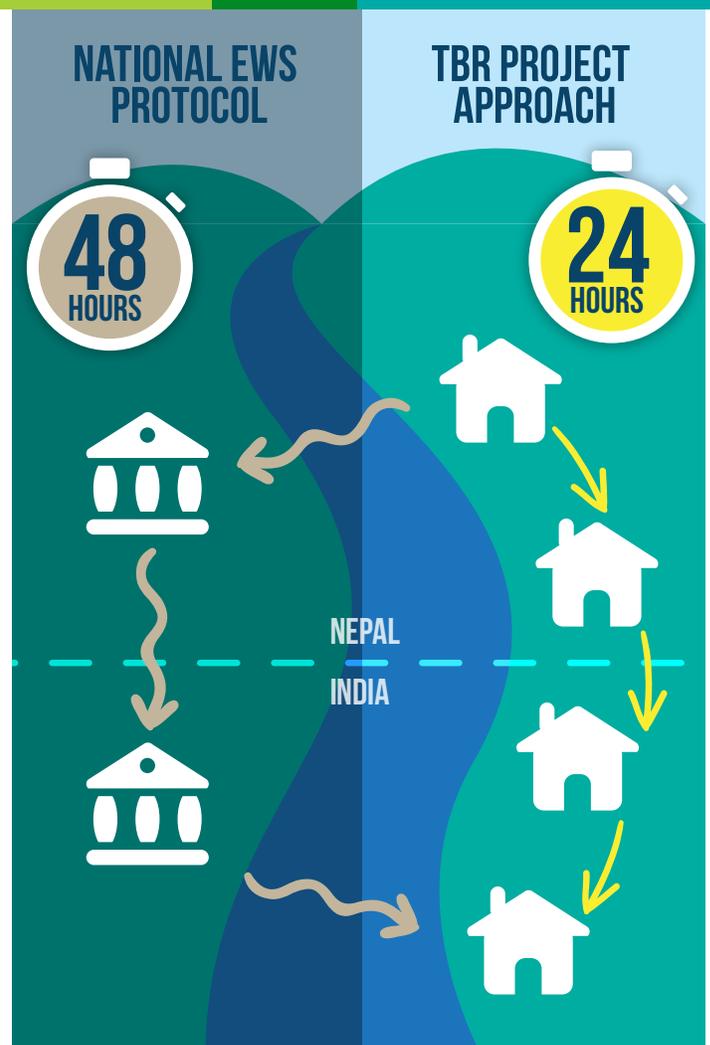
through cross-border community-based structures. Seizing the opportunity to apply a rare transboundary approach to development, LWR launched the TBR project in 2013 and reached 51,966 community members in 136 villages across India and Nepal by the end of 2016. The project's success led to the funding of a second phase in 2017, expanding the reach to 71,300 community members in 178 villages.

Through the TBR project, LWR and our partners are organizing community members (or strengthening groups that already exist) into transboundary citizen forums¹ and community disaster risk management committees (CDMCs) to prepare and provide early warning, first aid, search and rescue, and rehabilitation services to their communities. Members of these groups are trained in DRR and EWS and provided with lifesaving tools, such as sirens, mobile phones, megaphones, radios, flags, ropes, life jackets, boats, flashlights and temporary stretchers. CDMCs are also trained in the application of LWR's Dynamic Resilience Wheel² analysis model, which they can use to strengthen their ability to analyze local issues and develop local solutions to address issues affecting their resilience to flooding. These groups are also the implementers and the managers of the TBR project's real-time flood warning information system – a system that runs in tandem with official government communication channels for EWS. This new system enables communities to share EWS alerts from upstream communities directly to their downstream neighbors in a chain-like fashion. When an alert from an upstream community is received, the members of the downstream community's CDMCs spread the information throughout the village while also passing the alert on to the next downstream community. Communities have reported that this unique cross-border village-to-village EWS mechanism has doubled the speed of flood warnings – moving from a 48-hour relay to only 24 hours.

Understanding that DRR must be tied into long-term resilience programming in order for development outcomes in these communities to be achieved, the TBR project also integrates livelihood components (agricultural training in flood resistant crops, livelihoods diversification, etc.) as well as social insurance and savings models into the DRR and preparedness program. To date, the project has formed or strengthened more than 100 community-based self-help groups (SHGs) to promote savings and improve access to credit, thereby increasing financial security and resilience to financial stresses related to disasters.

1 These new transboundary citizen forums are the first shared platforms for learning, advocacy and action in the river basins on mitigating the effects of flooding.

2 The Dynamic Resilience Wheel (DReW) provides a snapshot of the key components of resilience thinking in development environments. Composed of multiple rotating layers, DReW offers a lens to help learn about and apply the main factors that play a role in resilience building. <https://lwr.org/what-we-do/resilience/wheel>



LWR's TBR project doubled the speed of real-time flood warning information traveling downstream from 48-hours using official national EWS communication channels to only 24 hours using the transboundary community-driven EWS approach piloted in TBR. Figures on the left represent official government to government communications, while those on the right represent community-based forums and committees that communicate directly to households.

In order to contribute to the study of resilience in the field of development, the TBR project, in cooperation with Yale University, is testing, documenting and sharing findings on the impact of the livelihoods and social insurance components of the TBR project on community resilience. Yale University has developed an innovative resilience measurement tool based on an adaptation of Sustainable Livelihoods Framework (SLF), which takes a holistic, systems-based view of resilience by incorporating six forms of capital (social, financial, human, natural, physical and political) and measuring (using a composite index) a resilience "score" to document how communities' resilience changes over time. The resilience measurement tool will be used to analyze, monitor and share the status of the interventions in the region through an online platform.

