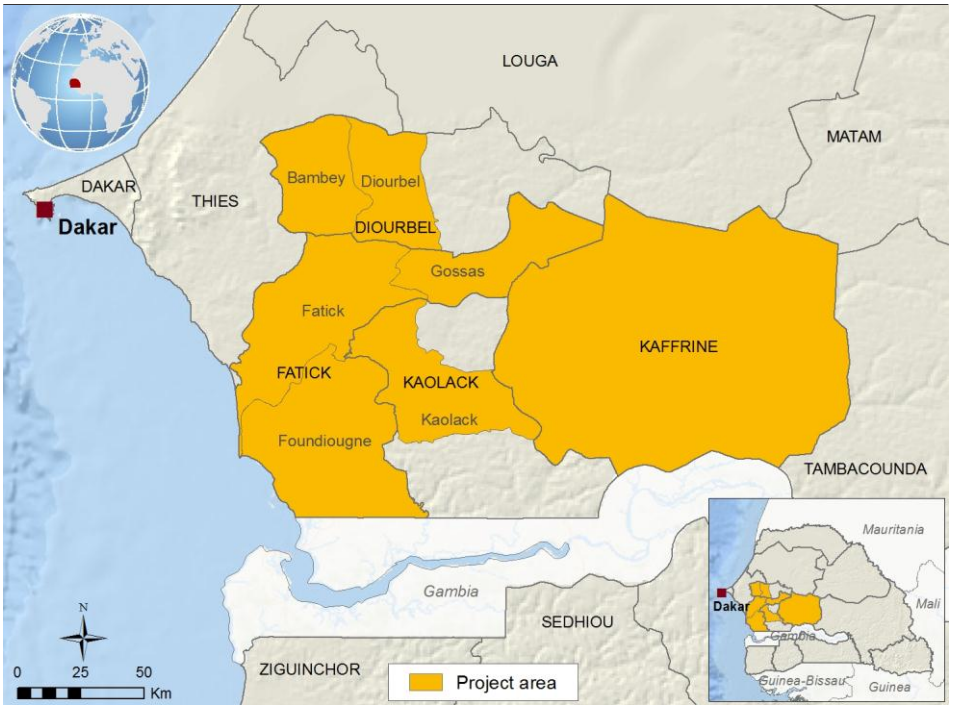
SENEGAL

Climate Change Adaptation Project in the Areas of Watershed Management and Water Retention



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The Global Environment Facility (GEF) brings together 183 countries, the private sector, civil society organizations and international institutions to address global environmental problems. The GEF-IFAD partnership promotes win-win solutions to deliver both global environmental benefits as well as significant gains for rural poor people.

IFAD
Investing in rural people

ISSUES

Senegal is a country that faces a persistent lack of rain due to its location in the Sahel-Saharan climatic zone. In recent decades, human activities such as monoculture farming, bush fires, inappropriate or lack of fertilization and overgrazing have degraded the natural environment, which has resulted in lower production from crop and pasture lands, and an ongoing process of desertification. Senegal's forests are disappearing at an alarming rate, in the range of 40,000 hectares per year as indicated by the Food and Agriculture Organization's (FAO) Global Forest Resources Assessment 2010. Therefore, conservation of natural resources and ecosystems remains a major challenge.

The effects of desertification and drought have resulted in migratory flows and massive concentrations of human settlements in Senegal's coastal areas, giving up most of the land lying within the interior. Mainly due to declining soil productivity, people have often responded by migrating and further clearing of forests. On the socio-economic conditions, falling agricultural production has drastically reduced people's incomes, which, combined with the lack of sustainable alternative sources of income, basic infrastructure, both economic and social, explains the persistence of rural poverty.

Senegalese coastal areas are also vulnerable to sea level rise, which is the cause of widespread erosion and coastal flooding in low lying coastal areas (mangrove estuaries in particular) and increased salinization of soils, surface waters and groundwater.

ACTIONS

The project interventions focus on water resources management through three main components: i) capacity building, awareness raising and knowledge management at the national level, ii) water harvesting and watershed management, and iii) water conservation and efficient irrigation.

PROJECT SUMMARY

Total cost: US$15.2m
Special Climate Change Fund: US$5m
IFAD loan: US$8.8m
Government of Senegal: US$0.85m
Beneficiaries Contributions: US$0.5m

Project period: 2011-2015

Executing agency: Directorate of Retention Basins and Artificial Lakes (DBRLA)

Beneficiaries: 10,000 households

Project objective: To increase the resilience of agricultural production systems and associated value chains to climate impacts on the water sector, by ensuring the supply and availability of water for agricultural use in a context of increasing climate change induced water scarcity.

Capacity building, awareness and knowledge management at national level. This component is targeting national stakeholders, policy makers and local-level actors, to create awareness on the implications of climate change on agricultural production and pastoral farming, as well as on key value chains. The outcome will be achieved through three different outputs: i) identify needs in terms of capacity building and awareness on climate change and adaptation of agricultural production systems at all levels, ii) integrating climate change into sectorial policies and iii) develop a clear strategy for dissemination of good practices.

Water harvesting and watershed management. This component aims to reduce the climate change impacts on water resources and production systems. The Government of Senegal has recognized the importance of creating water retention basins as a way to use surface water efficiently. This option is particularly relevant for smallholders that are better served by these techniques than large scale producers. A total of of 15 water retention basins will be established, with an average retention capacity of 200,000m^3 per basin depending on the technology used and location.

Water conservation and efficient irrigation. This component will aim to use scarce water more efficiently, through improved irrigation systems and diversification of production. The promotion of water efficiency will be crucial to ensure that water resources are sustainably managed in the context of increased climate induced water scarcity. As a result of the activities undertaken through this component, about 250 hectares of agricultural land will use drip irrigation or other appropriate and cost-effective technologies, benefiting approximately 30 communities in the project area. Furthermore, awareness-raising on water-use and irrigation management will be carried out targeting 20 farmers' associations and 30 communities. Lastly, improved wells will be installed in 36 appropriate (technically and financially) locations, supporting the overall effort of this component to use scarce water more efficiently.

EXPECTED IMPACTS

Capacity building, awareness and knowledge management at national level.

- four regional workshops were organised with the regional climate change committees to inform on the implementation of the NAPA (National Adaptation Plan of Action) and to better define the adaptation needs by target groups. These workshops had high political visibility as they were chaired by the governors of Kaffrine, Kaolack, Fatick and Diourbel regions.

Water harvesting and watershed management.

- To date, the project has identified 69 potential sites for water harvesting, and 22 sites have been selected for priority activities.
- Hydrology and socio-economic assessments have been undertaken in six additional sites in Fatick, in cooperation with the UCAD (Département Géologie et Ecole Supérieure d'Economie appliquée). The project will implement water harvesting investments in late 2015.

Water conservation and efficient irrigation

- To date, 77 hectares of rice fields have been put under irrigated production serving six farmers' organisation and have benefitted about 3,000 persons.
- The project has supported the establishment of certified seeds production for the Nerica seed variety. This variety is well adapted to the reduction in the number of rainy days and the overall water availability problem in the project area.
- 10,000 halophytes plants (adapted to salinity) have been produced to protect and rehabilitate saline fields.
- The project established two dykes of about 3 km in total length in Ndiaye and Ndiémou. Three drainage systems were also established and an additional one was rehabilitated.

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