



CONVENTION – CADRE DES  
NATIONS UNIES SUR LES  
CHANGEMENTS CLIMATIQUES

## UNFCCC expert meeting

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# Adaptation to coastal erosion

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### Senegal : A vulnerable coastline

The Senegalese coastal already experiences acute environmental problems such as coastal erosion (with rates between 1 and 2 m per year ; Niang et al, 2010), pollution, degradation of mangroves and salines intrusion in coastal aquifers and rivers (Niang-Diop et al, 1994). In this context, climate change should be considered as a potential accelerator of existing disturbance in the coastal zone

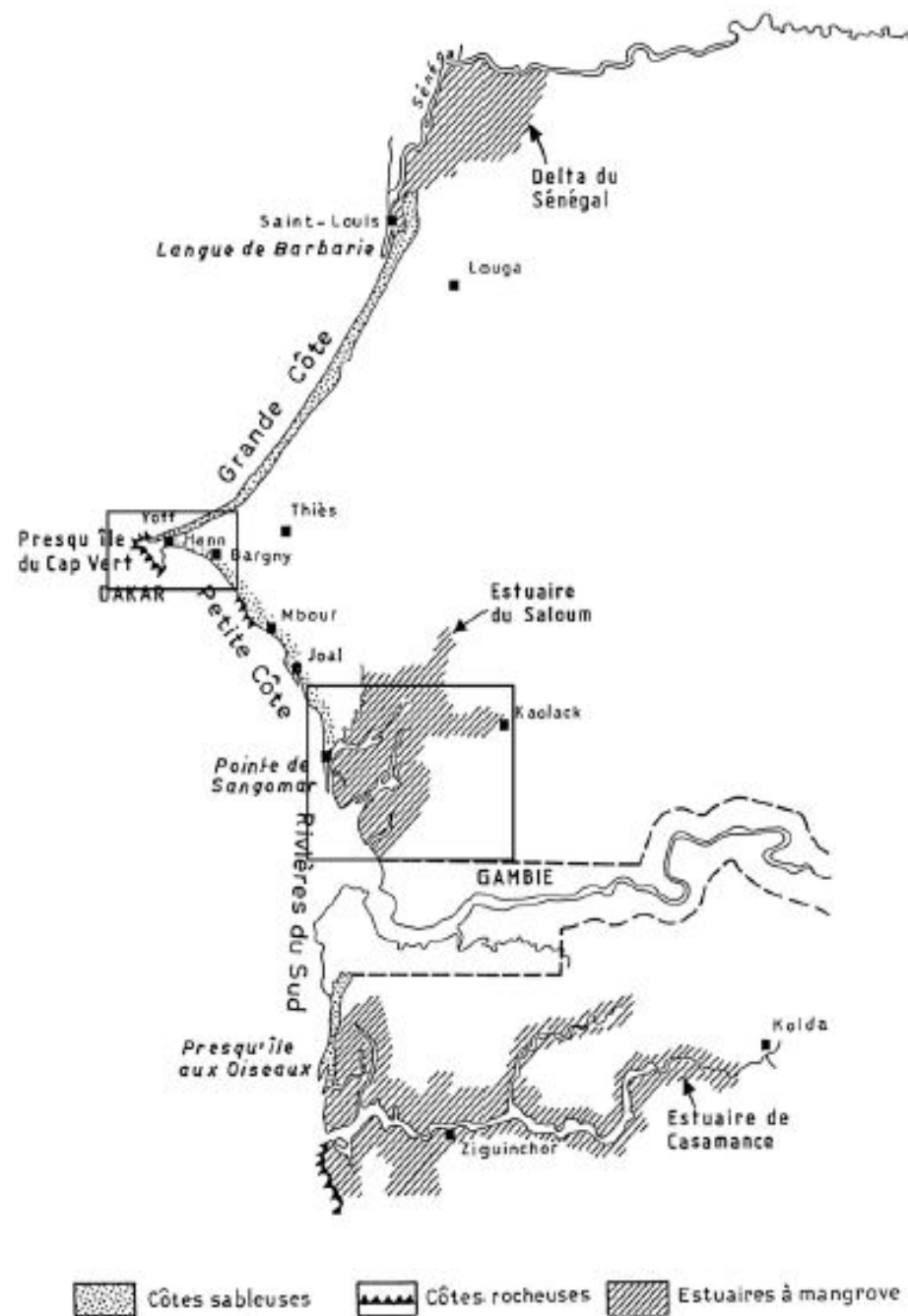
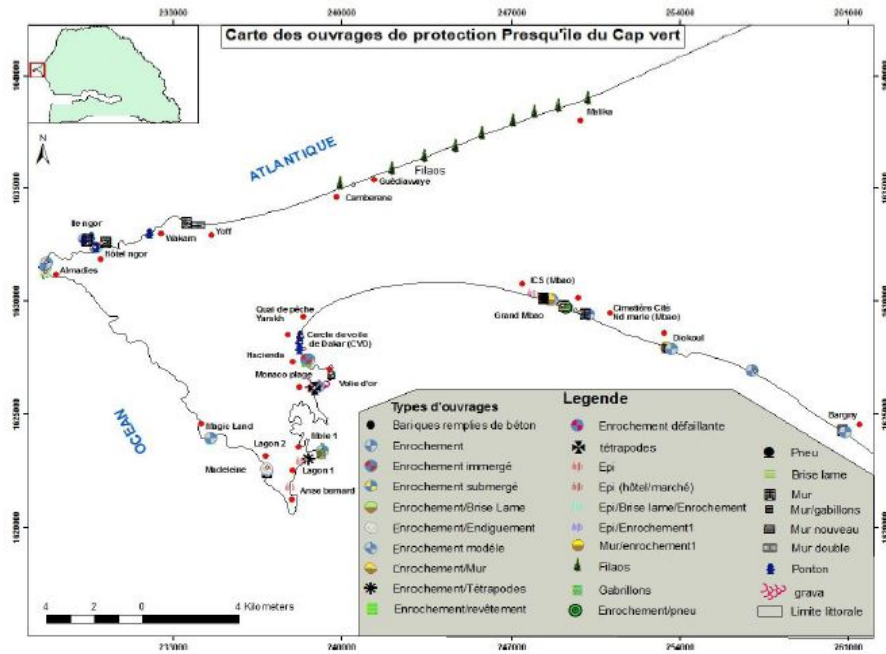


