

# GEF FINANCING ADAPTATION ACTION



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## *The Global Environment Facility*

(GEF) unites 178 member governments – in partnership with international institutions, nongovernmental organizations (NGOs), and the private sector – to address global environmental issues. An independent financial organization, the GEF provides grants to developing countries and countries with economies in transition for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants. These projects benefit the global environment, linking local, national, and global environmental challenges, and promoting sustainable livelihoods.

Established in 1991, the GEF is today the largest funder of projects to improve the global environment. The GEF has allocated \$7.4 billion, supplemented by more than \$28 billion in cofinancing, for more than 1,980 projects in more than 160 developing countries and countries with economies in transition. Through its Small Grants Programme (SGP), GEF has also made

more than 7,000 small grants directly to nongovernmental and community organizations.

The GEF partnership includes ten agencies: U.N. Development Programme (UNDP); U.N. Environment Programme (UNEP); World Bank; U.N. Food and Agriculture Organization (FAO); U.N. Industrial Development Organization (UNIDO); African Development Bank (AfDB); Asian Development Bank (ADB); European Bank for Reconstruction and Development (EBRD); Inter-American Development Bank (IDB); and International Fund for Agricultural Development (IFAD). The Scientific and Technical Advisory Panel (STAP) oversees the technical and scientific quality of GEF's policies and projects.

### **GEF and Global Environmental Conventions**

The GEF is a financial mechanism for implementing the international conventions on biodiversity, climate



change, and persistent organic pollutants. The GEF is also a financial mechanism for the Convention to Combat Desertification and collaborates closely with other treaties and agreements.

## A Sample of GEF's Impact on Climate Change

### Mitigation

- More than 1 million rural households are powered by solar home systems using photovoltaic technology. Wind-power generation capacity also increased from zero to over 1,700 megawatts – enough to power more than 5 million typical homes. India alone now has 40,000 solar street-lights.
- Five million energy efficient lights have been installed. In Poland, the number of households using compact fluorescent lighting increased from 11 percent to 20 percent.
- GEF energy projects approved in 2003-2006, which include renewable energy and energy efficiency projects, will directly reduce emissions of greenhouse gases by 388 million tons over their lifetime. These projects are also conservatively estimated to have an indirect impact: 1,726 to 3,176 million tons of greenhouse gas emissions will be avoided over the lifetime of the investments.

### Adaptation

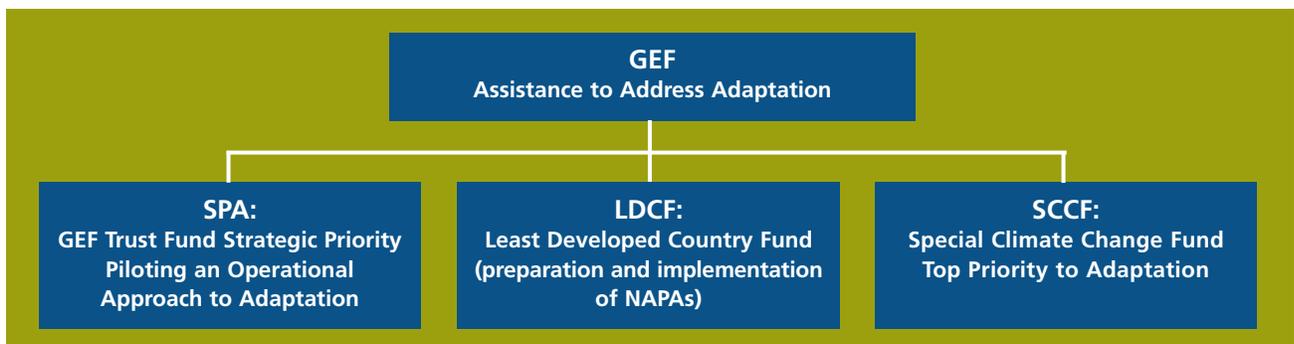
- The GEF has provided \$280 million for adaptation to climate change through the Strategic Priority for Adaptation, Least Developed Countries Fund, and the Special Climate Change Fund.

## HISTORY OF GEF SUPPORT FOR ADAPTATION

Following guidance from the U.N. Framework Convention on Climate Change (UNFCCC), the GEF originally adopted a “staged approach” toward adaptation. Stage I encompasses assessments and Stage II focuses on capacity building.

