

Case Study to be submitted to the Transitional Committee working for operationalization of new Loss and Damage Fund and Funding Arrangements

THEMES	COUNTRY	PRESENTATION
SEA LEVEL RISE	Sénégal	<p>Developed on a coastal line of just over 700 km, the Senegalese coastline concentrates most of the socio-economic and cultural activities of the country: fishing, tourism, horticulture, livestock, mining and energy resources exploitation; it crosses 6 administrative regions of the country (Saint-Louis, Louga, Thies, Dakar, Fatick and Ziguinchor), and is home to 60% of the Senegalese population.</p> <p>The coastal system of Senegal is subject to various risks: erosion and recession of the coastline, and marine submersion during storms. Estuarine areas, due to their particularities, are also exposed to other types of risks, in particular fluvial flooding (maritime conditions have an influence on the flow and evacuation capacities of floods) and water salinization. All these risks are directly impacted by the effects of climate change.</p> <p>The studies carried out in the framework of the National Determined Contribution have highlighted the following elements on the state of the sea</p> <p>1. Sea level Average sea level rise of 1.4 mm per year has been noted. For the last 50 years, an average rate of coastline recession of between 1 and 1.30 m/year has been observed.</p> <p>2. Sea surface temperature Sea surface temperature increase of about 0.04°C to 0.05°C per year since the early 1980.</p> <p>2. Wind speed High variability in wind speed over the 1981-2010 period. Wind strength still remains on a downward slope between 2010 and 2015, with peaks up to over 6 m/s. Projections for the 2030 and 2080 horizons predict a rise in sea level of 20 cm and 80 cm respectively; an increase in storms and marine submersions; an increase in ocean temperatures of 1.12 to 1.23° in 2030 and 2.65 to 4° in 2080.</p> <p>Current and expected impacts:</p> <ul style="list-style-type: none"> - destruction of infrastructure (fishing wharves, houses, tourist establishments) - displacement of populations -salinization of water tables and agricultural land - submergence of low-lying areas

		<ul style="list-style-type: none"> - generalized recession of the coastline - loss of biodiversity - loss of mangroves - reduction in size and/or disappearance of certain islands. <p>To reduce the already visible impacts, the State of Senegal, with the support of some partners, has put in place some initiatives to reduce the vulnerability of the coastline. These include</p> <p>1. The project "Adaptation to coastal erosion in vulnerable areas.</p> <p>This project financed by the Adaptation Fund (US\$ 8,619,000) has made it possible to :</p> <ul style="list-style-type: none"> - the construction of a 730 meter coastal protection dike to protect populations and infrastructure from heavy swells and storms; - Rehabilitation of fish processing areas - rehabilitation and protection of a fishing wharf; - Construction of a 3300 meter anti-salt dyke to reclaim land for rice cultivation. <p>2. Project for the development of tourism and enterprises (Pdte) for the restoration of the beach of the seaside resort of Saly</p> <p>The disappearance of much of this beach had led to the cessation of activities in four hotels and impacted 17 others, with layoffs. To prevent this sector, which contributes up to 7% of the national GDP, from going under for good, the State took the decision to breathe new life into tourism in the seaside resort and to help Saly regain its dynamism in the tourism sector.</p> <p>Thus, in partnership with the World Bank, the State of Senegal has decided to invest 23 billion on works and achievements that will remove the cause of coastal erosion but also restore the beaches of Saly in record time on a functional line of 7 kilometers, with 4.5 km of recharge.</p> <p>«These are very complex solutions of dedicated expertise and the State of Senegal has leaned on the Dutch expertise in this area, in relation with all the technical services. And all the studies carried out have led to solutions for the realization of 12 breakwaters and 7 groynes to retain the waves. These structures have been sized to withstand the most aggressive and highest swells.</p> <p>With a financing of 23 billion FCFA, the groin has allowed to recover the beach on 7km long and 50 meters wide</p> <p>.</p>
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FLOODS		<p>Senegal, a coastal country, geographically exposed to risks and disasters as well as to the effects of climate change, is facing recurrent floods. During the last twenty (20) years, the country has experienced several episodes of flooding (2005, 2009, 2011, 2012, 2016, 2019, 2020, 2022) affecting particularly the capital Dakar, its suburbs (Guédiéwaye, Pikine, Keur Massar, etc..) and most regions including St. Louis, Kaolack, Diourbel, Kédougou, etc.. Flooding is one of the most serious problems in Senegal and has been a major concern of the Government for the last three (3) decades. They affect both urban and rural areas (Government of Senegal, 2010).</p> <p>The magnitude, frequency and damage caused by these floods are increasingly significant for the country because they lead to increasingly devastating effects. Not only is public and private infrastructure (roads, bridges, schools, hospitals, markets, crop fields, etc.) damaged in many localities, but household property and assets are also destroyed. These factors rapidly lead to a deterioration of the living conditions of the populations in the affected areas.</p> <p>The study conducted in 2009 by the World Bank had estimated the losses related to the floods at 104 million USD, including nearly 56 million in damage and 48 million in losses. To these losses must be added the cost of recovery and reconstruction estimated at 204.6 million USD. In terms of damage, the sectors most affected were housing (49%), health (14%), agriculture (11%), education (10%) and transport (8%). Houses, schools, health centers and roads were severely damaged. Losses were mainly in commerce (20%), urban community infrastructure (15%), housing (16%), energy (14%), and transportation (14%). These sectors account for nearly 80% of losses. The private sector is the most affected, accounting for 65% of the damage and 64% of the losses.</p> <p>The evaluation of the ten-year program (2012-2022), implemented by the State of Senegal and evaluated in 2021 showed that Senegal has spent 511,134,298,456 billion CFA francs.</p> <p>The projections carried out within the framework of the National Adaptation Plan concluded that with the demographic growth, the evolution of the urban ecosystem and the development dynamics transcribed in the various development documents, Senegal could be exposed to chains of sometimes irreversible impacts.</p>

		<p>To cope with the impacts of floods, the State of Senegal has put in place integrated flood management.</p> <p>Financed by the Green Fund to the tune of 15 million euros, the project will focus on:</p> <p>Mapping the flood risk by crossing the flood hazard and the vulnerability of the territory to illustrate the flood risk at national level</p> <ul style="list-style-type: none"> - a detailed mapping of the flood risk at the 1/5000 scale of some urban areas selected according to their exposure; <p>Produce tools for the prioritization and design of infrastructures;</p> <ul style="list-style-type: none"> - Implementing rainfall-runoff models to identify critical areas at the watershed level; - Carry out real-time monitoring of the hazard, particularly in the outskirts of Dakar, by acquiring a radar system coupled with a network of rain gauges to anticipate major rainfall events to anticipate major rainfall events; - Supply and install piezometers to improve the knowledge of the water table; - Prevent the risk by optimizing the management of drainage infrastructures and strengthening the warning system; - Implement strategic planning to guide integrated flood management investment plans;
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