



RESILIENCE TO CLIMATE CHANGE

AN OVERVIEW OF SUPPORT PROVIDED BY GFDRR

*Prepared for the First Meeting of the
Resilience to Climate Change Advisory Group*

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Notes:

Fiscal year 2015 (FY) runs from July 1, 2014 to June 30, 2015.

All dollar amounts are in US dollars (\$) unless otherwise indicated.

Box 1: About GFDRR

The **Global Facility for Disaster Reduction and Recovery (GFDRR)** is a global partnership, managed by the World Bank and funded by 22 donor partners, that supports the implementation of the Sendai Framework for Disaster Risk Reduction 2015-30 by enabling developing countries to better understand and reduce their vulnerabilities to natural hazards and adapt to climate change. Working with over 400 local, national, regional, and international partners, GFDRR provides grant financing for technical assistance, analytical work, training and knowledge sharing to help mainstream disaster and climate risk management into country-level strategies and policies.

GFDRR finances activities through a Multi-Donor Trust Fund (MDTF) and two Special Programs: the Africa Caribbean Pacific–European Union Natural Disaster Risk Reduction Program (ACP-EU Program) and the Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries (Japan-World Bank Program)



GFDRR’s monitors its activities through five **Pillars of Action**, including cross-cutting themes such as resilience to climate change and gender.

Risk Identification	Risk Reduction	Preparedness	Financial Protection	Resilient Recovery
Improving access to disaster and climate risk information and capacity to create, manage, and use this information	Improving planning, building practices, policies, and investments to reduce disaster and climate risk	Strengthening early warning, forecasting, contingency planning, and emergency preparedness for disaster response	Developing financial protection strategies and insurance markets	Improving the quality and timeliness of recovery and reconstruction

Through its **Thematic Programs**, GFDRR provides **tailored technical support** to implementing partners. These programs also assure the quality of GFDRR grants and lead capacity development and knowledge activities. GFDRR’s thematic programs primarily underpin country programs and cut across the five pillars of action.

Disaster Risk Financing and Insurance	Supports activities that aim at strengthening the financial resilience of governments, businesses, and households.
Inclusive Community Resilience	Supports activities that aim at promoting community driven development, gender equality, and women’s empowerment, as well as increasing civil society engagement in policy dialogues.
Hydromet	Supports activities that aim at modernizing weather, climate, and hydrological information systems, working in close collaboration with the World Meteorological Organization (WMO)
Innovation Lab	Supports the use of science, technology, open data, and innovation to empower decision-makers to increase resilience.
Resilient Cities	Supports cities to prepare and adapt to changing conditions, and to withstand and recover rapidly from disruptions related to climate change, disasters caused by natural hazards and other systemic shocks.
Safer Schools	Supports activities aimed at integrating risk into existing education sector investments by leveraging long-established relationships with ministries of finance, public works, and education.
Resilient Recovery	Supports post-disaster assessments and recovery frameworks to mainstream disaster risk management and recovery readiness into development policy.

Resilience to Climate Change is a Cross-Cutting Theme of GFDRR, cutting across nearly half of its portfolio.

Overview

Building resilience to climate change¹ is a key component of GFDRR’s commitment to integrate disaster risk management into development strategies. With Munich Re estimating that **87 percent of the reported disasters and 74 percent of the losses in 1980-2012 were caused by weather extremes**, the links between disaster risk management and climate change adaptation are increasingly apparent. The impacts of climate-related disasters are felt most acutely by the poorest and most marginalized populations, who commonly live in the highest-risk areas and have the least ability to recover. Building resilience to climate change is therefore critical to help end extreme poverty and build shared prosperity.

GFDRR engages with regions and countries where disaster risk management principles are important for adaptation to climate change and management of disasters’ residual risks. This provides opportunities to manage disaster risks through a climate resilient perspective and in turn to use proven methods of disaster risk management to manage the impact of climate change. Since its inception, GFDRR

Resilience to climate change has long been an important part of GFDRR’s work

has supported activities that contribute to climate change adaptation. **Between 30-45 percent of the grants awarded from fiscal years (FY) 2007 to 2014 contributed to adaptation to climate change**, in addition to more immediate disaster risk management.

Box 2: Highlights of Past GFDRR Support to Resilience to Climate Change – the Building Resilience Report

In late 2013, GFDRR and the Climate Finance and Policy Team issued the “Building Resilience” Report, summarizing the World Bank Group’s experience in climate and disaster resilient development. It concluded that:

- Building climate and disaster resilience is essential to ending poverty and shared prosperity.
- Climate and disaster resilient development is effective over the long-term, but can require substantial start-up support – both technical as well as financial.
- There is an increasing body of knowledge on how to build resilience to weather-related disasters, but better integration between climate resilience approaches and disaster risk management is required to optimize these synergies.

World Bank and GFDRR (2013): Building Resilience – Integrating Climate and Disaster Risks into Development. The World Bank Group Experience



¹ GFDRR uses the latest Intergovernmental Panel on Climate Change (IPCC) definition of resilience to climate change, which is “the ability of a system and its component parts to anticipate, absorb, accommodate or recover from the effects of a hazardous (climate-related) event in a timely and efficient manner....”.

Since November 2014, GFDRR's support for resilience to climate change has been further spearheaded by a CHF 14.45 million contribution from the Swiss Agency for Development and Cooperation Global Program for Climate Change (SDC-GPCC), channeled through the GFDRR's Multi-Donor Trust Fund (MDTF). Specific achievements under this financing are highlighted in Section II.

Resilience to climate change cuts across all of GFDRR's results pillars and geographical regions, and is in turn supported by all of its specialized thematic programs (see Section I). As such, it is considered a major cross-cutting theme of GFDRR's program. In 2015, GFDRR introduced an improved methodology to account for grants which specifically contributed to resilience to climate change². Using this conservative new methodology, **49 percent of the GFDRR grants that were active in FY15 contained components relevant to resilience to climate change**. These included GFDRR-supported activities in countries exposed to cyclones, storms, floods, landslides, periods of intense rainfall, sea level rise and glacial melt, as well as activities which make an explicit attempt to anticipate future climate change scenarios, and adapt to their inherent uncertainties.

