Flood Resilience Alliance

Technical Inputs to Green Climate Fund Water Sector Guidance Consultations

The Zurich Flood Resilience Alliance (ZFRA) is a multi-sectoral partnership which brings together community programmes, new research, shared knowledge, and evidence-based influencing to build community flood resilience in developed and developing countries. We help people measure their resilience to floods and identify appropriate solutions before disaster strikes. Our vision is that floods should have no negative impact on people's ability to thrive. To achieve this, we are working to increase funding for climate smart, risk informed development; strengthen global, national and subnational policies; and improve flood resilience practice. ZFRA has committed to scaling up our work in climate action, including advocating for the generation of an additional USD 1 billion from public and private sources in climate-smart, risk-informed development, which builds resilience. With our programming and advocacy efforts we commit to helping make 2 million people more resilient to flooding.

The needs for building flood resilience is urgent, and also has the potential to reap multiple dividends:

- Floods affect more people globally than any other type of natural hazard, with over 734 million people affected by floods in the last 10 years alone;[1]

[1] IFRC (2018) World Disasters Report, 2018 [pdf], https://media.ifrc.org/ifrc/wp-content/uploads/sites/5/2018/10/B-WDR-2018-EN-LR.pdf [accessed 20July 2019].

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- Floods cause significant economic losses; from 1998 to 2017, floods resulted in USD 656 billion in damages;[2]
- Every dollar spent on flood resilience saves, on average, five dollars in terms of future losses;[3] and,
- Estimates predict a tripling of people vulnerable to sea level and coastal flooding by 2050.[4]

As the Green Climate Fund (GCF) undertakes technical consultations to develop guidance for the water sector, we would urge you to consider best practice in flood management and resilience measurement to support more effective investments at local levels. More details of our recommendations are below and as our vision and objectives align closely with the GCF's result area of "increased resilience of health, food and water security" we look forward to partnering with you to advance these important goals.

Measuring Flood Resilience

Through our Alliance's efforts in building flood resilience around the world, we have gathered empirical evidence on the drivers of resilience in 9 countries, spanning 4 continents over the last 7 years using the innovative Flood Resilience Measurement for Communities tool. In partnership with communities, we have built an unprecedented database of community-level information and experience with flooding. The evidence shows that communities can build their resilience by strengthening five different types of capital: human, social, physical, financial, and natural capital. Investments in flood resilience are needed across these five capitals to be effective. The FRMC, or a tool with similar measurement capacities, could be used by the GCF to measure resilience and help communities identify resilience capacities and locally-led interventions to strengthen their ability to cope with flooding. In particular, the decision-making and decision-support aspects of the FRMC have the potential to bring local government actors to the table to implement appropriate interventions and increase their capacity to support community resilience, which speaks to the GCF's efficient and effective investment criteria.

Localization and Building Flood Resilience

Only an estimated 10 percent of climate finance reaches local levels.[5] While we do not have comprehensive global data on financing for flood resilience at local levels, our experience on the ground has shown us a shocking lack of support at local levels for building flood resilience. This is especially problematic as the impacts of floods are felt

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[2] UNISDR (2017), Economic Losses, Poverty & Disasters 1998-2017, pg. 10, https://www.unisdr.org/2016/iddr/IDDR2018_Economic%20Losses.pdf.
[3] Zurich Flood Resilience Alliance (2015) Zurich Risk Nexus: Turning Knowledge into Action – Processes and Tools for Increasing Flood Resilience http://www.zurich.co.uk/_/media/dbe/corporate/ knowledge/docs/risk-nexus-september-2015-turning-knowledge-intoaction.pdf [accessed 10 April 2019].
[4] Kulp, S.A., Strauss, B.H. New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding. Nat Commun 10, 4844 (2019). https://doi.org/10.1038/s41467-019-12808-z
[5] Soanes, M., Shakya, C., Walnycki, A., and Greene, S. (2019) Money Where it Matters: Designing Funds for the Frontier [online], IIED Issue Paper, London: IIED. https://pubs.iied.org/10199IIED/

most immediately at the local level, and communities and local authorities hold important knowledge on where and how to build resilience. While the GCF has invested significantly in readiness programmes to establish foundations for larger investments, there has to date been limited national/regional level projects that support flood and watershed management, we urge you to increase your consideration for sub-national and locally led investments and programs that strengthen local institutions and governance, where people have the best knowledge of the risks they face and the solutions to them.

