CWS

Resilience: Disaster Risk Reduction and Climate Change Adaptation

About CWS

Church World Service (CWS) is a faith-based organization transforming communities around the globe through just and sustainable responses to hunger, poverty, displacement, and disaster. Our vision is a world where all have food, voice, and a safe place to call home.

Resilience: Adapting to the Changing Climate

Globally, average daily and seasonal temperatures are rising. Experts warn of significant negative consequences, especially more frequent and longer periods of drought. Other negative impacts of climate change are more intense rainfall leading to more severe flooding, landslides, rising sea levels and saline seawater intrusion on farmland. Stronger and more frequent storms, such as hurricanes and typhoons, are occurring as a new-normal phenomenon.

These hazards all increase social, economic, and environmental risks for hundreds of millions of people. Whether they are living in cities, where population are more concentrated, or in remote rural areas where there are limitations to accessing humanitarian support, there is harm. Those worst affected are often those most isolated by underlying economic, legal, social and cultural factors. They are the older, migrants, persons with disabilities, women, children, people with mental and other health issues, and other marginalized populations. Additionally, climate change negatively affects human health. Increased incidence of diarrheal and tropical diseases (e.g. malaria and dengue fever) often accompany flooding. Also, there is evidence that climate change exacerbates and increases acute respiratory infections. Climate change is disproportionately impacting vulnerable populations by exacerbating existing inequalities and exposing them to heightened risks such as food and water insecurity, displacement, health threats, and violence.

It is therefore critical for communities to be resilient to stresses and shocks. CWS sees communities realizing this vision by effectively adapting to climate change and reducing disaster risks, so that they can have 'a safe place to call home'. Through its work on Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA), CWS aims to support transformation of communities towards resilience

where effective DRR and CCA are in place. This technical program brief is intended for both internal and external stakeholders of CWS, particularly those who are designing, implementing, and supporting resilience programming. Through its work on Disaster Risk Reduction (DRR)[1] and Climate Change Adaptation (CCA)[2], CWS aims to support transformation towards **the resilient communities where effective DRR and CCA are in place and action.**

Building Blocks of 'Resilience'

'Resilience is the ability of people, households, communities, countries and systems to mitigate, adapt to and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth.' (USAID) A key global framework that can guide the DRR and CCA programming is Sendai Framework for Disaster Risk Reduction (SFDRR)[3]. SFDRR emphasizes that policies and practices for disaster risk management must be based on an understanding of disaster risks in all their dimensions.

Four Building Blocks

CWS, with SFDRR and its experiences combined, has set below four building blocks that can effectively contribute to enhancing resilience'.

1 **Strengthened Localized Capacity for Risk Assessment and Forecast**

2 **Multi-Sectoral System Lens for DRR/CCA Impact**

3 **Locally-Led Planning and Implementing DRR/CCA Actions to Reduce Losses**

4 **Enhanced Preparedness for Early/Anticipatory Action**

1 *Disaster risk reduction* (DRR) refers to strategies, policies, and actions that decrease the potential harm to people, services, and/or assets when hazards do occur. DRR includes measures to improve understanding of disaster risks, encourage equitable risk transfer, and promote continuous improvement in disaster preparedness, response, and recovery practices with the aim of increasing human security and contributing to sustainable development. It recognizes that disasters are not "natural" -- meaning that while hazards inevitably occur, there are many ways to minimize risk and potential harm by reducing exposure and addressing structural vulnerabilities, so that hazardous events do not lead to disastrous outcomes.

2 *Climate change adaptation* (CCA or adaptation) refers to the process of adjusting human systems to the actual and/or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. It includes building social, physical, economic, and environmental infrastructure now, for climate conditions that are reasonably expected in the future, given the best available climate change projections. Adaptation is a long-term process that acknowledges human-driven climate change is already taking place; it does not replace critical efforts to mitigate climate change itself, such as through shifts from fossil fuels to renewable energy.

3 Sendai Framework for Disaster Risk Reduction 2015-2030, https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf

1 Strengthened Localized Capacity for Risk Assessment and Forecast

Understanding risks is essential. Resilience cannot be strengthened without understanding what risks people face as well as how they perceive and experience these risks. A key point here is that levels of risk vary over time, depending on where and how people live. The nature of risk also changes depending on the types of hazards people face and their intersection with vulnerabilities of the population. For example, floods and earthquakes clearly affect people's lives differently. The impact of risk also changes depending on people's assets and liabilities – as individuals, as families, as communities. So, it is fundamental to CWS to regularly support people – individuals, families and communities particularly with heightened vulnerability– to assess risks in order to design and implement effective and efficient measures of DRR and CCA. And for communities to assess DRR/CCA risks effectively, technical support, and knowledge / know-how transfer is the role for CWS to play.