In addition to supporting direct investment in climate change resilience, GFDRR grants also leverage larger World Bank investments, helping bring resilience funding to scale. By providing implementation support and technical assistance, GFDRR grants inform and leverage additional World Bank funding for climate resilience. **In FY15, GFDRR grants and analytical work helped leverage \$1.2 billion in World Bank adaptation financing, representing nearly half of the World Bank's total portfolio for climate change adaptation.**

The importance of resilience to climate change in GFDRR operations is expected to grow further under three emerging new initiatives:

- **SISRI - The Small Island States Resilience Initiative**, launched by the World Bank Group in September 2014, supports Small Island States in reducing climate and disaster risks, through scaled-up investments and dedicated global knowledge adjusted to country needs.
- **CREWS – The Climate Risk and Early Warning Systems Initiative**, launched by the Government of France, aims to strengthen early warning systems in vulnerable countries, in particular in Least Developed Countries and Small Island Developing States.
- **InsuResilience – or the G7 Climate Risk Initiative**, spearheaded by the Government of Germany, which aims to support innovative insurance solutions to manage weather and climate risks.

Section I of this summary review examines the scope of Resilience to Climate Change across the active FY15 GFDRR portfolio. Section II reports on recent achievements. Section III reports on emerging new initiatives supporting climate resilience, Section IV summarizes the remaining challenges, and Section V proposes a way forward and terms of reference for the Advisory Group on Climate Resilience.

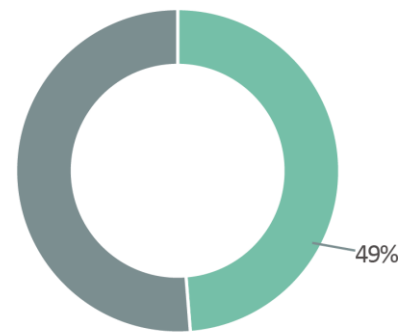
² Starting from FY15, GFDRR classified all of its active grants on whether or not they included components with a specific intent to support climate change adaptation. Only grants that reflected this specific intent were counted as supporting resilience to climate change. This is consistent with the World Bank methodology for tracking climate change co-benefits in economic and sector work, and non-lending technical assistance activities. It is a conservative methodology, since it only captures grants that explicitly address resilience to climate change (and not those which addresses resilience to hydro-meteorological disasters and therefore contribute to adaptation indirectly).

I. Resilience to Climate Change across the GFDRR FY15 Active Portfolio

Resilience to Climate Change is a cross-cutting theme constituting a large portion of the GFDRR portfolio. This is reflected in the rising number of recently approved grants that included support for climate change resilience. In FY15, nearly half of GFDRR grants under implementation – 137 grants totaling \$106 million - contained components relevant to resilience to climate change, in countries exposed to cyclones, storms, floods, landslides, and periods of intense rainfall, sea level rise and glacial melt.

Funding for resilience to climate change is supported by all core GFDRR funds, with the highest proportion amongst the newest funds (see Figure 2). This is to be expected since the multi-donor trust fund (MDTF) includes an older portfolio of grants, when GFDRR’s and donors’ emphasis on climate resilience was not as pronounced. Nevertheless, 45 percent of the MDTF grants included components which contributed to climate resilience.

49% of GFDRR Grants under implementation support resilience to climate change



Total: 280 grants, \$216 million

Figure 1. Proportion of GFDRR Active FY15 Grants Supporting Climate Resilience

Figure 2. Proportion of Active GFDRR Grants Supporting Climate Resilience by Source of Funds

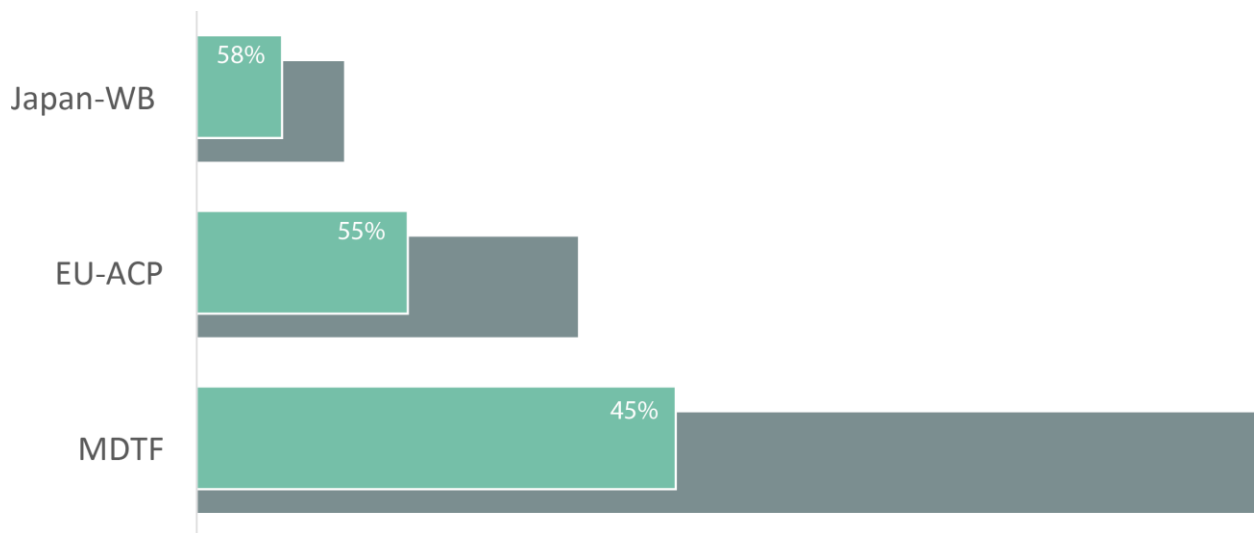
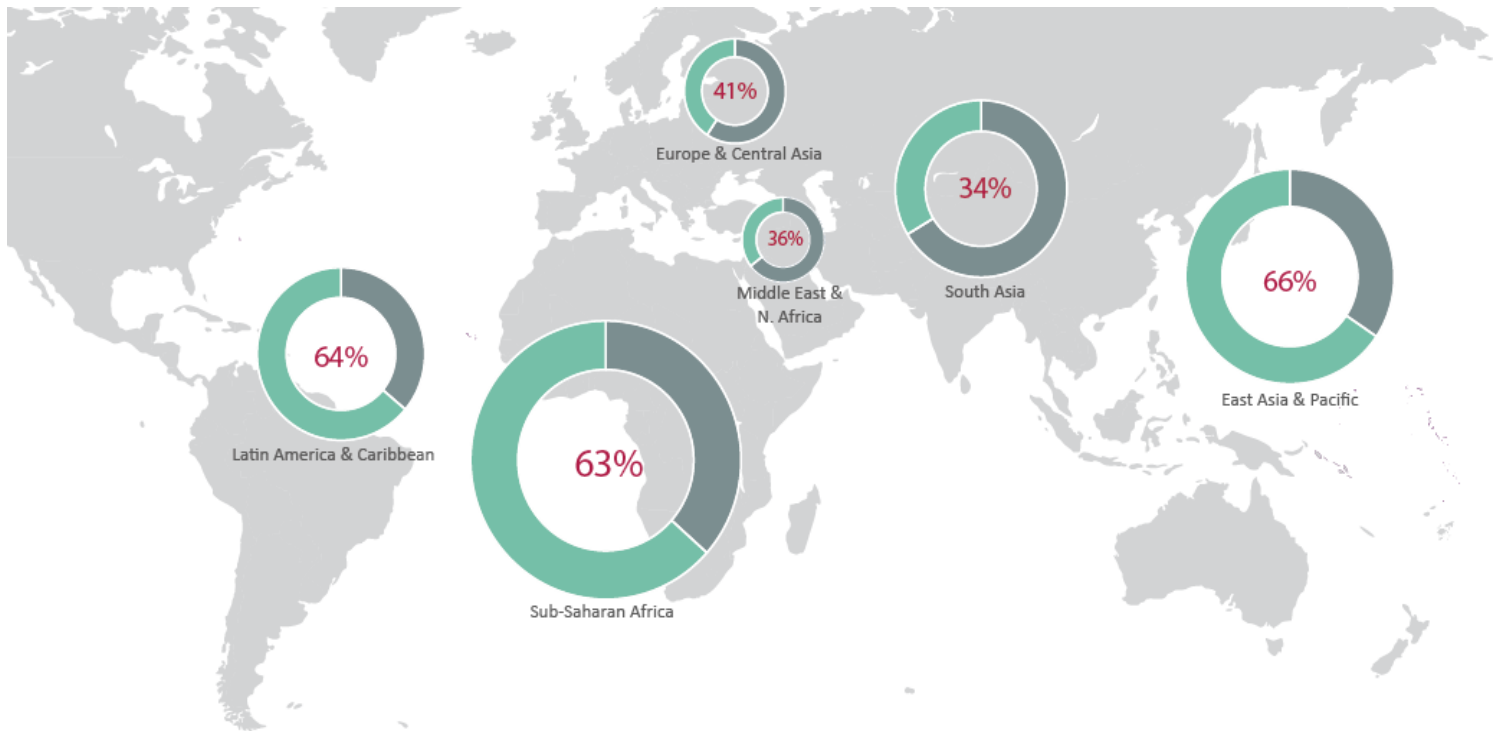