We appreciate the number of flood management projects that the GCF has financed. However, most of these projects go to International Accredited Entities, like UNEP and UNDP and not Direct Access Entities working most immediately at local levels. ZFRA analysed the 48 GCF existing projects that supported flood resilience or flood management and found the following[6]:

- 35 projects (73 percent) have gone to multilateral organizations like UN agencies, international finance institutions, and development banks (worth a total of 3.1 billion USD)
- 6 projects (13 percent) went to national government ministries or finance institutions (worth a total of 301.4 million USD)
- 3 projects (6 percent) have gone to regional entities (including 1 finance institution and 2 NGOs worth a total of 99.8 million USD)
- 2 projects (4 percent) went to international NGOs (worth a total of 156 million USD)
- 2 projects (4 percent) went to national NGOs (worth a total of 22.4 million USD)

This current breakdown of funding highlights an imbalance in implementation of flood management and flood resilience programming heavily skewed towards large institutions. We urge the GCF to consider reforming its accreditation processes to ensure that it is easier for organizations operational at the local level- like national NGOs, INGOs, local governments, and the private sector- to access financing for programs that help build flood resilience and other resilience building activities. Furthermore, the GCF must streamline processes to open up more direct funding channels to agencies working at the local levels who do not have resources and capacities to go through costly and lengthy proposal development.

Solutions to Build Flood Resilience

ZFRA has developed an evidence-based approach, illustrating the value of investing in flood resilience. Proven resilience building measures range from ‘softer’ interventions to green infrastructure and can include[7]:

- End-to-end warning systems (which ensure that early warning reaches the community level);
- Livelihood diversification options;

[6] See Annex A for this analysis
[7] See our Flood Resilience Portal (https://floodresilience.net/index.php) for best practices for flood practitioners.

- Eco-solutions (for example, Bio-dykes to prevent erosion of river banks);
- Climate sensitive and participatory risk assessments;
- Community capacity building;
- Nature-based solutions (which can be used as an alternative or complement to single purpose, grey infrastructure investments like levees or flood walls);
- Communication to raise risk awareness;
- Financial protection (such as flood insurance, forecast-based financing);
- Ensuring critical infrastructure in flood-prone areas are made resilient and market systems function during disasters;
- Long term risk assessments, inventories and implementation of identified interventions for averting, minimizing and addressing loss and damage; and
- Planning and avoiding development in high-hazard areas and ensuring that resources are available for implementation of these measures.

We hope the GCF Secretariat finds this technical input useful to inform the water sector guidance. ZFRA has developed a working paper (attached) which details additional recommendations for how the GCF can meet urgent climate change adaptation needs, including support for localization. By building resilience to floods through its programming, the GCF can realize its mandate to help developing countries enhance their ability to respond to climate change.

References

1. IFRC (2018) World Disasters Report, 2018 [pdf], https://media.ifrc.org/ifrc/wp-content/uploads/sites/5/2018/10/B-WDR-2018-EN-LR.pdf
2. UNISDR (2017), Economic Losses, Poverty & Disasters 1998-2017, pg. 10, https://www.unisdr.org/2016/iddr/IDDR2018_Economic%20Losses.pdf.
3. Zurich Flood Resilience Alliance (2015) Zurich Risk Nexus: Turning Knowledge into Action – Processes and Tools for Increasing Flood Resilience http://www.zurich.co.uk/_/media/dbe/corporate/ knowledge/docs/risk-nexus-september-2015-turning-knowledge-intoaction.pdf [accessed 10 April 2019].
4. Kulp, S.A., Strauss, B.H. New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding. Nat Commun 10, 4844 (2019). https://doi.org/10.1038/s41467-019-12808-z
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Annex A

Methodology for Analysis of Flood Resilience Projects

To conduct this analysis, ZFRA searched the GCF project database for 'flood' and 'flood management' projects that were approved from 2015-2019. The projects that matched this criteria were reviewed individually to determine if there was a flood resilience or flood management element to the project. Projects that did not have a direct flood resilience benefit were not included.