Fig. 1. Localization of the two case studies.



Evolution Sangomar sand spit between 1986 and 1993 (in Thomas et Diaw,1997)



a. 9 May 1986



b. 25 April 1991



c. 21 October 1993



Sangomar sand spit en 2010 (source : Google)



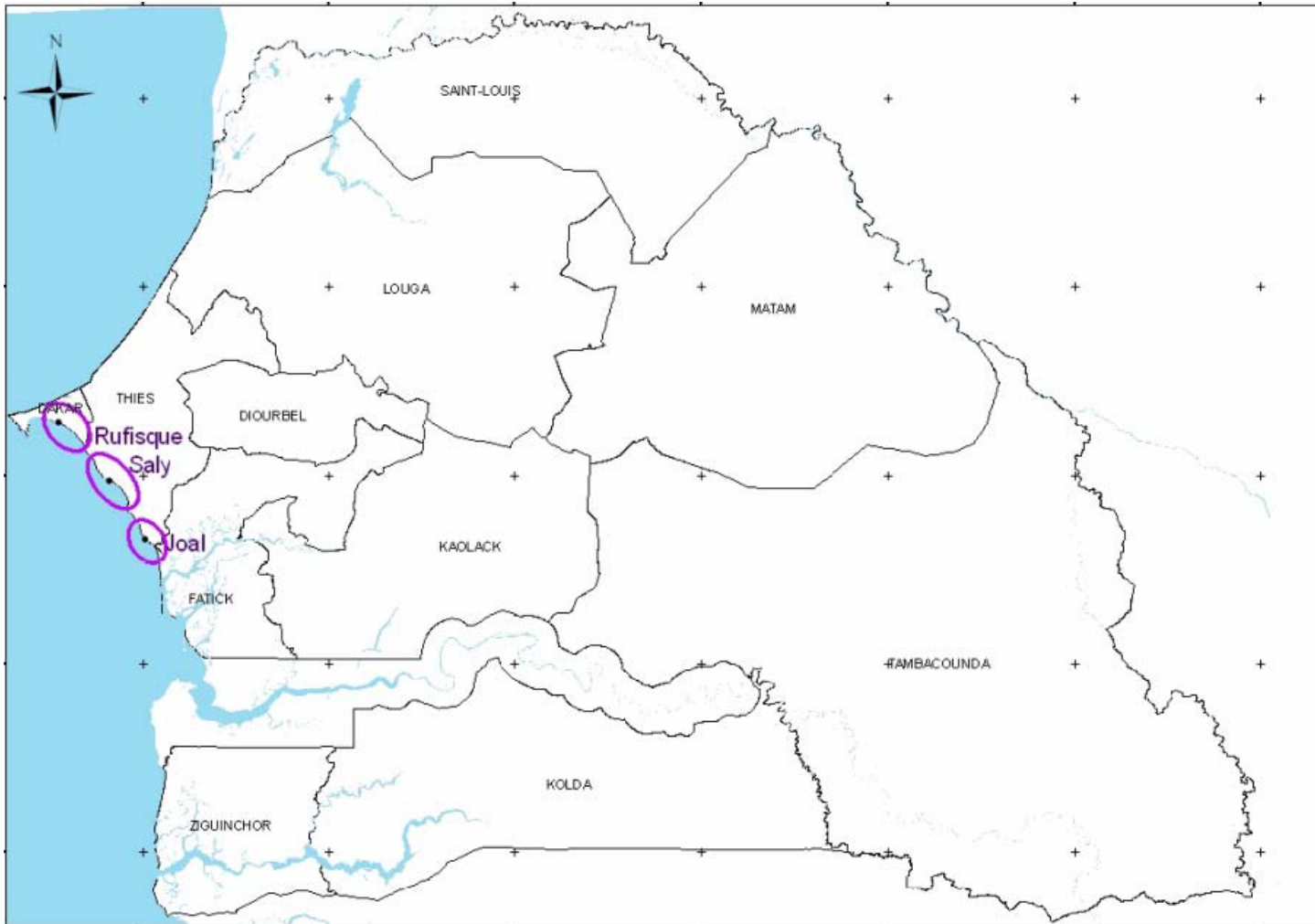
# PROJECT

**“Adaptation to coastal erosion in vulnerable areas” and  
“INTAC project”**

2 years (2011 / 2012)

## **Main component of the 2 project :**

- ✓ Strengthening of the protection and development of the littoral: beach, fish processing areas
- ✓ Development, strengthening, and implementation of the regulation on coastal protection and the adaptation to climate change
- ✓ Effective mainstreaming – Finding practical ways of integrating climate change into mainstream national development priorities



**Description of the program sites**

## Methodology

(i) The sea level rise scenarios deduced from warrick et al. (1996) and Niang et al. (2010) are used to determine the coastal erosion

	2050	2100
Sea level rise		
- Low hypothesis	7 cm	20 cm
- Middle hypothesis	20 cm	49 cm
- High hypothesis	30 cm	86 cm

(ii) For the impact assessments, project considered land losses due to coastal erosion. The coastal retreat due to sea level rise was determined using ArcGIS from land use map from satellite image.

Two types of socio-economic impacts were assessed: population at risk and economic value at risk. The last one was based on an estimation of the value of houses, industrial capital, production and roads present in the coastal zones