Figure 3. Active GFDRR Portfolio Supporting Climate Resilience by Region



Note: Size of circles indicate relative portfolio amounts

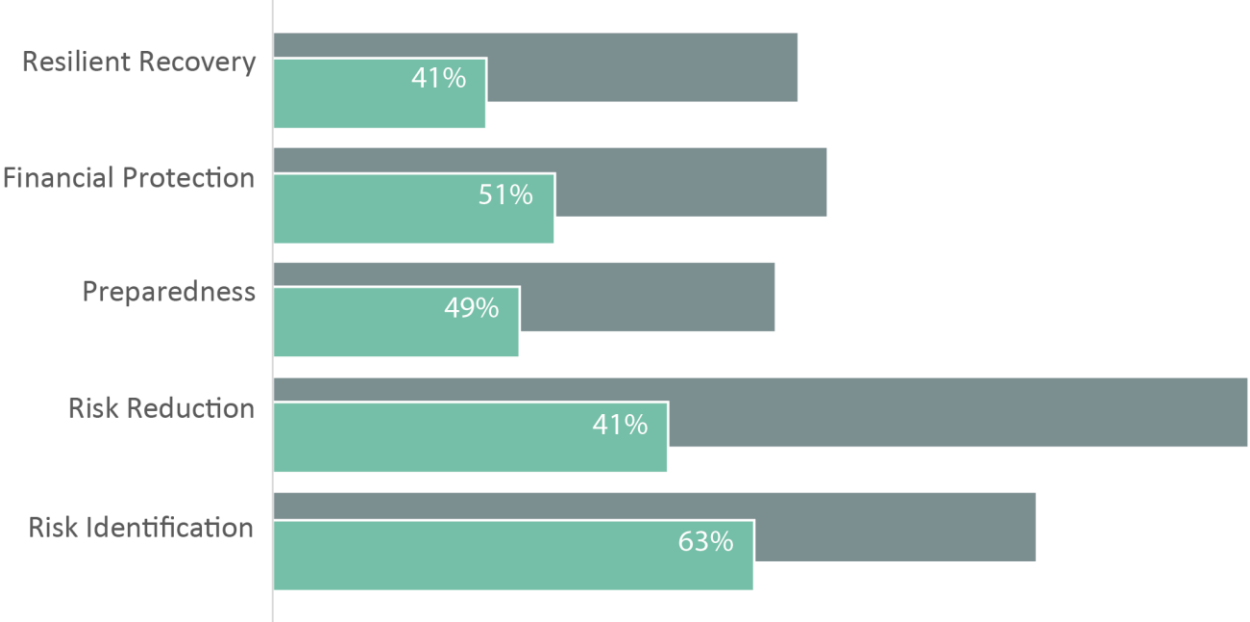
GFDRR activities related to climate resilience are currently being implemented in more than 52 countries. Of all regions, the East Asia and Pacific portfolio shows the largest relative focus on resilience to climate change, followed closely by that of Latin America and Caribbean, and Sub-Saharan Africa. A significant portion of GFDRR grants in both the Latin America and Caribbean and the East Asia and Pacific regions address the unique vulnerabilities of Small Island States, which represent more than 40 percent of the two regions' climate resilience portfolio. In Sub-Saharan Africa, the relative importance of climate resilience reflects the prevalence of hydro-meteorological hazards (which are climate-sensitive) and the close links between disaster risk management and adaptation.

In addition to supporting direct investment in climate change resilience, GFDRR grants also leverage larger World Bank investments, helping bring resilience funding to scale. By providing implementation support and technical assistance, GFDRR grants inform and leverage additional World Bank funding for climate resilience. In FY15, GFDRR grants and analytical work helped leverage \$1.2 billion in World Bank adaptation financing, representing nearly half of the World Bank's total portfolio for climate change adaptation. This does not take into account additional resources leveraged from other donor and government funds.

In FY15, GFDRR grants and analytical work helped leverage \$1.2 billion in World Bank adaptation financing

Amongst its results' pillars, GFDRR support to resilience to climate change contributes most significantly to risk identification and risk reduction. However, it comprises a significant proportion of the GFDRR portfolio across all pillars.

Figure 4. Active GFDRR Portfolio Supporting Climate Resilience by Results Pillars



GFDRR plays a key role in helping countries understand their climate and disaster risks, and develop risk-informed policies and investments. This is an area for which countries are normally reluctant to use scarce development assistance resources. Through its targeted support to risk identification, GFDRR grants are able to generate interest for, and subsequently leverage additional World Bank investments for risk reduction and preparedness, helping countries take into account also slow-onset events and long-term climate change.

