



COMMUNITY-BASED ADAPTATION TO CLIMATE CHANGE

COMMUNITY BASED ADAPTATION

The Community-Based Adaptation (CBA) programme seeks to encourage systemic change in national adaptation-related policy through evidence based results from a portfolio of community-driven climate change risk management projects. The programme promotes global learning related to community adaptation by sharing lessons from a range of initiatives focusing on natural resource management.



The programme is a collaboration led by the United Nations Development Programme (UNDP), with financing from the Global Environment Facility (GEF). The GEF Small Grants Programme (SGP) is the delivery mechanism. The UN Volunteers has partnered with UNDP and GEF-SGP to enhance community mobilization, recognize volunteers' contribution, and ensure inclusive participation around the project, as well as to facilitate capacity building of partner NGOs and CBOs. In addition, funding is provided by the Government of Japan, the Government of Switzerland, and AusAID.

Building Resilience to Climate Change

People in small communities are the most severely affected by climate change impacts, but are often the least equipped to cope and adapt. While the need for action is pressing, there are few practical examples of support for adaptation at the community level.

CBA Project Timeframe

- 2009 31 projects under implementation
- 2010 50-60 projects under implementation
- 2012 80-120 projects under implementation

The Community-Based Adaptation Programme

- USD \$4.5 million, plus co-financing
- Up to \$50k per project (+co-financing)
- A five-year programme, 2008 to 2012
- 8-12 projects per country
- Approximately 120 projects globally
- Ten pilot countries: Bangladesh, Bolivia, Guatemala, Jamaica, Kazakhstan, Morocco, Namibia, Niger, Samoa, Vietnam

Key partners: UNDP, The Global Environment Facility (GEF), GEF Small Grants Programme (SGP), The United Nations Volunteers, the Government of Japan, the Government of Switzerland, and AusAID



The CBA programme addresses this gap by supporting community-driven projects that will pilot a range of climate risk management practices at the local level. The initiative seeks to support 8-12 projects in each of ten pilot countries, and a total of 80-120 projects globally by 2012.

Taking a natural resource management approach, the CBA programme focuses on adaptation approaches that also generate global environmental benefits in areas such as biodiversity conservation and sustainable land management. Projects will contribute towards country-driven priorities on natural resource management and climate change adaptation. The projects will in turn leverage systemic policy changes at a national level that are necessary to reduce vulnerability to climate change impacts.

The UNDP approach to adaptation is ultimately about doing development differently — integrating climate change risk management into MDG-focused initiatives. CBA projects add an adaptation layer to sound community-based development initiatives — ensuring that development gains are not threatened by climate change impacts. UNDP's CBA programme officially began implementation in February 2008. Country programme strategies have been developed in the ten pilot countries, and community outreach and project development-related activities are underway.

Status of Projects By Country	
Bangladesh	Projects in planning
Bolivia	Projects under implementation
Guatemala	Projects in planning
Jamaica	Projects under implementation
Kazakhstan	Projects under implementation
Morocco	Projects in planning
Namibia	Projects under implementation
Niger	Projects under implementation
Samoa	Projects under implementation
Vietnam	Projects under implementation



BOLIVIA

Agroforestry In The Saipina Municipality

Grant Amount: \$31,500 USD

Background of the Project Area

Saipina is located in Bolivia's "warm valleys", an area of transition between the western high plains and the eastern lowlands. The project area has one rainy season, which is also the main agricultural production season, and a dry season when cultivation is dependent on irrigation from a nearby river. The area's poor families rely on their crops for food and income, making them highly dependent on their environment, especially the local river. When rainfall levels are low, the river runs dry for several months. While there is some irrigation, the methods used are rudimentary and inefficient. Local forests are also threatened. Their overuse for animal forage and fuelwood exacerbates deforestation and is leading to a progressive loss of woodland vegetation and productive soils. The combined problems of water scarcity, resource degradation, and cyclical change in rainfall patterns (linked to El Niño and La Niña) jeopardize food security. To diversify livelihoods and increase incomes, the two project communities have recently increased cultivation of cherimoya, a native fruit crop.



Field diagnosis in Saipina Municipality for project "Adapting agroforestry in Saipina, Bolivia".