Key:
National NGO or foundation
National government or finance institution
International organizations (UN Agencies, international finance institutions, development banks)
International NGO
Regional entity (finance institution or NGO)

2019				
Approved GCF projects	**Country**	**Project Type**	**Implemented by**	**Cost**
Extended Community Climate Change Project-Flood (ECCCP-Flood)	Bangladesh	Adaptation	Palli Karma-Sahayak Foundation	13.3m
Building resilience of communities living in landscapes threatened under climate change through an Ecosystems-based Adaptation approach	Namibia	Adaptation	Environmental Investment Fund of Namibia	9.1m
Multi-Hazard Impact-Based Forecasting and Early Warning System for the Philippines	Phillipines	Adaptation	Landbank of the Philippines	20.2m
Building resilience of urban populations with ecosystem-based solutions in Lao PDR	Laos	Adaptation	UNEP	11.5m
Safeguarding rural communities and their physical assets from climate induced disasters in Timor-Leste	Timor Leste	Adaptation	UNDP	59.4m
Blue Action Fund (BAF): GCF Ecosystem Based Adaptation Programme in the Western Indian Ocean	Tanzania, Madagascar, South Africa, Mozambique	Adaptation	Kreditanstalt für Wiederaufbau (KFW)	60.4m

2018				
Approved GCF projects	**Country**	**Project Type**	**Implemented by**	**Cost**
Productive investment initiative for adaptation to climate change (CAMBio II)	Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Dominican Republic	Adaptation	Central American Bank for Economic Integration	28m
Building livelihood resilience to climate change in the upper basins of Guatemala's highlands	Guatemala	Adaptation	International Union for Conservation of Nature	37.7m
Institutional Development of the State Agency for Hydrometeorology of Tajikistan	Tajikistan	Adaptation	Asian Development Bank	10m
Africa Hydromet Program – Strengthening Climate Resilience in Sub-Saharan Africa: Burkina Faso Country Project	Burkina Faso	Adaptation	World Bank	25m
Pacific Resilience Project Phase II for RMI	Marshall Islands	Adaptation	World Bank	44.1m
Integrated physical adaptation and community resilience through an enhanced direct access pilot in the public, private, and civil society sectors of three Eastern Caribbean small island developing states	Antigua, Dominica, Grenada	Adaptation	Department of Environment, Ministry of Health and Environment, Government of Antigua and Barbuda	22.6m
Climate services and diversification of climate sensitive livelihoods to empower food insecure and vulnerable communities in Kyrgyzstan	Krygystan	Adaptation	WFP	9.6m
Transforming the Indus Basin with Climate Resilient Agriculture and Water Management	Pakistan	Adaptation	FAO	47.7m
Ensuring climate resilient water supplies in the Comoros Islands	Comoros	Adaptation	UNDP	60.8m
Strengthening climate resilience of agricultural livelihoods in Agro-Ecological Regions I and II in Zambia	Zambia	Adaptation	UNDP	137.3m
Enhancing adaptive capacities of coastal communities, especially women, to cope with climate change induced salinity	Bangladesh	Adaptation	UNDP	33m
Scaling-up Multi-Hazard Early Warning System and the Use of Climate Information in Georgia	Georgia	Adaptation	UNDP	70.3m
Building climate resilience of vulnerable and food insecure communities through capacity strengthening and livelihood diversification in mountainous regions of Tajikistan	Tajikistan	Adaptation	WFP	10m
Enhancing climate resilience of India's coastal communities	India	Cross-cutting	UNDP	130.3m