GFDRR Thematic Programs Contribution to Resilience to Climate Change

GFDRR’s thematic programs provide **specialized technical teams’ support** to World Bank operations and external clients and partners. These specialized teams also help GFDRR contribute to climate resilience, in ways that are illustrated below.

The Innovation Lab

Support resilience to climate change by integrating climate change considerations into risk assessments and in the development of new, client-focused tools.

Flood Risk Assessments in Europe & Central Asia

The Innovation Lab recently managed the production of flood risk assessments for 32 countries in Europe and Central Asia. The analysis incorporated the output of five climate models that account for multiple scenarios for greenhouse gas emissions and socio-economic development. These risk assessments were used by the Innovation Lab to develop country risk profiles, a product that will be used by the World Bank to promote dialogue on disaster risk management and climate change resilience activities with client countries.

Resilient Cities

Helping cities strengthen their ability to prepare for and adapt to changing climatic conditions, as well as withstand and recover rapidly from disruptions related to natural disasters and other systemic shocks.

Urban Resilience in Vietnam

In June 2014, the Resilient Cities program supported the first CityStrength Diagnostic in Can Tho, Vietnam, which informed a \$250 million urban resilience investment project currently in the pipeline.

Disaster Risk Financing and Insurance

The Disaster Risk Financing and Insurance Program is working to strengthen the financial resilience of governments, businesses, and households against the budgetary and economic shocks caused by natural hazards and other climatic shocks.

Climate Resilience of the Energy Sector in Uruguay

In Uruguay, the DRFI Program advised a \$200 million World Bank loan to protect against climate-related fluctuations in energy prices. The program provided financial analysis that supported payout triggers for contingent investment financing. This work enabled the World Bank to use such a mechanism for the first time as a risk management tool in the energy sector.

Hydromet

Supporting climate resilience through better early warning services and impact based forecasting, allowing decision makers to anticipate the impact of future events, and incorporate this into preparedness and long-term planning.

Resilience to Climate Hazards in Nepal

Early warning is an integral part of climate resilience and effective use of weather radar is particularly important. To help with this, the Hydromet Program supported a Pilot Program for Climate Resilience in Nepal to improve the accuracy and timeliness of weather and flood forecasts and warnings for climate-vulnerable communities.

Inclusive Community Resilience

The Inclusive Community Resilience program aims to strengthen community level resilience at a large scale by leveraging country investment programs that put resources directly in the hands of poor households and communities.

Climate Resilient Social Protection

Amongst its contribution to climate resilience is the incorporation of adaptation strategies into social protection and community driven development programs, such as done in Ethiopia, Sahel and the Nile Basin.

Safer Schools

Supporting resilience to climate change by integrating future climate scenarios (such as expected increases in maximum wind speed and flooding) into improved safety standards.

Climate Resilient Schools

Launched by GFDRR in 2014, the Safer Schools Program works to make school facilities and the communities they serve more resilient by reducing the physical impacts of climatic hazards on school infrastructure, and enable them to serve as safe shelters during extreme events.

Resilient Recovery

Seeks to provide tailored technical expertise and knowledge management to support post-disaster assessments and recovery frameworks, as well as help mainstream DRM and climate resilience into development policies.

Flooding in Mozambique

Following severe flooding in 2013, the Government of Mozambique mobilized resources from development partners to help communities reconstruct livelihoods and repair essential roads, particularly the main north-south link. To assist with this need, GFDRR has supported a recovery project focused on resilient transport infrastructure. In FY15, over 520 km of roads were rehabilitated through this project, a significant increase over the 13 km rehabilitated during FY14.

II. IN FOCUS: Recent Activities Supporting Resilience to Climate Change

GFDRR grants supporting resilience to climate change fall into the following categories:

- a) **Technical and Implementation Assistance Grants:** Activities that apply technical knowledge, analysis or operational tools to address climate resilient challenges within an operational context.
- b) **Just-in-time Capacity Building and Advice:** These are small grants (less than US\$50,000) for rapidly deployed specialized advice or training requested by a client country, to help them address specific climate resilience or weather-related disaster risk management issues.
- c) **Analytical Products:** Funding high priority analytical work (including Best Practice Notes), emphasizing climate resilience.

Below is a summary of recent grants in each of these categories, supported by the Swiss Agency for Development and Cooperation Global Program for Climate Change (SDC-GPCC) (*see Box 3*). This dedicated support has enabled GFDRR to increase its engagement in climate resilience, and is gradually promoting better synergies between disaster risk management and climate adaptation in World Bank operations.

Targeted Technical Assistance

Early 2015 marked the conception phase for a technical assistance project aimed at **strengthening the capacity of national hydrological services in Sub-Saharan Africa**. Now underway, this project aims to improve the capacity of five countries – **Cameroon, Madagascar, Senegal, Tanzania, and Zambia** - to produce and communicate hydrological information and help users access and use data more effectively. This includes also improving the governments' ability to inform, plan, and make cost-effective investments in climate resilient development. Gaining added urgency as Sub-Saharan Africa braces for the effects of a strong El Niño, this project will achieve its goals through developing national hydrological services modernization plans and creating national hydrology data users' groups.

Grants in the pipeline include: (1) strengthening trans-boundary climate information across Central Asian countries (Kazakhstan, Kyrgyz Republic, Tajikistan and Uzbekistan); (2) incorporating climate adaptation and disaster risk management into spatial and sector planning in high risk areas of Madagascar; and (3) assistance to landslide and flood management in Bhutan and Nepal.

Box 3: The SDC Contribution to Resilience to Climate Change at GFDRR

In November 2014, the Swiss Agency for Development and Cooperation Global Program for Climate Change (SDC-GPCC) contributed CHF 14,450,000 (\$14.9 million equivalent) to the GFDRR Multi-Donor Trust Fund for specific support to resilience to climate change, for a period of four years (FY15-18). Eligible activities have to specifically support building resilience to weather-related disasters and associated climate change risks, in addition to meeting MDTF eligibility criteria. For technical assistance and just-in-time capacity building and advice, activities should also contribute to strengthened institutions and capacity building of stakeholders.

As of 30 September 2015, the SDC contribution to Resilience to Climate Change comprised a portfolio of 13 grants, of which 2 were completed, 7 were ongoing, and 4 were in the pipeline (see Table below). Since funding was activated in December 2014, the reporting below compares achievements during the first 9 months of calendar year 2015 with the planned activities for the first year of implementation. The slower than expected uptake of just-in-time grants was due to lack of familiarity with this new instrument, but demand has recently increased and is expected to accelerate in future years. Results against the GFDRR framework will be reported once the portfolio is more mature.

