



Empowered lives.  
Resilient nations.

## Delhi Sustainable Development Summit 2015

### Thematic Track\_ Concept Note

#### Oceans and Seas: Improved Understanding and Sustainable, Community-Led Governance and Management of Coastal Ecosystems

Coastal ecosystem is an important connecting link between land and sea, and is source of food, energy and livelihood for the local communities. Coastal areas are rich in biodiversity consisting of mangrove forests, coral reefs and estuarial ecosystem. Coastal ecosystems have always been a favourite choice for human settlements, and today they support 44% of world population living within 150 km of the sea. In South Asia, coasts are home to about 400 million people; with 250 million in India only.

However, the coastal and marine areas are under continuous stress and given that they contribute to the national economy and have ecological richness, they have not received adequate attention and protection. The critical components of the coastal ecosystem like wetlands, estuaries and coral reefs are at greater risk, which are the most biologically productive environments in the world. As a result of these threats, it will disturb the precious ecosystems, threatening their ecological sustainability and the ecosystem services they provide to human populations. It also poses an immense threat on the productivity, distribution and seasonality of fisheries, thus impacting the livelihood activities of most of the rural people who are dependent on coastal environment for their daily wages. As per an estimate around 34 percent of mangroves of India were destroyed in last five decades, and there has been rapid decline in the number of many marine species. This degradation of coastal ecosystem immensely impacts dependent communities. There are many factors which have led to over-exploitation of natural resources in this region. Some of these factors include but are not limited to rapid urbanization, industrialization, maritime transport, marine fishing, tourism, oil and natural gas production, aquaculture, etc. The combination of discharge of raw sewage and untreated industrial waste has caused serious degradation of coastal environments. Some of the largest urban agglomerations of India – Chennai, Mumbai and Kolkata are located on coasts. This unhealthy depletion and degradation of coastal ecosystem needs to be curbed before it takes a toll on the economic growth of the coastal regions.

Additionally coastal ecosystems and dependent communities are facing more threats in face of changing climate, which makes them more vulnerable. The main threats that are imposed on coastal areas due to climate change include sea-level rise, sea water intrusion, coastal flooding, salt water intrusion and inundation of coastal lands. Already 30% - 35% of the coastline of Srilanka is eroded at the rate of 0.3 - 0.5 meters per year. This will further increase with anticipated sea level rise, which will occur due to the projected increase in temperature. It can have a serious economic impact on the tourism industry thriving in the coastal areas. Due to coastal flooding, there will be submergence of land which will have an impact on the coastal agriculture. Also, as a result of salt water intrusion most of the land will become futile for cultivation due to increase in salinity. These impacts of climate change are also due to anthropogenic activities causing ecosystem disturbance. Coastal wetlands and marine ecosystems hold vast stores of carbon. Occupying only 2% of seabed area, vegetated wetlands represent 50% of carbon transfer from oceans to sediments. This carbon can remain stored in buried sediments for millennia, but loss of coastal wetlands and marine ecosystems leads to decreased carbon sequestration and can also lead to emissions of large amounts of CO<sub>2</sub> directly to the atmosphere. This vicious circle of cause and impact of climate change is having a deleterious impact on coastal ecosystem. Joint and integrated efforts are needed to look for solutions that can solve this multifarious problem. Some of the new approaches like co-management, Payment for Ecosystem Services are deliberated amongst various stakeholders. These approaches have potential to solve this problem to a large extent. These approaches are implemented as part of some of the important projects carried out by different coastal regions across world.

According to UNDP 'ecosystem based adaptation' involving sustainable management, conservation, maintenance and restoration of ecosystems to provide services, could provide a holistic approach for

Integrated Coastal Zone Management projects that could help people adapt to both current climate variability and climate change.

However, foundation for any ecosystem based adaptation initiative lies in the active participation of all the stakeholders including the local communities. The participation of communities need not to be limited to “community-based” approaches, rather they need to be “community-led” or “community-driven” approaches providing a sense of ownership to the communities. One of the benefits of working through local community based organizations is that it lowers the transaction cost involved and it also allows for scaling up of successful cases and lessons learnt. This approach provides platform for policy and advocacy work with significant impacts in terms of social and environmental governance, which leads to informed decision making. A holistic community led management approach should also incorporate use of adaptive management tools; participatory planning with all stakeholders; ensuring horizontal and longitudinal integration & coordination of stakeholders across different levels; use of a combination of instruments, such as social, regulatory and technical measures.

The outcome of this session will help to exchange the knowledge and information on the common platform about various approaches being adopted for integrated coastal ecosystem management, lessons learnt, challenges faced and options for effective and sustainable coping practices with effects of climate change on coastal parts of the region.

Question 1: How can community based management and ecosystem based adaptation approaches be integrated to create resilience to climate related coastal disasters?

Question 2: What mechanisms are needed to create more sustainable livelihood options through community led governance and management of coastal ecosystems?

Question 3: Can the new approaches like Co-management, Payment for Ecosystem Services lead to improved community involvement in coastal ecosystem management?