Also of note is that GEF has financed vulnerability and adaptation assessments through its support of National Communications under the UNFCCC. Since its inception, the GEF has disbursed about \$120 million for National Communications, of which a significant amount is allocated by the countries to vulnerability and adaptation assessments.

In addition, the GEF-financed projects under Stages I and II have built the capacities of developing countries, and especially small island states, to gather and process data. The projects have also helped establish



**Table 1. Projects Implemented by GEF under Stage II**

| <i>Project Title</i>   | <i>Implementing Agency</i> | <i>GEF Funding (\$million)</i> |
|--|----------------------------|--------------------------------|
| Caribbean Planning for Adaptation to Climate Change (CPACC)  | World Bank                 | 6.5                            |
| Pacific Islands Climate Change Assistance Programme (PICCAP)                                       | UNDP                       | 3.44                           |
| Mainstreaming Adaptation to Climate in the Caribbean (MACC)  | World Bank                 | 5.345                          |
| Capacity Building for Stage II Adaptation to Climate Change in Central America                     | UNDP                       | 3.315                          |
| Assessments of Impacts of and Adaptation to Climate Change in Multiple Regions and Sectors (AIACC) | UNEP                       | 7.5                            |
| China: Targeted Research Related to Climate Change   | UNDP                       | 1.72                           |

the institutional and local capacities to move to the next step and start implementing adaptation projects on the ground.

The GEF received the mandate from the Climate Convention in 2001 to finance adaptation projects on the ground. Thanks to this guidance, the GEF began piloting adaptation action under three financing avenues: 1) Strategic Priority on Adaptation (SPA), a \$50 million pilot within the GEF trust fund; 2) Least Developed Countries Fund (LDCF) whose resources are accessible only to the 49 Least Developed Countries (LDCs); and 3) Special Climate Change Fund (SCCF), whose resources are accessible to all developing countries. The funds integrate adaptation measures into development practices.

## FINANCING ADAPTATION ACTION: THE NEW CLIMATE CHANGE FUNDS

### Strategic Priority on Adaptation

The SPA was a groundbreaking initiative, not only within the GEF context, but also worldwide, because until that time multilateral and bilateral organiza-

tions had mainly focused on research, assessments, and screening tools, rather than on-the-ground adaptation. Through this program, the GEF has financed the first concrete adaptation projects, implementing measures for the specific purpose of reducing vulnerability and increasing the adaptive capacity of vulnerable communities and the ecosystems on which their lives depend.

The following examples illustrate the types of adaptation projects that the GEF has financed through the SPA.

**Caribbean Islands (Dominica, St. Lucia, St Vincent, and Grenadines).** Small island states are highly vulnerable to the impacts of climate change because of their susceptibility to sea level rise, the location of critical infrastructure in coastal areas, and given that most of the local populations live in coastal zones. This project aims to support Dominica, Saint Lucia, St. Vincent, and Grenadines in their efforts to implement specific pilot adaptation measures addressing the impacts of climate change on the natural resource base of the region. It focuses on biodiversity and sustainable land management along coastal areas and sustainable use of fresh water resources. The pilot projects will form the foundation for learning and adaptive capacity building not only in the project countries, but across the Caribbean region.

