

Case Study on Green and Grey Infrastructure and Policy Responses to Coastal Erosion

You are part of the interministerial committee for the development and the resilience of the littoral, of the country Bella Costa. You are meeting for the first time, and the objective of the meeting is to answer the following questions:

- 1. In the case study presented, what solutions do you propose to deal with the problems of coastal erosion?**
- 2. How can investment priorities be selected for this coastline? (*Against a backdrop of growing demographic pressure on coastal resources as well as climatic and environmental instability?*)**
- 3. What is the role of different stakeholders (in particular, private sector, communities and government) in protecting this coastline?**
- 4. What support/information/advice can the various stakeholder provide to each other?**
- 5. Is there any other information/resources required to address these challenges - e.g. human capital, political will, finance, science and data – and how these best be leveraged for African coastlines?**

The capital Nootuva of Costa Bella is experiencing an increasing demographic pressure, which led to an archaic land use on the coast over the past years. New areas have been built outside of the historical boundaries of the city and took over the former areas dedicated for crop growing. These new constructions had an impact on the overall use of sand for construction, which also induced an increase in legal and illegal extraction of marine sand to produce concrete.

The economic engine of Nootuva is the industrial harbor of Tevana, built few decades ago. In order to increase its capacity, and therefore to allow to continue the economic development of the country through exports of goods by the sea, the port authorities would like to expand the harbor, by, among other, extending the jetties towards the sea.

This solution would allow the country to fulfill its ambition to modernize the port to bring it to international standards and build there a free economic zone which would increase the regional and international business as well as the attractiveness of the port for national and international investors.

However, such a construction is likely to exacerbate the coastal erosion issue by blocking furthermore the longshore sediment's transport, estimated around 800,000 m³/year.

However, in the area located south of the port, already affected by erosion, is living a community of traditional fishermen (around 2,000 people). This community has already been heavily affected by coastal erosion, which lost dozen of houses, its church and is now facing the threat of seeing its cemetery disappear soon if nothing is done to reduce coastal erosion. An expansion of the port would likely put the village at risk to disappear in the next 5 years.

The village is surrounded by an old mangrove widely recognized as a biodiversity reserve and which designation as a protected area is currently under consideration. The mangrove has been severely degraded over the past decades because of the use of mangrove wood for fish smoking, home construction in the village, and aggressive erosion. Further South, the mangrove straddles the border between Costa Bella and the neighboring country, about 30 kilometers from the capital city.

To the East of the village, on the other side of the international coastal road, urban expansion from the capital city has led to an intensive use of land for vegetable farming.

To the North of the industrial port, the expected accretion of sand is already attracting real estate developers who are lobbying to secure this potential new land to build tourist resorts and luxury hotels including a marina. These investments would allow Nootuva to develop the luxury tourism segment of its economy.

Costa Bella recently authorized oil exploration in its Exclusive Economic Zone (EEZ). A first oil deposit was discovered to the South of the capital city; however, it straddles Costa Bella's EEZ and that of the neighboring country, Costa Brava. The two countries have engaged in a diplomatic wrestling match to determine how to share the oil deposit's exploitation rights.