## Types of vulnerability

Area of concerns	Physical vulnerability	Biological vulnerability	Economic vulnerability
<b>Rufisque</b>	Inundation zones	<b>Zone de nurserie /reproduction</b> Zone protégées	<b>Major cities with significant population and infrastructure</b>
<b>Mbour</b>	Low lying coast Rivers mouths	<b>Nursery area / reproduction</b> protected area turtles	<b>touristic infrastructure</b> Fishing infrastructure Major cities with significant population and infrastructure
<b>Joal</b>	Low lying coast	<b>Mangroves</b> <b>Area protected</b> Turtles manatee	<b>Fishing infrastructure</b> Touristic infrastructure Major cities with significant population and infrastructure

## approches to address loss and damage

### Non-structural-mesures

- ❖ Training and awareness rising
- ❖ Strengthening of the protection and development of the littoral: beach, fish processing areas
- ❖ Development, strengthening, and implementation of the regulation on coastal protection and the adaptation to climate change
- ❖ The processes of revision of the Environment code and formulation of the law on the littoral are in a very advanced stage
- ❖ Communication

## approches to address loss and damage

### Structural mesures

- ❖ Building up of coastal protection facilities in the areas of Rufisque and Saly
- ❖ Building an anti-salt dike in Joal
- ❖ Replanting mangroves in Joal's coastal area

# Structural mesures



**THANK YOU FOR YOUR ATTENTION**