

ACE Impact
Pre-identified Regional Development Challenge
Coastal Degradation

Terms of Reference

Guidance

Proposals that respond to the Coastal Degradation Pre-identified Regional Development Challenge should address the following Terms of Reference (ToRs) in the appropriate section of the proposal. While it is unlikely that a single proposal can address all of the ToRs, the proposal should make a substantial, credible effort to respond in a way that presents a cohesive, integrated program of education, research and partnership activities that aligns both with the ToRs and with the goals of the ACE Impact project.

Background

The West African coastal areas (WACA) are home to almost one-third of the countries' population. Rapid urbanization and net migration to the coast increase the demands on the land, its resources, and the services its ecosystem provides to people. The coastal population – especially the poor, whose livelihoods depend on the quality and quantity of natural resources - is increasingly vulnerable to the effects of climate change.

The sandy coastal areas are eroding at many locations, and the highest rates of retreat (in the order of 10 meters per year or more) occur near river mouths and harbor jetties (e.g. in the most urbanized areas). The situation is further compounded by the lack of coordination of anti-erosion solutions, at local, national, and international levels. The shoreline is subject to: severe recession due to construction of major infrastructure interrupting sediment flow; degradation of natural formations serving as buffers against the sea (mangroves); extraction of sand from dunes and the multiplication of dams on rivers; and poorly designed and inadequately managed groynes, seawalls, and breakwaters that deprive these fragile coastal areas of important sediment deposits.

Countries adopting Integrated Coastal Zone Management (ICZM) require a set of institutional and technical competencies - from civil engineering to land-use planning, and multi-sectoral coordination. It is important that West and Central Africa build the capacities (in the public and private spheres) to lead and coordinate these technical studies and to develop national strategies.

Terms of Reference

- I. The selected Africa Center of Excellence in Coastal Degradation will consider the following skills related aspects of the Development Challenge
 1. Coastal engineering (design of adaptation solutions for coastal risk reduction)
 2. Forestry engineering for nature-based solution
 3. Maritime meteorology and oceano-hydrology modeling
 4. Natural capital accounting
 5. Coastal zone land-use planning

II. To address the skills needs, long-term degree programs available through the Center should include:

Master's Degree Programs
1. M.S. in Coastal and Marine Engineering and Management
2. M.S. in Maritime Meteorology
Ph.D. Programs
1. Ph.D. in Coastal Engineering
2. Ph.D. in Coastal Zone Management

III. To address professional trainings needs, short term courses should include:

Short Term Courses
1. Coastal Structure
2. Use of Nature-based Solutions for Disaster Risk Management (DRM)
3. Use of Remote Sensing for Coastal Area Monitoring and Management

IV. The selected Africa Center of Excellence in Coastal Degradation will undertake an applied research program that includes the following themes:

Applied Research Themes
1. Impact of Eco-systems in the Region on Risk Reduction
2. Future Weather and Sea-conditions Forecasting
3. Integration of the Values of the Eco-systems in National Budgets and Planning
4. Application of Economics of Natural Capital Approaches for Nature-based Solutions to attract Private Enterprise
5. Poverty Co-benefits of Eco-system based DRM Measures
6. Prediction of Changes in Sediment Balance Because of Human Interventions (dams, groynes, ports)
7. Sediment Management and Co-benefits

V. The selected Africa Center of Excellence in Coastal Degradation will have an established network of core industry/sectoral partners identified in the proposal, including:

1. Engineering companies
2. Port and infrastructure management companies
3. Representatives from the tourism sector
4. International organizations with significant activities focused on coastal degradation.

VI. The selected Africa Center of Excellence in Coastal Degradation will have an established network of academic and/or research institute partners identified in the proposal, including:

1. Regional universities that maintain active education and/or research activities focused on coastal degradation
2. Recognized global universities that maintain active international research collaborations focused on coastal degradation.