How Climate Change Impacts the Project Area

Climate change projections for Bolivia forecast higher temperatures, increasingly intense and erratic rainfall, and more marked seasonality. Severe glacial melting in the Andes is likely to in-

crease the risks of both flooding and water shortages, as melting glaciers are less able to store water for steady release throughout the year. Increasing evaporation driven by rising temperatures, in combination with higher rainfall variability, is likely to significantly decrease water availability and bring drought. With these additional climate change pressures, farmers may be forced to cultivate new lands, creating a climate-driven cycle of land clearing and degradation that contributes to deforestation.



Improving cherimoya production through soil conservation techniques such as terracing and contour planting.

Efforts to improve incomes through the promotion of cherimoya cultivation are threatened by changing hydrology and decreased soil moisture, because the trees require a stable water supply. Land degradation and water scarcity may also increase the risk of competition over natural resources. The ecosystems upon which these poor, rural communities rely for agriculture, water,

and income could be significantly impacted by adverse climate changes.

How CBA Project Supports the Local Communities

With the project support, community members are developing the capacity to reduce the vulnerability of agricultural production to climate change. Along with Fundacion Amigos de la Naturaleza, a local NGO, the CBA programme has helped the farmers of Saipina identify the climactic factors affecting agricultural conditions and recommended adaptation practices. Agroforestry techniques will be introduced to improve resource management and maximize scarce water resources. The project seeks to promote production of the popular cherimoya fruit crop as a sustainable income source. The following strategies will be employed to make cherimoya cultivation more resilient to climate change:

- Improving and expanding cherimoya growing areas with soil conservation techniques such as terracing and contour planting.
- Improving irrigation and water management efficiency to ensure the sustainability of cherimoya production despite predicted changes in water availability.
- Improving forest management to help reduce deforestation by planting local species that can serve as wind breaks and live fencing, while providing firewood and forage for cattle.
- Using community meetings, trainings, and exchanges of experiences to build community capacity to manage water and soil resources in a climate-resilient manner that will improve cherimoya agroforestry systems.

Project Partners

The CBA programme is a collaboration led by United Nations Development Programme (UNDP), with financing from the Global Environmental Facility (GEF). The GEF Small Grants Programme (SGP) is the delivery mechanism. The UN Volunteers partners with UNDP and GEF-SGP enhance community mobilization, recognize volunteers' contribution, and ensure inclusive participation around the project. A national UNV volunteer is dedicated to the CBA programme in Bolivia in this respect.

Collecting field samples during a field diagnosis in the Saipina Municipality in Bolivia.



BOLIVIA

Assisting Communities To Sustainably Manage

Soil And Water Resources

Grant Amount: \$34,875 USD

Background of the Project Area

Moro Moro is located in Bolivia's "warm valleys" – an area of transition between the western high plains and the eastern lowlands, where temperature is largely determined by altitude. The area is somewhat dry, with an average precipitation between 600 and 700 meters per year, and a distinct rainy and dry season. The municipality's approximately 3,600 residents depend primarily on agriculture and raising livestock for their livelihoods. Baseline environmental challenges include severe deforestation and soil degradation on the steeply-sloped pastures and farmlands. Soil degradation and deforestation threaten not only agricultural productivity and farmers' livelihoods, but also water quality and water availability for populations living downstream.

How Climate Change Impacts the Project Area

Climate change impacts are already being felt in this part of Bolivia and are expected to become more severe. Impacts include increasing temperatures, increasingly intense yet erratic rainfall, and more marked differences between the rainy and dry seasons. As a result, risks of floods and droughts are heightened. Climate change impacts will exacerbate existing land degradation pressures, threaten local livelihoods, and undermine existing efforts to improve water and soil management in the area. A local NGO, Fundación Natura, and its partners, IUCN and UNDP-Bolivia, have a water and soil management project that focuses on integrated water resource management through payments for environmental services. However, these measures are unlikely to be sustainable if climate change pressures are not simultaneously addressed.

How CBA Project Supports the Local Communities

To combat the climate-driven challenges, the communities manage key watersheds in the forests that act as a protective buffer against increasing climate-driven flood, erosion, and landslide threats. In addition, with the help of the CBA project and Fundación Natura, the community developed and is managing nurseries to raise native species. Trees are planted in water catchment areas to protect the soil from threats such as stronger rainfalls. These community-managed activities promote increased agricul-

tural production and water availability, and, therefore, improve the livelihoods of the local community members.

The CBA project also helps the community improve its knowledge of climate change and learn adaptive practices to help it cope with its impacts. Municipal residents, including children and youth, learn about climate change risks through two-day workshops. Participatory meetings are held to document historical and current climate variability and how it affects agricultural production. These records serve as baseline measurements, against which future environmental changes can be evaluated.