Table 2. GEF Projects under the Strategic Priority on Adaptation

| <i>Country/<br/>Region</i>   | <i>Project Title</i>  | <i>Agency</i> | <i>Project Grant<br/>(approved)</i> | <i>Co-financing<br/>Total (Approved/<br/>Expected)</i> |
|--|---|---------------|-------------------------------------|--|
| Kiribati   | Kiribati Adaptation Program – Pilot Implementation Phase  | World Bank    | 1,800,000                           | 4,800,000  |
| Dominica,<br>St. Lucia,<br>St. Vincent and<br>Grenadines                             | Implementation of Pilot Adaptation Measures in Coastal Areas of Dominica, St. Lucia and St. Vincent & the Grenadines                                      | World Bank    | 2,100,000                           | 3,370,000  |
| Colombia   | Integrated National Adaptation Plan: High Mountain Ecosystems, Colombia's Caribbean Insular Areas and Human Health (INAP)                                 | World Bank    | 5,400,000                           | 9,500,000  |
| Argentina,<br>Bolivia, Brazil,<br>Paraguay,<br>Uruguay                               | Sustainable Management of the Water Resources of the la Plata Basin with Respect to the Effects of Climate Variability and Change                         | UNEP          | 1,000,000                           | 50,561,962   |
| Global   | Adaptation Learning Mechanism: Learning By Doing  | UNDP          | 723,600                             | 645,000  |
| Hungary  | Lake Balaton Integrated Vulnerability Assessment, Early Warning, and Adaptation Strategies  | UNDP          | 985,000                             | 3,090,000  |
| Kenya,<br>Madagascar,<br>Mozambique,<br>Rwanda,<br>Tanzania                          | Integrating Vulnerability and Adaptation to Climate Change into Sustainable Development Policy Planning and Implementation in Southern and Eastern Africa | UNEP          | 1,000,000                           | 1,265,000  |
| Mozambique   | Zambezi Valley Market Led Smallholder Development   | World Bank    | 1,520,000                           | 21,200,000   |
| Namibia  | Adapting to Climate Change through the Improvement of Traditional Crops and Livestock Farming   | UNDP          | 960,000                             | 5,795,806  |
| Senegal,<br>Gambia,<br>Guinea-Bissau,<br>Mauritania,<br>Cape Verde                   | Adaptation to Climate Change – Responding to Coastline Change and its Human Dimensions in West Africa through Integrated Coastal Area Management          | UNDP          | 3,300,000                           | 9,729,517  |
| Sri Lanka  | Participatory Coastal Zone Restoration and Sustainable Management in the Eastern Province of Post-Tsunami Sri Lanka                                       | IFAD          | 1,919,915                           | 7,569,450  |
| Global   | Community Based Adaptation (CBA) Programme (Bangladesh, Bolivia, Niger Samoa, Guatemala, Jamaica, Kazakhstan, Morocco, Namibia, Vietnam)                  | UNDP          | 4,525,140                           | 4,525,140  |
| Yemen  | Adaptation to Climate Change Using Agrobiodiversity Resources in the Rain Fed Highlands of Yemen  | World Bank    | 4,000,000                           | 4,080,000  |
| Bolivia, Brazil,<br>Colombia,<br>Ecuador,<br>Guyana,<br>Peru, Suriname,<br>Venezuela | Integrated and Sustainable Management of Transboundary Water Resources in the Amazon River Basin  | UNEP          | 2,000,000                           | 43,780,000   |

**Colombia.** Colombia is highly vulnerable to the effects of climate change over a wide range of sectors and geographical regions. Melting Andean glaciers will limit water availability for fragile mountain ecosystems, agricultural and domestic purposes, and hydroelectricity. Sea-level rise will cause inundation of coastal regions and salt water intrusion, which in turn will lead to the relocation of coastal communities and destruction of coastal ecosystems. This project aims to address all of these vulnerabilities through an integrated approach of capacity building and local pilot adaptation interventions. This project also links mitigation and adaptation. Because of Colombia's strong reliance on hydropower, timely adaptive measures in water management could prevent or limit the need for replacement power supply from fossil fuels.

### Least Developed Countries Fund

To date, the GEF has mobilized \$165 million for the LDCF. Developed with the LDCs, this fund applies a streamlined procedure – including principles, modalities, and criteria to access the funds – that meets the needs of the LDCs. The results speak for themselves. Although these countries are some of the poorest in the world, and the least capable of adapting to the adverse impacts of climate change, 21 of them have already developed and submitted their National Adaptation Plans of Action (NAPAs) and 10 of them have submitted a concrete adaptation project to the GEF under the LDCF.