SDC Contribution to Resilience to Climate Change Cross-Cutting Theme Summary of Key Achievements in 2015

	Year 1 Target	Achieved to Date (January to September 2015)			Total to Date
		Completed	Ongoing	Pipeline	
1. Targeted Technical Assistance	4	--	1	3	4
2. Just-in-Time Capacity Building	20	2	5	BD ¹	7
3. Analytical Products	1	--	1	1	2
Total Grants	25	2	7	4	13
Commitments to date (US\$)		58,104	962,550		1,020,654

¹ BD- based on country demand

“Completed” grants are those for which the main approved activity has been completed; “ongoing” grants are those which have been formally approved by the Secretariat; “pipeline” grants are those that are being considered for funding within the next 3-4 months, but still have to be formally approved by the Secretariat. Commitments under pipeline grants are expected to total \$3.2 million, indicating a rapidly expanding demand.

Just-in-Time Capacity Building and Advice

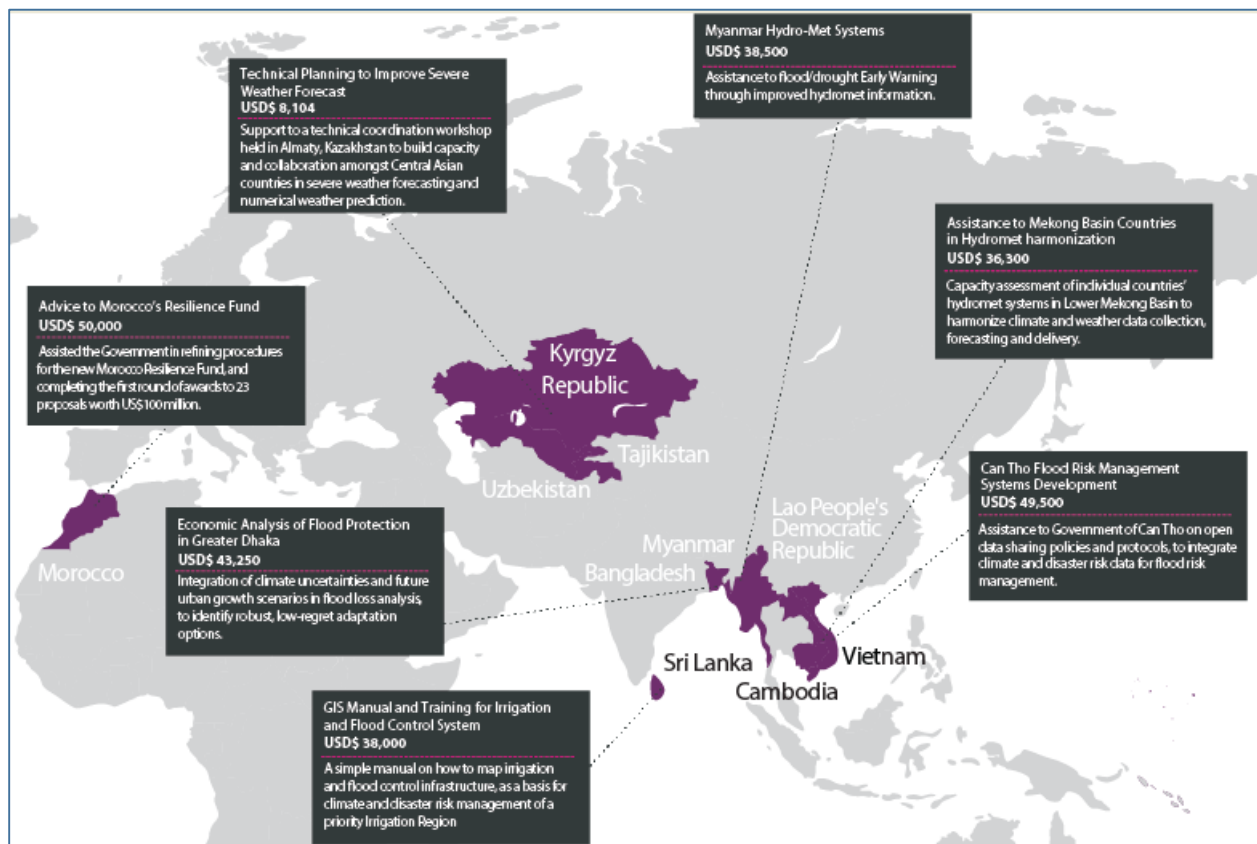
This new instrument was introduced by GFDRR in 2015 under the Resilience to Climate Change cross-cutting theme, and has been mostly supported by SDC to date. It provides rapid, demand-based expert advice or training to partner countries, in cases where waiting for the normal processing time of a technical assistance grant would not be feasible or lead to a loss of opportunity to influence critical policy reforms.

As of September 30, 2015, GFDRR had supported seven Just-in-Time grants (see Figure 5 and Annex A), of which two – Advice to Morocco Resilience Fund and Technical Planning to Severe Weather Forecast in Central Asia – have been completed. The first grant helped the Government of **Morocco formulate an emerging resilience fund**, assisting the Moroccan Ministry of Interior in its first open call for proposals related to climate and disaster resilience activities. The expert mobilized under the grant helped the government to refine criteria for project selection and evaluation of the 90 proposals received, of which

23 were selected for funding totaling \$100 million. This enabled a proof of concept for the resilience fund, providing a basis to scale up under a newly planned World Bank operation. With the support of the Center for Mediterranean Integration, the Moroccan experience was showcased at the Mediterranean Climate Conference, organized in June 2015 in Marseille and attended by 500 people. It was also included in the first draft of the Positive Solutions Mediterranean Agenda, which will contribute to United Nations Climate Change Agreement negotiations (CoP21) in Paris in late 2015.

The second Just-in-Time support involved a technical coordination workshop held in Almaty, Kazakhstan in April 2015, to **build capacity amongst Central Asian countries** (Kazakhstan, Kyrgyz Republic, Tajikistan, Uzbekistan) **in severe weather forecasting and numerical weather prediction**. The workshop, also supported by the Regional Center of Hydrology of the Executive Committee of the International Fund for Saving the Aral Sea, agreed on a series of capacity building investments and trainings to leverage global forecasts available from leading institutions (such as the European Centre for Medium-Range Weather Forecasts). It is also driving regional numerical weather prediction provided by UzHydromet as the World Meteorological Organization (WMO) Regional Specialized Meteorological Center.