A degraded watershed area from deforestation and climate change driven factors such as floods and erosion, in the warm valleys of Moro Moro, Bolivia.

Project Partners

The CBA programme is a collaboration led by United Nations Development Programme (UNDP), with financing from the Global Environmental Facility (GEF). The GEF Small Grants Programme (SGP) is the delivery mechanism. The UN Volunteers partners with UNDP and GEF-SGP to enhance community mobilization, recognize volunteers' contribution, and ensure inclusive participation around the project. A national UNV volunteer is dedicated to the CBA programme in Bolivia in this respect.



A farmer inspecting young cherimoya fields in Moro Moro, Bolivia.

JAMAICA

Land Preservation Measures to Combat Climate Change

in Jamaica's Cockpit Country

Grant Amount: \$45,000 USD

Background of the Project Area

One of Jamaica's last remaining wildernesses, the Cockpit Country area is of significant global importance because of its unique topography and its large quantity of endemic species. The Martha Brae watershed encompasses several residential communities, including Bunkers Hill, which has about 2,000 residents. Residents are mostly farmers and, to maintain their livelihoods, the community utilizes the local ecosystem's services, especially rivers, which provide domestic and irrigation water. Residents of Bunkers Hill are affected by frequent flooding which causes erosion, destroys infrastructure, and damages local croplands.

How Climate Change Impacts the Project Area

Climate change projections for Jamaica include an increased intensity of extreme storms and rainfall, as well as worsening levels of drought. In the Cockpit Country, increases in rainfall intensity will heighten the risk of flooding, especially during the rainy seasons. Existing flash flood patterns already pose a significant threat as river embankments erode and the stability of bridges is compromised. Exacerbation of flash flooding risks due to climate change would further threaten the viability of agriculture in the region by destroying crops, eroding lands, and spreading chemical contaminants.



An eroded riverbank in the Bunker's Hill community, Jamaica.

How CBA Project Supports the Local Communities

The CBA project is working through the local Bunkers Hill Community Development Council to stabilize and reinforce riverbank slopes to protect against the loss of agricultural lands. The project aims to fortify community resources, such as croplands and bridges, and make them increasingly resilient to flooding and erosion. Techniques include building culverts to divert floodwaters away from bridges and reinforcing erosion-prone areas by constructing "natural" stone barriers and planting indigenous species.



Launch of CBA project in Bunker's Hill, Jamaica.

Project Partners

The CBA programme is a collaboration led by United Nations Development Programme (UNDP), with financing from the Global Environmental Facility (GEF). The GEF Small Grants Programme (SGP) is the delivery mechanism. The UN Volunteers partners with UNDP and GEF-SGP to enhance community mobilization, recognize volunteers' contribution, and ensure inclusive participation around the project. A national UNV volunteer is dedicated to the CBA programme in Jamaica in this respect.



Exposed roots and destabilized tree resources along a river course in the Bunkers hill community area, Jamaica.

JAMAICA

Hillside Communities Adapt Agricultural Practices to Increase Incomes and Reduce Risk of Erosion and Landslides

Grant Amount: \$48,750 USD

Background of the Project Area

The 2,600 residents of the Woodford and Cascade communities live near the Blue and John Crow Mountains National Park in Jamaica. These hillside inhabitants make a living by growing cash crops, primarily bananas and Blue Mountain coffee. Farming on steep slopes, residents often resort to unsustainable agricultural practices such as “slash and burn”. Deforested hills are particularly prone to erosion and landslides during intense rainfall events and hurricanes. The resulting soil degradation has devastating consequences for the productivity of community farms.

How Climate Change Impacts the Project Area

Climate change is expected to bring more severe weather, higher intensity rainfall, longer droughts, and warmer temperatures to Jamaica. These changes are likely to speed soil erosion, especially on steep slopes, leading to landslides, and putting agricultural livelihoods at risk. As temperatures increase, farmers may cultivate lands further upslope, seeking the cool conditions favorable to coffee and other crops. Even the nearby national park, an internationally-significant protected area, is at risk of encroachment.

