

Safeguarding the Resilience of West African Coasts to Climate Change – the role for the private sector

Engaging the Private Sector on safeguarding West African Coasts from Climate Change



Example of hard engineering solutions, a concrete and wooden groyne, Photo Credit: Nigel Chadwick

Local businesses have an important role to play in preventing and managing natural and human induced hazards to safeguard the West African coasts from climate change effects. Countries in West Africa are expected to have a continued accelerated economic growth with rates exceeding 5% over the long term (UEMOA–IUCN 2011). This growth will support the pace of urbanisation throughout the region, which will see a reinforcement of the concentration of economic activity along the coast, with the building of heavy industrial plant and the development of agro-industrial production. However, these activities, if not well planned and managed, can exacerbate the effects of climate change, which in turn

can affect local coastal communities as well as having a serious impact on the projected economic growth. There are ways in which the private sector can grow in a sustainable manner while ensuring the protection of the environment and safeguarding the resilience of West African coasts to climate change.

- Economic growth at the coastal zones in West Africa will be related to hydrocarbons, fishing and tourism resulting in continued population growth at the coastal region (Akubia, 2016).
- Continued bad practices at the coastal regions (for example, sand mining) will result in future economic loss greater than that of the benefits currently gained.
- Adaptation and resilience costs for climate change in coastal regions are much lower than compensating for damages. It makes more economic sense to adapt the coastal areas to be more resilient than to rebuild after a devastating weather event.
- Economic benefits can be gained from implementing climate sensitive businesses.

Challenges

The allure of economic growth in the coastal areas of West Africa from fishing, hydrocarbon extraction and tourism presents a significant challenge to the environment and the future sustainability of the area. The challenges in preventing and managing the natural and human-induced hazards in coastal areas are mainly related to:

- Human activities resulting in localized accelerated and severe coastal erosion and environmental degradation that magnify the risks of coastal flooding and other climate related risks. This in turn leads to risks of decreased economic activities, job losses and extensive long-term costs to the local economy.
- The natural hazards of increasing intensity such as rainfall events or severe wave action, affect local industries, road networks etc. This results in enormous annual costs for repairs, which has a negative impact on the future expansion of infrastructures for instance.
- To “climate-proof” infrastructure comes at a high cost but it is necessary for social and economic advancement.

Potential Solutions

There is an economic opportunity for local businesses to implement engineering solutions to restore natural environments and their associated ecosystem services. The types of soft engineering activities that local businesses can implement are:

- Artificial beach nourishment (or replenishment)
- Restoration of dunes
- Mangrove restoration
- Implementing natural protection barriers such as crushed rock
- Rehabilitation and/or constitution of natural habitats to enhance nutritional cycles

In some cases heavy engineering solutions will also be relevant, these could include:

- seawalls
- groins
- beach revetment

Furthermore, restoration is associated with a net gain to society in long-term economic benefits. Companies can hire local workforce while offering business activities that

can create secondary business opportunities such as engineering and consulting studies and service industry etc.

There are also opportunities to reduce the vulnerability and exposure to climate change through improved communication and advanced warning systems that can be implemented by local businesses (such as communication companies, local radio, TV, etc.). Information Technology and Communication (ITC) and data-sharing applications, present a significant opportunity to local businesses. These can include aspects such as:

- Automatic methods to compute fish resources for coastal fishery using real-time fishery information.
- Establishment of mechanisms to access environmental data generated by global geo-satellites.
- Early warning systems and remote sensing equipment, which can enhance decision-making abilities and contribute to disaster relief.

EXAMPLES OF BEST PRACTICE

The Danish North Sea Coast

In the late 1800s, there were large sand erosion problems on the North Sea coast. Traditional groins were constructed on some stretches around the 1900s (Wilmink 2017). However, since the 80s’ the central part of this exposed coastline has been stabilised by beach nourishment, 2-3 million m³/year whereas other stretches have been left to natural erosion. This strategy has proven economically beneficial and provides a natural, sustainable coastal environment. Fishery ports on this coastline are specially designed to allow for maximum natural by-pass of sediment to minimise down drift erosion, and maintenance dredging which is often a major burden for smaller fishing ports.



Furthermore, beach nourishments are seen as one of the more economically sound interventions that can be undertaken by local companies. However hard engineering solutions (the strengthening and heightening of seawalls and quays storm surge barrier etc.) are chosen in this case when soft measures weren't technically possible. The hard engineering solutions present real economic opportunities to local business including unskilled local labor.

This case study example illustrates how soft (restoration of dunes etc.) and hard (seawalls etc.) engineering and technical options can and should be implemented by local businesses to climate proof the coastal areas, which aids in economic stability and long term growth for the area (Wilmink 2017).

The case study shows that local businesses can find economically sound business opportunities to prevent and manage natural and human induced hazards to safeguard the West African coasts from climate change impacts.



The photo and figure give an illustration of where coastal erosion was taking place and how hard and soft engineering solutions has prevented further coastal erosion. Photo: Kystdirektoratet

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The West Africa Coastal Areas Management Program (WACA) is a convening platform that aims to assist West African countries to sustainably manage their coastal areas and enhance socio-economic resilience to the effects of climate change. The program also seeks to facilitate access to technical expertise and financial resources for participating countries.