The LDCs have made impressive progress towards reducing their vulnerability to climate change. They

**Table 3. GEF Projects under the Least Developed Countries Fund**

| <i>Country/<br/>Region</i> | <i>Project Title</i>  | <i>Agency</i> | <i>Project Grant<br/>(approved)</i> | <i>Total (Approved/<br/>Expected)</i> |
|----------------------------|---|---------------|-------------------------------------|---------------------------------------|
| Bangladesh                 | Community Based Adaptation to Climate Change through Coastal Afforestation  | UNDP          | 3,000,000                           | 6,080,000                             |
| Bhutan                     | Reduce Climate Change-induced Risks and Vulnerabilities from Glacial Lake Outbursts in the Punakha-Wangdi and Chamkhar Valleys          | UNDP          | 3,455,050                           | 3,496,224                             |
| Eritrea                    | Integrating Climate Change Risks into Community Based Livestock Management in the Northwestern Lowlands of Eritrea                      | UNDP          | 3,000,000                           | 3,460,000                             |
| Niger                      | Implementing NAPA Priority Interventions to Build Resilience and Adaptive Capacity of the Agriculture Sector to Climate Change in Niger | UNDP          | 1,900,000                           | 4,050,000                             |
| Malawi                     | Climate Adaptation for Rural Livelihoods and Agriculture (CARLA)  | AfDB          | 3,000,000                           | 24,393,750                            |
| Mauritania                 | Reducing Vulnerability of Arid Oasian Zones to Climate Change and Variability through Improved Watershed Management                     | UNEP          | 1,630,000                           | 1,400,000                             |
| Samoa                      | Integrated Climate Change Adaptation in Samoa (ICCAS)   | UNDP          | 2,000,000                           | 2,000,000                             |

are now positioned to provide examples of adaptation experience and lessons learned to other countries around the world.

**Bhutan.** The NAPA for Bhutan highlighted the country's vulnerability to glacial lake outbursts. As water levels increase, critical thresholds can be reached, causing catastrophic flash floods downstream into the valleys. Such massive flash floods pose a major threat to life as well as infrastructure and economy in the affected valleys, such as farming areas. As a follow up to the NAPA, Bhutan has requested financing through the LDCF aimed at reducing Bhutan's vulnerability to glacial lake outbursts. This project has a two-pronged strategy: first, physical measures to artificially lower the water level of critical glacial lakes will be implemented and, secondly, capacities for responding to and predicting disasters will be increased through targeted disaster risk management development and installation of early warning systems.

**Malawi.** This country is heavily dependent upon rain-fed subsistence agriculture, with more than 80 percent of the population generating their daily livelihoods from small-scale agriculture. As Malawi faces increasing rates of extreme weather events, such as recurrent floods and droughts, efforts at fostering sustainable economic growth and improved rural livelihoods are put at risk of failing. A LDCF project is addressing this situation through two key components: a) investments aimed at improving agricultural practices, land management, and natural systems as well as rural livelihoods through targeted adaptation interventions in crop diversification, cropping sequences, conservation tillage, food storage and irrigation, and efficient water use; and b) creation of an enabling environment for climate risk management, including activities in policy development and implementation, institutional coordination, and generation of knowledge on climate risk management.

## Special Climate Change Fund

The SCCF, a special fund established by the UNFCCC, addresses the special needs of developing countries under the climate regime. The fund includes four avenues of financing: (a) adaptation, which is the top priority; (b) technology transfer; (c) energy, transport, industry, agriculture, forestry and waste management; and (d) economic diversification. The resources for adaptation now amount to about \$65 million.

**Bolivia, Ecuador, Peru.** Millions of people throughout the Andean region depend on run-off from glacial melting in the highlands for their daily fresh water needs. As Andean glaciers are projected to rapidly recede over the coming years, fresh water access will be severely strained in the region, threatening agriculture, hydro power generation, and health. The GEF has financed, through the SCCF, a project that will implement measures to meet the anticipated consequences of the catastrophic glacier retreat induced by climate change. This will be achieved through the design and implementation of strategic pilot adaptation measures to address key impacts of glacier retreat, including: management plans for potable water systems in urban areas; promotion of less water consuming management practices in the agricultural sector; and measures to increase the natural water storage capacity of highland ecosystems.

