

## Nouakchott microgrid development

Title: Protecting the city of Nouakchott from the impacts of climate change Commissioned by: German Federal Ministry for Economic Cooperation and Development (BMZ) - Energy and Climate Fund (ECF)  
Country: Mauritania Lead executing agency: Ministry of Environment and Sustainable Development Overall term: 2012 to 2017

Nouakchott, the capital of Mauritania, is a coastal city founded in 1960 on the edge of the Sahara, and is now home to one million people. As a result of the Sahel crises with their prolonged periods of drought in the 1970s and 1980s, the nomadic population, which still accounts for 90 per cent of the country's people, lost its cattle herds. Under these extreme conditions, people moved to the rapidly growing, informal housing developments in the capital. Pro-active urban planning and development were not possible under these circumstances.

Large parts of the city were built in a sebkha, or dried up saltwater lake. As a result of this location, the city's infrastructure is heavily impacted by siltation. Even as late as the 1990s, building material for the city was taken from the natural dunes running along the ocean. The dunes, which were the only barriers protecting low-lying areas of the city from seawater, started to erode as a result.

Since around 2008, another phenomenon has also been creating big problems for Nouakchott. The water table is rising, causing flooding in many parts of the city, sometimes for several months at a time. The rising sea level and increasingly heavy rains will intensify the city's problems in the future.

Relevant actors in Mauritania utilise improved resources, expertise and instruments for climate change adaptation in coastal cities.

GIZ is supporting relevant actors like the Ministry of Environment and Sustainable Development and municipalities to protect the city more effectively from the impacts of climate change.

The first step in any activity is to consolidate existing knowledge. Since 2004, a number of studies have been submitted, but only on selected issues. The project is developing an information system (AdaptNKC) that gives all participating organisations access to the data they need to make sound decisions. Local vulnerability analyses and new climate risk assessments for different city districts are providing the basis for an integrated action plan. At the same time, the municipal institutions are learning how to systematically adapt their project planning to climate change. Decisions and investments at local level often have an impact on urban development for many decades.

The project has been able to help reduce the threats to one of the most fragile coastal zones. Within the context of safety and protection activities for the line of dunes along the coast, three breaches have been closed

- including two under the supervision of the Ministry of Environment. The protective function of the dunes is being re-established through multiple stabilisation activities as well as the use of blocking elements like plant pots and seating.

The capacity of national and local actors is being developed. Instruments that increase the resilience of the largest coastal cities are being made available. The project has also raised awareness among selected representatives from Nouakchott and relevant ministries, and they now recognise the need for integrating systematic climate change adaptation into planning activities. Following the Resilient Cities Network Conference in Bonn in June 2013, which was attended by municipal delegates, GIZ organised a workshop together with Teveragh Zeina municipality. The local mayor subsequently nominated a focal point to serve as the contact person for the city's nine municipalities and support implementation of the nine pillars of the My City is Getting Ready campaign.

Local advisory services on participatory development of instruments has led to positive changes in the structural and administrative climate, resulting in improved surrounding conditions. The project has been able to increase the Nouakchott city council by supporting the participatory development of a climate-resilient city development plan.

In late 2013, the project helped the Ministry of Environment with emergency measures in the district Socogim PS, where many houses were dealing with heavy flooding. Four private schools, a kindergarten, a police department and a mosque were restored.

During a study trip to northern Germany at the end of 2013, stakeholders were able to build their capacity in the field of coastal protection. A total of 12 participants - delegates from the Ministry of Environment and representatives of coastal communities - were able to increase their knowledge of climate change adaptation and learn about intersectoral and inter-institutional cooperation.

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