Figure 5. Just-in-Time Support to Partner Countries approved in January to September 2015



Analytical Products

During 2015, GFDRR approved an analytical product aimed at **strengthening the monitoring and evaluation of resilience-building investment operations**, funded through the SDC contribution. This work seeks to produce a more robust set of indicators across World Bank climate resilience operations,

harmonized with those of other key development institutions and global climate funds - such as the Adaptation Fund, the Pilot Program for Climate Resilience and the Green Climate Fund. A second analytical product, currently in the pipeline, contributes to the World Bank's flagship *Poverty and Climate Change* report through enhancing two tools aimed at helping national decision-makers choose the best policies to assist the poor, under multiple climate change and development scenarios (see Box 4).

Box 4 –MONITORING AND EVALUATION FOR RESILIENCE BUILDING OPERATIONS AND IMPACT ASSESSMENT OF CLIMATE CHANGE ON POVERTY

GFDRR's analytical support to **strengthening the monitoring and evaluation of resilience-building operations**, supported by SDC, responds to increasing demand from donors and countries to harmonize how development institutions like the World Bank measure climate and disaster resilience at the project-level.

The program held its first workshop from September 23-24, 2015 in Washington, D.C., gathering 70 practitioners from development institutions, foundations, multilateral development banks, research institutions and governments, including the Asian Development Bank, the Global Environmental Facility, the Inter-American



Development Bank, the Rockefeller Foundation, the United Kingdom's Department for International Development the World Bank, the World Resources Institute and country governments. The two days discussion focused on improved monitoring and evaluation for resilient-related in investment operations, as well as helped inform dialogue on harmonization of methodologies across countries and their development partners.

A related analytical product, currently in the pipeline, will be part of the World Bank flagship report **on Poverty and Climate Change**, and focus on two major outputs: (a) refinement of a socio-economic resilience index; and (b) application of robust decision-making to examine the potential impacts of climate change on poverty.

The first tool combines data on hazard, population, and asset vulnerability with a range of socio-economic variables to provide a resilience index per country. This allows decision-makers to verify what policy changes might contribute the most to reducing losses to welfare and improve resilience among the most vulnerable. The tool has been applied as a pilot to river flooding in 90 countries, but needs further refinement at the country level, as well as application to other climate-relevant hazards, like coastal storm surge. The objective is guide policy discussions and possibly influence policy choices under innovative financial instruments, such as the newly proposed Debt-for-Resilience and Nature swap, and help to monitor the impact of related policies over the long-term.

The second tool uses a framework inspired by robust decision-making to build scenarios examining the potential impact of climate change on poverty. It explores how climate change would affect development in a set of socio-economic scenarios, chosen to cover a broad range of possible "futures" to assess the potential magnitude of climate change impacts. The goal is to better understand how climate change's impact on poverty depends on socio-economic development, estimate the potential impacts in "bad" scenarios, and explore possible policy options to minimize this risk. The impacts of climate change on poverty are simulated through a number of sectors – agriculture,

health, labor productivity, and disasters caused by natural hazards. As such, the policy recommendations provided are cross-cutting and relevant for a number of government agencies.

III. Emerging Initiatives

GFDRR is working with development partners on three emerging initiatives, which support resilience to climate change:

- (1) **SISRI** - The Small Island States Resilience Initiative
- (2) **CREWS** - Climate Risk and Early Warning Systems Initiative
- (3) **InsuResilience** – Group of 7 Climate Risk Initiative

The Small Island States Resilience Initiative (SISRI)



- The Small Island States Resilience Initiative (SISRI) was launched by the World Bank, with support from GFDRR, at the UN Small Island Developing States Conference in Samoa in September 2014, to support Small Island States (SIDS) in reducing climate and disaster risks to their people, economies and ecosystems. SISRI acts as an umbrella programmatic framework, and is customized to the needs of each country.
- SISRI supports scaled-up investments, technical assistance and policy reforms, including innovative new instruments such as a debt for resilience and nature swap. It relies on an already considerable program of World Bank assistance to resilience in SIDS, averaging US\$180 million a year.
- To meet their most urgent needs for adaptation and risk reduction, SIDS will need increased levels of financing. The current

- pipeline envisages assistance to 25 countries in 2016-18, with a baseline financing of US\$570 million, which could leverage up to US\$1.3 billion under scaled-up financing. Phase I of SISRI has been submitted to the Green Climate Fund.
- SISRI is supported by a global team specialized on the needs of SIDS, currently comprising 45 staff from multiple technical disciplines and regions
- To achieve a scaled-up scenario, GFDRR and the World Bank are developing a core program of technical support in cooperation with partners. This assistance will focus on dedicated operational assistance to SIDS, establishing a global community of practice specialized on their needs, and enhancing measurement of resilience results.

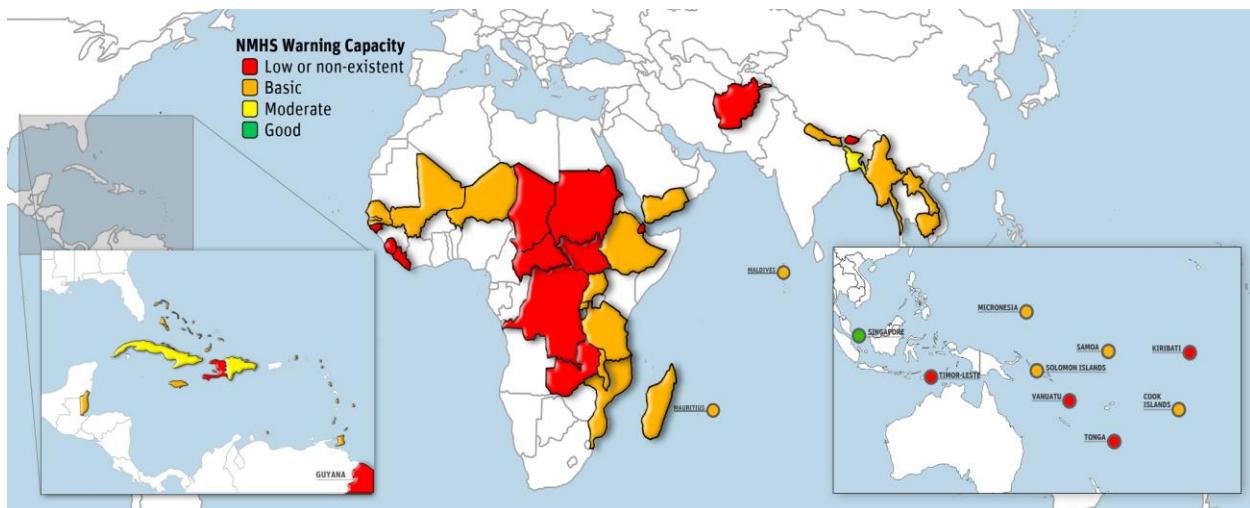
CREWS - Climate Risk and Early Warning Systems Initiative

While many times, losses from hydro-meteorological disasters could have been avoided if operational early warning systems were in place, about two-thirds of the Least Developed Countries and Small Island States lack access to operational systems that could warn populations of potentially catastrophic events. To address this challenge, the Government of France, in partnership with the World Meteorological Organization, UNISDR, GFDRR, and the World Bank is working to operationalize the Climate Risk and Early Warning Systems (CREWS) initiative.

