



# MALDIVES

## Integration of Climate Change Risks into the Maldives Safer Island Development Programme

LEAST DEVELOPED COUNTRIES FUND	
LDCF grant	\$4,743,000
Cofinancing	\$4,290,000
NAPA completion	March 2008
Inclusion in LDCF Work Program	March 2009
Expected CEO endorsement	January 2010
Expected implementation start and completion	March 2010–February 2013
GEF Agency	United Nations Development Programme (UNDP)
Other executing partner	Ministry of Environment, Energy and Water

Maldives is one of the nations most vulnerable to the predicted impacts of climate change, especially sea-level rise (SLR). More than 85 percent of land area is estimated to be less than 1.5 m above mean sea level. The country consists of small, low-lying coral reef islands, which are vulnerable to both short-term changes in sea level, e.g., flooding produced by storms and swell waves, as well as long-term SLR. There have been recent incidences of swells and storms affecting more than half the populated islands, resulting in loss of property and adverse impacts on water resources and agriculture. Forty-four percent of settlement footprints on all islands are within 100 m of the shoreline, and more than 70 percent of all critical infrastructures are within 100 m of coastline.

The National Adaptation Programme of Action (NAPA) has identified settlement planning and natural

hazard mitigation as key approaches in combating SLR-related effects. The proposed project addresses the NAPA priorities 1 and 2 aiming at reducing the vulnerability of the population to climate change and climate-related natural disasters through re-evaluation and improvement of the national *Safer Island Strategy*, which refers to a range of larger islands that should provide safe havens for people forced to migrate before or after extreme natural disasters. "Safe Islands" offer communities ecologically safe zones and structures to mitigate the impacts of climate change and prevent losses during emergencies and disasters. Elevated areas and buildings enable also vertical evacuation, and all basic services are intended to be provided during emergencies.

The "climate smartness" of the strategy and the *Safer Island Development Programme (SIDP)* still require



strengthening through consideration of critical information on climate change impact projections and scenarios and their reflection in land-use planning, infrastructure development, and coastal zone management. Also strengthening and reinforcement of natural protective functions based on the geophysical setup of Safer Islands are strongly recommended, as opposed to an arbitrary, single standard set of planning measures for all islands. Replication of defensive features of natural environments involves proper topographic profiling, soil profiling, revegetation and drainage, and a new planning perspective for land reclamation and coastal protection activities.

### **Project Activities and Expected Impacts**

*Capacity development:* LDCF resources enable establishment of a climate information system that ensures the systematic collection, analysis, and dissemination of climate risk information for practical tasks related to SIDP planning. Technical and planning staff at the atoll and island levels are trained in climate risk analysis, hazard mitigation, and adaptive planning, thereby addressing efficient response to long-term climate risk challenges.

*Policy support:* LDCF resources are used to assess, prioritize, and demonstrate anticipatory, adaptive, and innovative measures in coastal development, coastal protection, and resilient land-use planning, zoning, and farming on islands that are designated to become Safer Islands in the SIDP. Additional technical and engineering studies are undertaken to ensure long-term resilience of communities living on, or moving to, Safer Islands. This strengthens understanding of hazard and vulnerability dynamics on all Safer Islands, and develops guidelines for resilient land-use planning, natural hazard mitigation, coastal development, and land reclamation. Revising and systematically integrating climate change risk reduction measures into SIDP policies and practices is crucial.

*Climate risk reduction:* Priority mitigation and adaptation measures on Safer Islands are defined and integrated into composite risk reduction action plans. They integrate a suite of innovative coastal protection, land-use planning, and land reclamation

measures based on technical and engineering analysis delivered by the project. The design of individual demonstration measures is aligned with local conditions at the pilot sites and guided by the selection principle of low-cost replication potential. This moves the scope of the project toward support of natural protective structures and ecosystems, diversification of climate-sensitive natural resources and crops on islands, resilient land zoning and management of natural buffer zones, and improved information flows from climate information and early-warning systems. Focus is on long-term resilient practices of land reclamation, erosion prevention, soil and vegetation management, participative protection of coastal sediment barriers, and optimization of freshwater and drainage management. Piloting of a suite of interconnected adaptation measures in- and outside of the SIDP enables analysis and evaluation for a following scaling-up plan.

*Knowledge management and learning:* The lessons generated through this project are highly relevant to other Small Island Developing States (SIDS). Targeted knowledge-sharing activities within Maldives and beyond ensure dissemination of lessons learned through the global Adaptation Learning Mechanism (ALM) platform. The project assists in developing a critical mass of coastal zone adaptation experience in SIDS.

### **Synergies and Coordination**

The project builds on, and closely coordinates with, the UNDP/United Nations Environment Programme-supported detailed risk assessments of nine potential Safer Islands; detailed cost-benefit analyses of two potential Safer Islands by United Nations International Strategy for Disaster Reduction (UNISDR); and the Maldivian government-funded *Safer Island Development Program*.

The Maldives is working on developing its Second National Communication (SNC) to the Climate Convention. The included Vulnerability and Adaptation Assessment directly ties into the climate knowledge and information-related deliverables of this project and ensures that relevant climate models and scenarios are actively applied in the re-evaluation of the SIDP.

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### **For More Information**

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