How CBA Project Supports the Local Communities

With the project’s support, community members are developing the capacity to respond to the increased risks posed by climate change, and thereby secure their livelihoods. The project builds on the existing efforts of the implementing partner, the Jamaica Conservation and Development Trust (JCdT), to apply cost effective soil conservation techniques in steep slope environments and plant trees on degraded hillsides. Additionally, farmers are learning alternative livelihood practices, including greenhouse farming and high-value organic farming, which help increase incomes and reduce climate risks. Greenhouse farming has already been successfully employed by other projects in Jamaica. It is more intensive than regular farming, so it reduces the need for farmers to clear new land, which exacerbates erosion. Greenhouses also protect crops from pests and inclement weather, ensuring higher quality products that can be sold to local supermarkets for higher prices.

The Woodford community has brought together a diverse group of residents, including men, women, youth, and people with disabilities, to reduce its vulnerability to climate change. Every Tuesday, volunteers work together to construct their new greenhouse. Robert Hall, 26, is one of the community members who attended project workshops about climate change and forest restoration. “I feel compelled to teach others about alternative farming practices,” he says, “and help them to understand climate change and its effects on their crops.” Hall sees the impact of unsustainable practices on the local environment and volunteers to share his knowledge with his peers.

This project will also serve as an example for other area communities facing similar pressures. By reducing soil erosion and decreasing climate-driven pressures through reforestation and the adoption of new agricultural techniques, farmers will be less likely to encroach on protected areas upslope and will be better able to adapt to climate changes.



Community members at work for safer slopes on the Blue Mountains, Jamaica.

Project Partners

The CBA programme is a collaboration led by United Nations Development Programme (UNDP), with financing from the Global Environmental Facility (GEF). The GEF Small Grants Programme (SGP) is the delivery mechanism. The UN Volunteers partners with UNDP and GEF-SGP to enhance community mobilization, recognize volunteers’ contribution, and ensure inclusive participation around the project. A national UNV volunteer is dedicated to the CBA programme in Jamaica in this respect.



Community at work for safer slopes on the Blue Mountains, Jamaica.

KAZAKHSTAN

Assisting Communities In Kazakhstan To Adapt To Climate Change By Improving Pasture Management

Grant Amount: \$50,000 USD

Background of the Project Area

Pasture lands comprise 65% of Kazakhstan, making them valuable environmental and economic resources. These lands are the primary source of livestock fodder and their viability determines the efficiency of animal husbandry and, consequently, the welfare of rural populations. Most pastures are located in arid zones and are of low productivity. The communities participating in the project are located in the Sarkand District of southeastern Kazakhstan, a typical rural area which depends heavily on livestock and pastoral resources for its livelihoods. The only agriculturally useful precipitation is winter snow that contributes to soil moisture and groundwater as it melts. Summer precipitation generally evaporates before it can be absorbed by plants, thereby limiting agriculture.

How Climate Change Impacts the Project Area

Like much of Kazakhstan, the project area faces increasing aridity due to climate change and man-made environmental pressures. The hardy sauxal tree plays an important role in fixing soil and maintaining the productivity of pastures. The challenge that many sauxal forests were cut down in the 1990s, disturbing the pastoral ecosystem and causing land degradation. Other pressures on pastoral lands include disruption of traditional pasture management practices, growth in private livestock herds, and the deterioration of a Soviet-era irrigation dyke. The decline in pastoral resources has reduced villagers' income from livestock-raising and forced many in this poor region into maladaptive coping strategies, such as poaching and illegal fishing. Climate change is expected to exacerbate existing pressures and make it increasingly difficult for residents to make a living from their livestock. Increased temperatures, especially in winter, and more evaporation in summer have already been observed in the project area and are expected to become more severe. These changes will increase overall aridity, threatening the productivity of pastoral lands by decreasing the availability of forage and water for irrigation.



Melted winter snow intrusion into the grazing fields in Kazakhstan.

How CBA Project Supports the Local Communities

The local community understands its vulnerability to climate change and recognizes the need for new adaptation methods. At CBA project preparation workshops, local people identified pasture degradation as a key problem and realized the necessity of replanting sauxal trees to rehabilitate pastures. The community decided to develop sustainable pasture management practices and improve growth in hay the fields through improved water retention techniques and fertilization.