The long-term goal of CREWS is to support early warning systems in vulnerable countries to try to fully cover the global population exposed to extreme climate events by 2020. Over the medium-term, CREWS aims to strengthen multi-hazard early warning systems to generate and communicate more effective early warnings and risk information to protect lives, livelihoods and assets in Least Developed Countries and Small Island Developing States.

To do that, CREWS will increase the linkages between global and regional WMO centers, as well as improve the technical and operation support to national meteorological and hydrological services and early-warning systems. It will also strengthen the links between early warning and emergency management, and the use of risk information in risk reduction.

Figure 6 - Early Warning Capacity of National Hydro-Meteorological Services in Selected Least Developed Countries and Small Island States



(Source: GFDRR based on WMO data)

InsuResilience - G7 Climate Risk initiative

In the context of the G7 German presidency, GFDRR has supported discussions around a proposed G7 Climate Risk initiative, InsuResilience, aiming to enhance climate risk insurance access in Least-Developed and low income countries. This initiative includes potential support to strengthen the Caribbean Catastrophe Risk Insurance Facility (CCRIF)³, the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI)⁴ and other innovative financing protection mechanisms. This set of rapid actions is expected to be announced before the CoP21 meeting in Paris.

How do these different initiatives come together?

While SISRI is a programmatic framework specializing on SIDS, similar to GFDRR's country programs, CREWS and InsuResilience focus on thematic areas, requiring integration at the regional and global levels to produce economies of scale.

GFDRR's role is to identify country-specific needs, as well as target funding and specialized assistance to meet these needs in a programmatic fashion. This helps countries combine sources of funding to build resilience over the long-term.

For example, a Small Island State like Vanuatu could benefit from baseline financing through GFDRR's Multi-Donor Trust Fund or the ACP-EU Program, as well as scaled-up financing through SISRI for priority risk reduction support. Depending on needs, a country could also benefit from strengthened early warning systems through CREWS, and join a pooled insurance scheme through InsuResilience. The national program would remain Vanuatu's own, with the advantage of following harmonized procedures across multiple sources of funding. The recently approved Pacific Resilience Program is an example of such a program, benefiting from six different financing and technical assistance sources.

³ <http://www.ccrif.org/>

⁴ <http://pcrafi.sopac.org/>

IV. Remaining Challenges

Looking ahead, there are a number of remaining challenges that need to be addressed for resilience to climate change to grow within the GFDRR portfolio:

1. **Resilient livelihoods.** While disaster risk management has traditionally focused on physical assets, climate change is also affecting livelihoods and resources – such as the crops, water supply, and fishing grounds on which vulnerable households often depend. To address this challenge, GFDRR will need to increasingly reach out to Global Practices assisting partner countries in promoting climate-smart agriculture, water management, and natural resources management.
2. **Addressing future uncertainties.** Climate change brings large uncertainties and alterations to the historical patterns of natural hazards which have traditionally been used in probabilistic risk assessment. Thus, there is a need to use more dynamic risk assessments, and to adopt more robust methods of decision making that take future uncertainty into account – methodologies that are currently being promoted by GFDRR’s Innovation Lab and the Climate Change Group Chief Economist’s team.
3. **Flexible financing.** Risk reduction remains the largest financing gap in promoting resilience to climate change. GFDRR needs to continue to have access to flexible financing to channel funding for climate resilience based on opportunities to make an impact, as well as country demand. This highlights the importance of non-earmarked funding under the Multi-Donor Trust Fund.
4. **Institutions.** GFDRR’s primary counterparts at the national level are often Disaster Management Agencies, whose mandate can be ill-suited to promote resilience to climate change. Planning agencies, with their broader inter-sectoral mandate, are often better placed to promote resilience across development planning, and GFDRR assistance is increasingly being extended to them. This aspect remains a challenge, however, in countries where mandates remain rigidly sectoral.
5. **Visibility and results.** The process of building resilience to climate change, involving changes in risk behavior, is often lengthy, requiring intensive staff oversight with long-term results that are not easy to predict or measure. These characteristics make it especially challenging for development partners to support, as they often need shorter-term results to satisfy their domestic constituencies. GFDRR is addressing this challenge by promoting further development of resilience indicators (see Box 4) as well as broader use of results-based financing instruments in adaptation (such as its recent support to the Morocco Integrated Disaster Risk Management and Resilience Program).

V. Terms of Reference for the Advisory Group on Climate Resilience

Recognizing the large and increasing importance of resilience to climate change across the GFDRR portfolio, GFDRR held its first meeting of the **Advisory Group on Climate Resilience**, in Berlin, on October 26, 2015. Meeting participants broadly agreed to the establishment of the Advisory Group and its Terms of Reference (below), while noting that the Advisory Group should also provide strategic guidance to its members on how to improve and render more efficient the international processes and financing for adaptation.

Terms of Reference for the Advisory Group on Climate Resilience

1. The Advisory Group (AG) consists of **interested Consultative Group (CG) members**, complemented by **climate adaptation specialists and external experts** brought by CG member organizations based on need;
2. It should remain a **relatively small and informal** group (<20 members), allowing for flexibility in its membership and operation;
3. A core team from within the AG (max. 3-5 persons), including an identified person/team at GFDRR headquarters in Washington (“engine”), will be charged with the preparation and management of the Advisory Group meetings (physical and virtual), to ensure regular exchange with and between group members and, more generally, to bring the Resilience to Climate Change forward.
4. The AG **will meet at least once a year** at the margins of the Fall CG, as well as virtually if needed.
5. The Advisory Group will:
 - (a) **Review the GFDRR draft Annual Work Plan and Annual Report**, and accompanying progress reports on the Resilience to Climate Change cross-cutting theme, with a view of advising the CG and Secretariat on ways to improve linkages between disaster risk management and climate change adaptation, and gradually strengthen GFDRR’s resilience to climate change focus;
 - (b) **Exchange information on the progress of international policy discussions** which may influence GFDRR’s portfolio, and to which GFDRR may contribute (such as financing for adaptation, harmonization of disaster risk management and loss and damage agendas, and the Green Climate Fund);
 - (c) **Share operational experiences** that may be relevant to the GFDRR portfolio supporting resilience to climate change, or where GFDRR’s experience may be relevant to that of its partners;
 - (d) **Monitor the geographical focus, result pillars and leveraging impact** of the GFDRR portfolio as it applies to resilience to climate change, and propose strategic adjustments if needed;
 - (e) Help GFDRR oversee and/or promote **thematic programs or emerging initiatives**;
 - (f) Ensure that GFDRR’s support to resilience to climate change **remains country driven**;
 - (g) Perform other tasks, as needed.
6. The Advisory Group **will not have a governance role**. This responsibility would remain with the CG.

