

DJIBOUTI

REDUCING IMPACTS AND VULNERABILITY OF COASTAL PRODUCTIVE SYSTEMS

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Djibouti's location as an arid coastal state makes it highly vulnerable to climate disasters. The majority of Djiboutian population is found near the coast, and is particularly at risk from sea level rise and flash floods (as seen in 1927, 1989, 1994, and lately in 2004). The vast majority of Djibouti's rural population is highly vulnerable to climatic uncertainty, as they live in deserts or marginal infertile areas, often with highly erodible soils and limited water supply. Because Djibouti does not have permanent surface water bodies, it relies primarily on groundwater and on the seasonal flow of wadis. Climate models to the horizon of 2050 show how impacts on Djibouti's coasts, where most of its population is concentrated, are already significant, and will continue to increase with projected changes in climate. Djibouti's INC predicts a potential temperature increase of between 1.7 and 2.1 degrees Celsius, and a potential sea level increase of 8 to 39 cm. Initial studies of Djibouti's vulnerability to climate change revealed a significant impact on the fragile water balance at country level. The situation in the country will be aggravated by decreased precipitation (between 4 and 11%) as well as changes in the pattern of precipitation (geographic distribution, frequency and intensity). This combination of factors will likely lead to increased severity of dry spells as well as more intense wet extremes, accelerating erosion and floods. This will have a potentially

disastrous impact on the availability of water in the country and particularly in coastal areas. For example, groundwater recharge will decrease with a decrease in precipitation, while flash floods from wadis may occur more often due to the increase of rare but violent, precipitation events, with potential increased risks of lives lost. Sea level rise is likely to further exacerbate these impacts, particularly with respect to salt-water intrusion into the coastal aquifers which will have a detrimental impact on the already declining water quality. Combined with excessive pumping and overexploitation, sea level rise poses a severe risk to the country's urban areas. Further, fragile coastal ecosystems (coral reefs, estuaries, mangroves), that play a crucial part in the livelihood of coastal communities and act as ecological buffer zones, are already showing signs of degradation due to climate change and human pressures. Pressures on the country's remaining mangroves are expected to increase with predicted changes in the precipitation pattern, with drought and erosion leading to siltation of seasonal waterways, rapid runoff and sedimentation, resulting in a semi-permanent closing off of the mangrove.

PROJECT ACTIVITIES AND EXPECTED IMPACTS

Because of its small size and capacity, many of the natural systems are linked and resources and technical capacity available are little. This project therefore took the approach of integrated coastal zone management and climate change. It therefore addresses several root causes for vulnerability together. The project objective is to address the impacts of climate change on coastal ecosystems and communities by implementing a set of urgent measures that will strengthen the capacity to predict future changes, while helping local populations to adapt through the adoption of more sustainable production meth-

ods, particularly in the areas of water management, agriculture, fisheries and tourism. This is achieved through a combination of three inter-related components: policy, ecosystem rehabilitation and disaster prevention and response.

The policy component of the project reinforces institutional as well as technical and technological capacity to implement integrated coastal zone management in the context of a changing climate. It includes a blend of policy initiatives to set up the enabling environment at the country level, as well as technology transfer in order to address the impacts of climate change on productive coastal systems, in particular in the water, fisheries and coastal agriculture sectors.

In the absence of this project, Djibouti would see continued planning and development of the coastal zone without due attention given to the consequences of increased vulnerability. There would be a continued lack of information and knowledge about existing resources and impacts, such as groundwater potential, soil salinity, coastal erosion and its impacts on the economy, etc.

The Ecosystem Rehabilitation component of the project addresses the increased risk of extreme climate-induced events due to environmental degradation. These include increased risks of floods, diminishing levels of seasonal rivers and aquifers, increased severity of droughts, sea level rise and its associated consequences. This component includes the implementation of physical measures to rehabilitate coastal ecosystems in order to restore their resilience to the above mentioned impacts. Alternatives for local communities are developed as a means of releasing pressure on the mangroves and on water resources. For example, the rehabilitation of mangroves yields multiple benefits: by serving as a natural barrier to seawater intrusion, the mangrove helps maintain pasture in the surrounding areas. Similarly, in conjunction with the planned development of a 150,000 urban center in Khor Angar, the project addresses issues related to the availability of freshwater for current and future communities, by promoting water extraction technologies adapted to decreased rainfall. In the absence of this project's interventions, degradation of key coastal climate buffers, such as the important mangrove systems at the two project sites will continue.

Deforestation and unsustainable exploitation of these systems will continue unabated as few alternatives exist for local populations. This will increase environmental vulnerability as well as remove an important source of livelihoods as these grounds are an important area for fishing of high value species.

The prediction and disaster prevention component of the project strengthens the country's capacity to measure and monitor the impacts of climate change, as well as the targeted communities' and the government's ability to respond to them. The ability to measure, anticipate and prevent potential disasters, including early warning systems is the primary focus of the activities implemented. It builds on an existing flood early warning system currently under development which has not factored in climate information, and also coordinates with current efforts to implement a project for the protection of the capital, Djibouti, against flooding. Without this project the country will continue to rely on ad hoc disaster relief efforts rather than preventing serious losses before they occur. Over the long-term, climate-induced risks will continue to not be factored in to the decisions being made about coastal development.

SYNERGIES AND COORDINATION

The project builds on plans and policies developed by the Government of Djibouti in relevant sectors, as well as on synergies with ongoing and planned projects. For example, the project will build on current efforts by multilateral agencies (e.g. World Bank, UNEP) to install an early warning system for wadi flooding and extends lessons learned from recently developed disaster management and response tools to the national level or in project sites, as part of the Disaster Prevention component. The project also builds on initiatives aiming to promote sustainable livelihoods and food security, such as the FAO Special Programme on Food Security, which foresees interventions to develop surface water harvesting and fisheries development. Other linkages are established with projects implemented by various partners in other regions of the country, including solar energy projects (IFAD) designed to limit fuelwood harvesting or the GEF-supported PERGSA (Conservation of the Environment of the Red Sea and Gulf of Aden) for conservation areas.

FOR MORE INFORMATION

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