Pasture improvement is a multi-year process, but the work started by this CBA project, with support from German Technical Cooperation, will put the community on the right path. Large areas of sauxal forests will be replanted, and community members are designing new methods for herd management to decrease the load on pastures and prevent degradation. This and other methods will ensure sufficient fodder supply, improve livestock quality, and raise community incomes. Initial results are encouraging and can be replicated. Hay production has already increased due to measures put in place, allowing villagers to set aside more fodder for the coming winter and reducing the burden on pastures once the spring arrives. The CBA project partners with the Government of Switzerland to co-finance additional project activities to ensure that the project goal is fully accomplished. Additional funding for

this project is used for the expansion of the fertilized inundable lands through purchase and application of additional 6,000 kilograms of nitrate on 20 hectares under the snow. The environmental issue addressed is the conservation and rehabilitation of ecosystems and pasture biodiversity, which are weakened by overgrazing especially during early spring season. In addition, this activity addresses a social and economic issue of improving the fodder stock for a cost-effective cattle breeding process. Increase in fodder stock will enhance the adaptive capacity of the community to climate aridity by raising cattle productivity and decreasing the level of cattle mortality. Thus, the livelihoods of the community and infrastructure will be improved.



The effect of aridity that leads to low infiltration of rain water on pasture lands in Kazakhstan.

Project Partners

The CBA programme is a collaboration led by United Nations Development Programme (UNDP), with financing from the Global Environmental Facility (GEF). The GEF Small Grants Programme (SGP) is the delivery mechanism. The Government of Switzerland co-finances additional activities on this project.

KAZAKHSTAN

UNDP Assists Pastoral Communities Facing Increased Aridity in Kazakhstan

Grant Amount: \$50,000 USD

Background of the Project Area

The 3,100 inhabitants of Lepsy village reside in the northern desert of Kazakhstan. The climate is extremely dry, with long, cold winters and hot summers. Winter snow is the main source of agriculturally useful precipitation. Summer precipitation evaporates too quickly to be absorbed by plants, but melting snow seeps into the ground contributing to soil moisture and raising groundwater levels. This fragile ecosystem is threatened by climate change, specifically increasing aridity, as well as human pressures on the land - including overgrazing.

How Climate Change Impacts the Project Area

Long-term climate change projections for Kazakhstan forecast rising temperatures and declining average rainfall, which will lead to increased aridity in the already dry country. Drought is the main climate risk facing the village of Lepsy, where the harsh climate makes agriculture impossible. Decreasing soil moisture levels are already reducing fodder growth, lowering grazing capacity for local livestock, and contributing to pasture degradation. As a pastoral community, they rely on products generated from livestock, such as milk, meat and wool, as a source of income. The productivity of livestock is highly dependent upon the quality of forage available, as cattle, goats, horses and sheep require sufficient pasture. Undernourished animals sell at low prices and produce little milk. Aware

of the links between climate, vegetation, and livestock, Lepsy residents are implementing adaptation measures to ensure that climate change doesn't further threaten their survival.

How CBA Project Supports the Local Communities

With UNDP support, local NGO Farmers Foundation of Kazakhstan worked with livestock owners and agricultural experts to design a community-driven project. Livestock specialists and veterinarians helped residents formulate strategies to improve the resiliency of their pastoral livelihoods and contribute to the conservation of the sand-pasture ecosystem. The community is benefitting from the implementation of sustainable pasture management practices that take changing climatic and ecological conditions into account and make the most of scarce water resources. To reduce the grazing load on parcels of land and enable more even livestock distribution, some herds are being transferred to unused rangelands in remote areas. A seasonal pasture rotation has also been arranged with livestock owners to ensure optimal loads on new pastures. Finally, water supply systems have been optimized by rehabilitating traditional wells.

From project design to implementation, community members are dedicating their time, labor, materials and knowledge on a voluntary basis to sustain and improve their livelihoods. The best practices identified to reduce the climate change impacts on the sandy rangelands will be documented and disseminated

290 households with a population of 1,180 people. There are 1600 heads of cattle and 3,200 heads of sheep and goats. The villagers of Kokterek approached the NGO Arai with the proposal to provide expertise, technical support, and relevant training to the community. A remote pasture management programme will be implemented to address the threat of land degradation. This will be the first time that the livestock analysis of the fodder based on the rotation and seasonal indicators will be conducted. The results of the project will provide data on how climate change will impact fodder quality in sustainably managed pastures.

Project Partners

The CBA programme is a collaboration led by United Nations Development Programme (UNDP), with financing from the Global Environmental Facility (GEF). The GEF Small Grants Programme (SGP) is the delivery mechanism. The Government of Switzerland co-finances additional activities in this project, as well as the other CBA projects in Kazakhstan and Central Asia.



Inspecting a damaged irrigation systems in Kazakhstan

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_12746