PROJECT IMPACT

The most immediate impact of the TBR project is the increased speed of flood alerts by 50 percent. Communities now have an additional 24 hours to protect their land and homes, move livestock to higher ground, and to evacuate their families when a flood is expected. This extra time has proven crucial to ensuring damage and loss are as minimalized as possible. Feedback from the communities has also indicated that they feel safer and better equipped to handle floods with the projects' inputs and skills trainings.

Though too early to fully understand the impact of livelihood and social insurance project activities on community resilience, many farmers have reported increases in income through their project-promoted efforts at livelihood diversification. For example, Jantri Kekat of Nawalparasi District in Nepal has been able to move beyond subsistence farming to earning 1,000 to 1,500 NPR (approximately \$9-14 USD) a day selling vegetables and bananas. Project monitoring shows that these increased incomes are often being saved and reinvested in growing farms as well as helping farmers purchase insurance for financial protection.

As reported by participants, the TBR project is also contributing to social changes particularly in women's lives. Gender inequality prevails in the river basins, with women facing low levels of access to education, healthcare, and economic, social, and political opportunities. The impacts of flooding can exacerbate this inequality and can contribute to the deterioration of gender issues in the community, given (among others) the heavy burden

that females assume in support of recovery efforts (both within their household and as part of broader social networks). LWR employs a series of assessment and monitoring tools to support a gender-integrated approach and ensure that the gender-based constraints of both men and women are addressed in project implementation across all activities, beyond simply ensuring equal representation and access to program benefits for both genders. From focus group discussions and interviews, LWR has gathered that this inclusive approach to gender in the project has influenced the attitudes and interpersonal dynamics of many men and women participants.

Finally, the TBR project has little negative impact on the environment of the river basins. As most activities, including the EWS, are conducted on foot, the project does not contribute to the carbon footprint of these communities. Farming practices taught through the project also are environmentally conscious and sustainable.

LOCAL OWNERSHIP & SUSTAINABILITY

LWR considers populations served by a development project and their local governing units as key stakeholders who must be consulted during project design, implementation, conclusion, and evaluation, to ensure their ownership and increase the likelihood of the long term sustainability of project activities and outcomes. Therefore, throughout the project, LWR and local partners continuously communicate with project participants and other stakeholders (government officials, community leaders, etc.) to share information about the project and to solicit their full participation and feedback. In addition to meetings with

Checking the water level in Saptari District, Nepal.



“I was able to sit on a chair next to a man and was able to equally participate in trainings, which were organized by GDS. Men are not used to sitting next to a woman in our society, even now, but we, both men and women, are able to sit together at the same level in the Citizen Forum and CDMC meetings ... As a woman, society does not consider me of equal importance [to a man] because people think women are not as intelligent as men. But now, some people's minds have changed because they saw women contributing equally when they received the necessary and same trainings and inputs as men and when they got the space to express and demonstrate their abilities. A woman can do what a man does. For example, women can also give flood early warning information to others or engage in rescue work. Because of this change, not only in the CDMCs but even in my family, people listen to my opinion, and I feel heard and well respected. Now, I have an identity in society.”



Chandrawati Devi,
TBR project participant in Bihar, India

participants and local authorities, the TBR project provides the opportunity for joint cross-border learning and monitoring visits of project sites for representatives of all stakeholders. Because DRR is a priority of both the Governments of India and Nepal, project partners also engage local government units to support the development and linkage of their official DRR efforts to that of the project. For example, in Nepal, the Nawalparasi District Government has used the disaster management plan designed in the TBR project to create its official district level disaster management plan, which covers all flood-prone villages in the district. The district has also committed to continuing to fund TBR initiatives after the project ends. In India, the Department of Disaster Management has invited LWR's local partner IDF to serve as a core committee member on the government's DRR Road Map of the State [Bihar] and advise the state on improving its DRR policies. Bihar authorities have also been responsive to requests for additional services from the TBR communities, such as road repairs and sanitation. By securing the support of the local authorities and building the DRR, EWS, and livelihood capacities of the local communities, LWR is ensuring that they will have the support structures and skills to prepare, respond and recover from floods even once the project is over.

There is significant potential for national and regional replication of the project's model for *transboundary* flood and water resilience. Therefore, LWR is partnering with the Asian Disaster Preparedness Center (ADPC), starting in 2017, to raise the visibility of the transboundary early warning systems. ADPC has a long history of working with both the Governments of Nepal and India, and other south and southeast Asian countries and can play a key role in leveraging community voices in the CDMCs and citizen forums, among others, to lay the foundation for national and regional adoption of TBR practices. This would also entail fostering the knowledge, education and political will necessary for the stake-holding governments to share their hydro-meteorological data, services and implementation arrangements for transboundary EWS and DRR initiatives.

CONCLUSION

As a faith-based organization, LWR embodies Lutheran values, bringing together those called by faith to build a world free of poverty and suffering. We envision a future where all people, in every corner of the world, can live full, dignified lives. By investing in people and working in partnership with local leaders who know their communities, our efforts enable the rural poor to transition from survival to stability. Our goal is not only to help people build self-sufficiency, but to create new community-owned approaches to problem-solving that will last long after our projects end. In this way, LWR is helping people worldwide build the resilience they need to thrive. LWR also takes our value of stewardship very seriously, both of financial and environmental resources. As our faith calls us to be good stewards, we strive to responsibly use our funds to meaningfully serve others and to ensure that our actions do no harm to the environment. These efforts have been well received by the TBR project participants and local authorities, building a foundation of trust between LWR and the communities that has fuelled local dedication to and participation in the project over several years. Without this trust, the success of the TBR project would not be as widespread nor as long-term as it is today.



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