**China.** The Huang-Huai-Hai (3H) Basin is home to more than 400 million people and is China's prime agricultural area. With a high water demand, the region is sensitive to the decreases in stream flows and ground water recharges that are projected as an impact of climate change. At the same time, rising temperatures could increase water demand in the agricultural sector even further, causing major shortages in water and, ultimately, grain which affects the livelihoods of millions of people. China has accessed the SCCF's resource to implement adaptation measures that will enhance the resilience of agricultural

**Table 4. GEF Projects under the Special Climate Change Fund**

| <i>Country/<br/>Region</i> | <i>Project Title</i>   | <i>Agency</i>    | <i>Project Grant<br/>(approved)</i> | <i>Co-financing<br/>Total (Approved/<br/>Expected)</i> |
|----------------------------|--|------------------|-------------------------------------|--|
| Tanzania                   | Mainstreaming Climate Change in Integrated Water Resources Management in Pangani River Basin     | UNDP             | 1,000,000                           | 1,574,875  |
| Ethiopia                   | Coping with Drought and Climate Change   | UNDP             | 995,000                             | 1,866,667  |
| Mozambique                 | Coping with Drought and Climate Change   | UNDP             | 960,000                             | 929,840  |
| Zimbabwe                   | Coping with Drought and Climate Change   | UNDP             | 983,000                             | 1,156,000  |
| Guyana                     | Conservancy Adaptation Project   | World Bank       | 3,800,000                           | 16,200,000   |
| Kenya                      | Adaptation to Climate Change in Arid Lands (KACCAL)  | World Bank /UNDP | 6,500,000                           | 44,844,681   |
| Bolivia, Peru, Venezuela)  | Design and Implementation of Pilot Climate Change Adaptation Measures in the Andean Region       | World Bank       | 6,900,000                           | 21,750,000   |
| Ecuador                    | Adaptation to Climate Change through Effective Water Governance                                  | UNDP             | 3,000,000                           | 6,000,000  |
| China                      | Mainstreaming Adaptation to Climate Change Into Water Resources Management and Rural Development | World Bank       | 5,000,000                           | 50,000,000   |

and water development to climate change in the 3H Basin. This will be achieved through the identification and pilot demonstrations of a range of adaptation options in the agricultural sector: exploration of alternative water sources; improved efficiency of irrigation; and promotion of alternative (less water-consuming) crops. The project also supports mainstreaming adaptation into national agricultural planning.

## LESSONS LEARNED FROM INITIAL EXPERIENCE ON THE GROUND

The projects described above are some of the first adaptation projects on the ground worldwide. Designing, preparing, and implementing these projects have been a challenge at different levels, given the various capaci-

ties within countries. Moreover, only a few countries had identified the adaptation measures to be implemented and were ready to ask for financial support. Through an ongoing dialogue among the countries, the agencies, and the GEF, a momentum was created on moving from assessments to action. A pipeline of projects started to be developed and submitted that included concrete adaptation practices. The result was a portfolio of projects that includes a combination of preparation work and adaptation actions.

To facilitate this process, the GEF staff, in cooperation with the agencies, developed operational guidelines consistent with Convention guidance that could be translated into project design and implementation. This process included workshops and seminars among the GEF, agencies, and vulnerable countries, particularly LDCs and small island states.



Thanks to the new climate funds, innovative approaches are being promoted among the GEF agencies that integrate adaptation into development programs and policies.

From GEF's early experience on adaptation actions, here are some lessons learned:

*A:* The capacity and knowledge baseline significantly varies among countries. Each country has a unique situation that must be taken into account before doing an adaptation project. In some cases, a project will include preparation work aimed at improving knowledge, collecting missing data, or better processing the data, before acting. All projects, however, eventually include concrete adaptation actions.

- ▶ Although there is still a lack of adaptation knowledge, climate data, and data processing skills, all countries, including LDCs, have enough information to start implementing adaptation actions and utilizing the SPA, LDCF, and SCCF to finance their plans.

*B:* Climate change affects all sectors of development. Adaptation projects financed under these funds are aimed at ensuring that food security, access to drinking and irrigation water, sound public health, coastal infrastructure and other basic needs are preserved despite a changing climate and future challenges that have no precedent in human history. The large majority of projects reviewed under these three programs address the impacts of climate change on agriculture and water supply.

- ▶ It is clear, from early experience, that adaptation is linked to development and for this reason, we propose to define adaptation as “climate-resilient development.”

*C:* A significant scaling up of adaptation experiences and much larger resources are needed.

- ▶ Nevertheless, it is worth noting and taking into account the first results from GEF experience, because these results are concrete and are the first interventions on adaptation action on the ground.

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