South Tarawa Water Supply Project	Kiribati	Cross-cutting	Asian Development Bank	58.1m
Ulaanbaatar green affordable Housing and resilient Urban Renewal Project (AHURP)	Mongolia	Cross-cutting	Asian Development Bank	570.1m
Climate-friendly agribusiness value chains sector project	Cambodia	Cross-cutting	Asian Development Bank	141m
Strengthening climate resilience of rural communities in Northern Rwanda	Rwanda	Cross-cutting	Ministry of Environment (formerly Ministry of Natural Resources of Rwanda)	33.2m
Programme for integrated development and adaptation to climate change in the Niger Basin (PIDACC/NB)	Benin, Burkina Faso, Côte d'Ivoire, Guinea, Mali, Niger, Nigeria, Cameroon, Chad	Cross-cutting	African Development Bank	209.9m
Water Sector Resilience Nexus for Sustainability in Barbados (WSRN S-Barbados)	Barbados	Cross-cutting	Caribbean Community Climate Change Center	45.2m

2017				
Approved GCF projects	**Country**	**Project Type**	**Implemented by**	**Cost**
Responding to the increasing risk of drought: Building gender-responsive resilience of the most vulnerable communities	Ethiopia	Adaptation	Ministry of Finance and Economic Cooperation of the Federal Democratic Republic of Ethiopia	50m
Scaling up climate resilient water management practices for vulnerable communities in La Mojana	Colombia	Adaptation	UNDP	117.2m
Enhancing climate change adaptation in the North coast and Nile Delta Regions in Egypt	Egypt	Adaptation	UNDP	105.2m
Building the climate resilience of food insecure smallholder farmers through integrated management of climate risks the R4 Rural Resilience Initiative)	Senegal	Adaptation	WFP	10m
Groundwater recharge and solar micro irrigation to ensure food security and enhance resilience in vulnerable tribal areas of Odisha	India	Adaptation	National Bank for Agriculture and Rural Development	166.3m
Irrigation development and adaptation of irrigated agriculture to climate change in semi-arid Morocco	Morocco (water scarcity)	Adaptation	Agence Française de Development (AFD)	83.5m
Simiyu Climate Resilient Project	Tanzania	Adaptation	Kreditanstalt für Wiederaufbau (KfW)	157.6m
Scaling up hydropower sector climate resilience	Tajikistan	Adaptation	European Bank for Reconstruction and Development	133m
Bhutan for life	Bhutan	Cross-cutting	World Wildlife Fund, Inc.	118.3m

2016				
Approved GCF projects	**Country**	**Project Type**	**Implemented by**	**Cost**
Climate Information Services for Resilient Development Planning in Vanuatu (Van-CIS-RDP)	Vanuatu	Adaptation	Secretariat of the Pacific Regional Environment Programme	26.6m
Senegal Integrated Urban Flood Management Project	Senegal	Adaptation	Agence Française de Development (AFD)	78m
Integrated Flood Management to Enhance Climate Resilience of the Vaisigano River Catchment in Samoa	Samoa	Adaptation	UNDP	65.7m
Building Resilient Communities, Wetland Ecosystems and Associated Catchments in Uganda	Uganda	Adaptation	UNDP	44.3m
Scaling-up of Glacial Lake Outburst Flood (GLOF) risk reduction in Northern Pakistan	Pakistan	Adaptation	UNDP	37.5m
Strengthening the resilience of smallholder farmers in the Dry Zone to climate variability and extreme events through an integrated approach to water management	Sri Lanka	Adaptation	UNDP	52.1m
Tuvalu Coastal Adaptation Project (TCAP)	Tuvalu	Adaptation	UNDP	38.9m
Africa Hydromet Program – Strengthening Climate Resilience in Sub-Saharan Africa: Mali Country Project	Mali	Adaptation	World Bank	31m
Improving the resilience of vulnerable coastal communities to climate change related impacts in Vietnam	Vietnam	Cross-cutting	UNDP	40.5m

2015				
Approved GCF projects	**Country**	**Project Type**	**Implemented by**	**Cost**
Fiji urban water supply and wastewater management project	Fiji	Adaptation	Asian Development Bank	405.1m
Climate Resilient Infrastructure Mainstreaming (CRIM)	Bangladesh	Adaptation	Kreditanstalt für Wiederaufbau (KFW)	81m
Scaling up the use of Modernized Climate information and Early Warning Systems in Malawi	Malawi	Adaptation	UNDP	16.3m
Building the Resilience of Wetlands in the Province of Datem del Marañón, Peru	Peru	Cross-cutting	Peruvian Trust Fund for National Parks and Protected Areas (gov)	9.1m