Resilience Support in Action: Vietnam

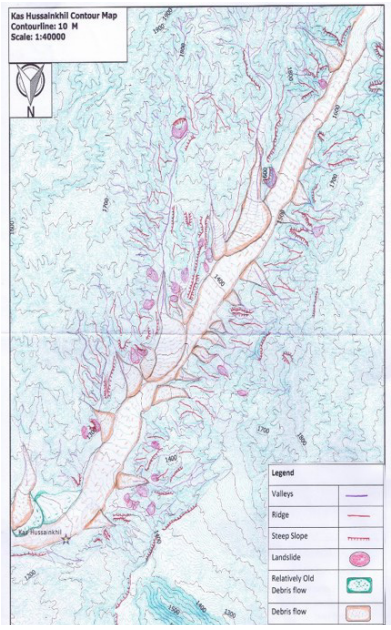
Visualizing landslide movement through wooden monitoring stakes

Two sets of wooden stakes are placed over a crack and where wooden stakes are adjacent to each will shift as one side of the land moves due to factors such as rainfall. This way, communities understand how much, and to which direction, the slope is moving. Often landslide movement occur with underground water at the time of rainfall, and expensive equipment and assessments are used to understand the correlation between rainfall and land movement, but this technique allows the community to visualize the land movement with inexpensive investment. The intervention took place in Northern Vietnam, and it enabled the communities to detect landslide risks early on to take anticipatory actions to mitigate impact.

Resilience Support in Action: Afghanistan

Hazard map creation with free data and free software

It is often challenging for local communities and governments to equip themselves with expensive software and data, so a method was established to create hazard map using free data (AW3D 30m DEM data) and free software (QGIS). The method involves (1) creation of contour maps of target area, (2) land interpretation of assessing potential risk area, (3) on-site risk confirmation, (4) finalization of hazard maps. The method was tested in Afghanistan, and as it is working well, a training center was set up at Kabul University and few other locations and constant trainings are being delivered. Such identification of risks and risk communication enabled the communities to decide how to ensure their safety while deciding where to build houses, or where to evacuate when there is imminent risk of flash floods.



2 Multi-Sectoral System Lens for DRR/CCA Impact

Related to the effects of sudden-onset nature-induced disasters on communities, the risks to key infrastructure in the communities (e.g. agricultural, health, or water/sanitation/hygiene infrastructures) are rising and *'unless infrastructure and management systems are made more resilient to future climate change, the impacts on health, social and economic impacts will be significant*[4]*'*. Climate change cuts across every aspect of communal life, and there are clear cascading impacts from sector to sector. Therefore, DRR/CCA interventions require holistic multi-sectoral perspectives. Therefore, it is necessary to integrate DRR/CCA elements in WASH, health, livelihoods, protection, and food security interventions while also working to mitigate the effects of potential disaster risks.

Resilience Support in Action: Kenya

Livelihood resilience initiatives in arid and semi-arid zones

In the vast arid lands of Northern Kenya more frequent droughts and more variable rainfall has severely compromised traditional pastoralist ways of life. With each drought, water and forage become critically scarce so most livestock are sold or die off. As most of the diet and income of a household derives from livestock, food security plummets. Women and children are more vulnerable as men travel further afield with remaining cattle or to look for work in cities. In settlements, as families no longer move continuously with cattle, water availability, sanitation and hygiene all deteriorate. A holistic, multi-sectoral approach to supporting adaptation is essential. Participatory construction of sand-dams is a low-tech way to raise awareness and increase water availability in the dry season. Agreements to protect vegetation around the catchment area slows runoff, enhances ground-water retention and restores habitat for bees. Empowering women is a critical piece of both CAA and DRR, their voices are essential in management of water resources, advocating with local authorities, exploring alternative livelihoods. Honey production creates alternative, ecosystem positive, sources of income while using modern hive design with pulleys reduces the need for tree-climbing, so women are not excluded because of gender norms that dictate thatgirls shouldn't climb trees. CWS also provides protective clothing and gear to women, who might otherwise not be able to access this necessary equipment, and it leverages women-led groups to mobilize financial resources toward post-harvest production and marketing. Small scale gardens and drought resistant crops give women agency in improving household food security while men are away for long periods. Women also lead in establishing group guaranteed savings and loans groups which builds social capital while creating a pool of resources for micro-enterprise and emergency needs.

4 Building adaptation to climate change in health in least developed countries through resilient water, sanitation and hygiene (WASH), climate-change-and-health-lessons-learned-documentation.pdf (who.int)

Resilience Support in Action: Georgia

Re-building resilience amid planned relocation due to climate-induced risks

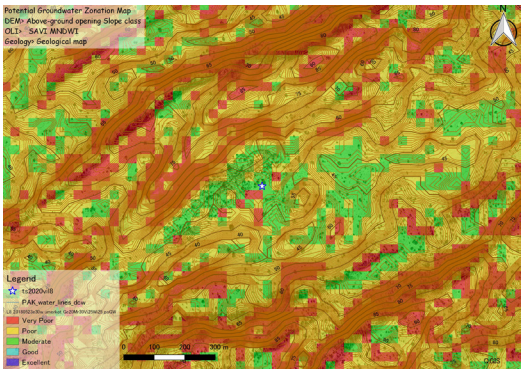
Georgia's southern and southwestern regions face numerous environmental challenges, including rising temperatures, glacier retreat, landslides, and extreme weather events. Deforestation, land degradation, and unsustainable agriculture exacerbate disaster risks, particularly due to climate change. These conditions threaten vulnerable communities' agriculture, water resources, and infrastructure. The state-managed relocation program for environmental migrants offers limited assistance, with minimal support post-relocation. Displaced individuals, especially women, struggle with restricted access to resources and lack the necessary skills to cope with climate change effects. To address these issues, initiatives focus on awareness-raising, skills training, and capacity building. Migration support services and early warning systems are established to improve access to information about safe migration and hazardous weather events. Sustainable practices such as renewable energy technologies, drip irrigation, rainwater harvesting, and small-scale dairy farming are promoted. Financial mechanisms like Village Savings and Loan Associations (VSLAs) are also introduced to reduce energy costs and increase income opportunities for environmental migrants.