Annex A – SDC Support to Resilience to Climate Change Cross-Cutting Theme

Project Portfolio and Summary of Commitments to date (as of September 30, 2015)

List of Grants Completed

Country/region	Title	Summary	Implementing Partners/Main beneficiaries	Total amount (US\$)
Outcome 2 – Just in time capacity building and Advice				
Kazakhstan, Kyrgyz Republic, Tajikistan, Uzbekistan – Europe and Central Asia	Technical planning for Improving Severe Weather Forecasting in Accordance with the Severe Weather Forecasting Demonstration Project approach for Central Asia	This supported a technical coordination workshop held in Almaty, Kazakhstan to build capacity in Central Asia in severe weather forecasting and numerical weather prediction. It also helped ensure that the results of the Severe Weather Forecasting Demonstration Project can be shared amongst national services.	World Bank TajikHydromet KyrgyzHydromet UzHydromet KazakhHydromet WMO, RosHydromet	8,104
Morocco – Middle East and North Africa	Advisory Services and Capacity Building for Morocco’s Emerging “Resilience Fund”	This activity contributed to the establishment of a Fund to Combat the Effects of Natural Disasters. This resilience fund focuses on financing projects to mitigate the impact of the different hazards, in particular flood and droughts, through both structural and non-structural measures. This specialized assistance helped the Government of Morocco operationalize the first call for proposals, leading to the approval of a US\$100 million portfolio of 23 projects.	World Bank Ministry of Interior	50,000

List of Grants under Implementation

Country/region	Title	Summary	Implementing Partners	Total amount (USD)
Outcome 1 - Technical and Implementation Assistance Grants				
Madagascar, Zambia, Senegal, Cameroon, and Tanzania – Sub-Saharan Africa	Strengthening the capacity of National Hydrological Services in Sub-Saharan Africa	The technical assistance aims to strengthen the capacity of National Hydrological Services (NHS) to produce, translate and communicate hydrological information. It also aims to help end users access this information, so as to strengthen early warning, and inform investments in climate resilient development.	World Bank National Hydrological Services of participating countries	450,000
Outcome 2 – Just in time capacity building and Advice				
Sri Lanka- South Asia	Development of a Geographical Information Database and capacity building to better manage Irrigation and Flood Control Systems	The proposed assistance will help to; a) develop a simple manual on how to map irrigation and flood control infrastructure and build them in a GIS; b) conduct a series of training programs on mapping irrigation and flood control infrastructure; and c) fully map one Irrigation Region	World Bank Farmers and Irrigation Department engineers	50,000
Bangladesh – South Asia	Economic Analysis of Large-Scale Flood Protection Infrastructure in Greater Dhaka	The assistance will carry out an economic analysis of large-scale flood protection infrastructure investment in Greater Dhaka. The analysis will quantify losses related to flooding events, taking into account future climate change and urban growth scenarios, to identify the most resilient, low regret options.	World Bank	43,250
Cambodia, Lao, Vietnam – East Asia and Pacific	Mekong Integrated Water Resources Management Program: Hydro-meteorological Expertise	The assistance will provide specialized technical assessments of the current capacity of each Lower Mekong Basin (LMB) hydromet systems in order to help guide countries to build up and unify their data collection, forecasting and service delivery	World Bank Mekong River Commission + countries	36,300
Myanmar – East Asia and Pacific	Myanmar Hydro-meteorological Systems and Disaster Risk Management Operations	This assistance will provide technical input to (a) assessing the capacity and training needs of the Department of Meteorology and Hydrology; (b) design solutions for modernization of hydro-meteorological systems, and (c) bring in knowledge on data-collection and application of hydro-meteorological information for flood/drought early warning systems	World Bank Department of Meteorology and Hydrology Ministry of Transport	38,500
Vietnam – East Asia and Pacific	Can Tho flood risk management systems development	This assistance will develop a strategy and roadmap that lays out the data sharing policies, protocols, technology, capabilities and resources required to develop an open and integrated climate and disaster risk data platform	World Bank Can Tho: local government and population	49,500
Outcome 3- Analytical Products				
Global	Resilience Results Monitoring & Evaluation	This analytical product seeks to: (a) harmonize frameworks and methodologies for monitoring and evaluation of resilience projects; (b) develop more systematic results monitoring of resilience-building operations through a set of project-level results indicators, targeted technical support and a toolkit; and (c) increase the application of impact evaluation studies to resilience-building operations	World Bank project teams and clients; Other Development Institutions and Multilateral Development Banks	295,000

List of Grants in pipeline

Country/region	Title	Summary	Implementing Partners	Total amount (USD)
Outcome 1 - Technical and Implementation Assistance Grants				
Madagascar – Sub-Saharan Africa	Climate Change Adaptation and Disaster Risk Reduction for Sustainable Development in Madagascar	This technical assistance would support mainstreaming of disaster risk management and climate change adaptation into the country's social economic development, with specific focus on regions and sectors most at risk (proposed area of focus is plain of Antananarivo).	World Bank	920,000
Kazakhstan, Kyrgyz Republic, Tajikistan, Uzbekistan/ East Europe and Central Asia		This cooperative approach will help strengthen trans-boundary climate information generation and sharing and assist participating governments to assess and monitor climate risks primarily to water resources management in mountainous basins	World Bank Swiss Agency for Development and Cooperation, World Meteorological Organization, International Fund for Saving the Aral Sea	1,200,000
Nepal and Bhutan – South Asia		This proposed technical assistance would support (a) the expansion of current landslide risk assessments in both Nepal and Bhutan, and (b) engagement on climate and disaster risk across the two countries. In Nepal, work will support flood management, national risk assessment and Champions for resilience. In Bhutan, it is expected to help inform a program of activities in climate adaptation and disaster risk management	World Bank Nepal National Risk Reduction Consortium Department of Disaster Management National Environmental Commission	700,000
Outcome 3- Analytical Products				
Global	Tools to measure socio-economic resilience to natural disasters and climate change impacts on poverty, and to identify policy priorities	The objective of this analytical product is to do an in-depth application of two socio-economic tools to measure socio-economic resilience, quantify the potential impacts of climate change on poverty, and help prioritize policies to minimize the impact of climate change and natural disasters on the poor. This would be an accompanying piece to the World Bank's flagship report on Poverty and Climate Change. The tools would be applied to a minimum of three countries each, based on country demand.	World Bank National and Sub-national governments	350,000