3 Locally-Led Planning and Implementing DRR/CCA Actions to Reduce Losses

Participation of all stakeholders within and across sectors is essential, and CWS supports proactive community leadership and participation as the core of effective and efficient DRR/CCA interventions. This ensures that community priorities (needs, ideas for solutions, etc.) are addressed which also helps to ensure sustainability. There are often gaps between policy and practice between national and local government levels, but there are also many good practices by local communities and governments. For example, technical gaps at local government level on how to assess, communicate and mitigate disaster risks are sometimes addressed through local level collaboration. At the end of the day, DRR/CCA is 'a way of living', which goes beyond any single project; therefore, leadership of local communities is essential in planning and implementing activities that address the risk factors the communities are facing. DRR and CCA cannot be considered independent of each other. Reducing risks and adapting relevantly to climate change are key factors underlying the design and implementation of activities for all resilience interventions.

Resilience Support in Action: Pakistan

Identification of underground water through remote sensing



To seek potential underground in arid Thar Desert area, CWS gathered and analyzed satellite image information on surface temperature, vegetation spread, and topography analysis. Then, an underground water potential map was produced, and an Electronic Resistivity Survey (ERS) was done in close consultation with the community as well as analysis of existing water sources in the area. Different layers and sediment types shows different resistivity to electricity.

This process helped differentiate underground brackish and sweet water reservoirs. By doing so, communities can save time and money, and also make suitable plans according to aquifer quantity. The project also included installation of underground tanks for harvesting rainwater. Although rainfall is generally very limited and unreliable in the affected areas, if the water is stored properly, it can be used for everyday household purposes.

Resilience Support in Action: Cambodia

Ecosystem-based Adaptation (EbA): A whole-of-society approach to CCA in the Stung Prey Pros watershed

CWS Cambodia is working with communities, grassroots environmental groups, government at all levels from commune to national, and business, to adopt a landscape management approach. This approach supports ecosystem and biodiversity conservation while providing improvements in resilience and adaptive capacities to climate change and socio-economic benefits to communities. It does this by working across three linked interventions: (1) intra-district decision-making support, (2) micro-watersheds management and ecosystem services, and (3) establishment and strengthening environmentally friendly farming and agri-business models.

4 Enhanced Preparedness for Early/Anticipatory Action

The steady growth of disaster risks, including the increase of human and material assets exposure, combined with the lessons learned from past disasters, shows the continuing need to further strengthen preparedness and early/anticipatory action planning. It is imperative for at-risk communities to understand not only 'where' is dangerous, but 'when' it becomes dangerous. So, clear understanding of triggers of early/anticipatory action to mitigate as much loss as possible is critical. CWS has also developed a technical guidance note called 'Planning and Starting Anticipatory Action' which assists CWS offices and partners to uplift the work around this building block.

Resilience Support in Action: Indonesia

Anticipatory Action planning against recurrent flood risks in urban area

CWS supports the development of a community-led flood anticipation system in the flood prone urban community in Makassar, South Sulawesi. The 3-year project is aimed to strengthen and build community's preparedness and to take action with the intent to prevent or mitigate the impact from the floods. This requires information about the risks that the community is facing (including vulnerabilities and capacities), forecasting/projection and developing an early warning system. A set of protocols and pre-agreed triggers will be also developed by the community to access funds/resources to enable the community to take early action ahead of the anticipated floods to assist evacuations or other protective actions focused on vulnerable communities.

Four Building Blocks of Resilience

CWS, through the 4 building blocks of resilience outlined above, will aim to maximize its value-additions to the communities we serve, so that the communities have food, voice, and a safe place to call home, despite increasing risk factors in their environments.

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Resources for Further Learning and Exploration

- UNDRR, Technical Guidance on Comprehensive Risk Assessment and Planning in the Context of Climate Change (2022): https://www.undrr.org/publication/technical-guidance-comprehensive-risk-assessment-and-planning-context-climate-change
- ELRHA, Locally-Led Innovation: https://www.elrha.org/locally-led-innovation/
- GNDR/DKH, Locally Led Anticipatory Action Guide & Toolkit (2024): https://www.gndr.org/locally-led-anticipatory-action-guide-toolkit/

CWS Technical Program Notes describe CWS's approach to a particular technical area or sector and situate it within existing global frameworks, standards, or best practices.

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