

A survey Report on the Meeting on Arab Climate Resilience Initiative

Second Regional Consultation Meeting

“Climate Change Impacts in the Arab Region: Sea level Rise, Coastal Erosion
and Human Development”

Cairo 20-21 September 2010

Opening:

The opening of the meeting started with a talk by the UNDP Resident Representative in Egypt, Mr. James Rawley, who welcomed participants and expressed interest of UNDP in supporting activities to find adaptation solutions to the various impacts of climate change.

Dr. Adel Abdellatif emphasized the need for adaptation measures taking into consideration population growth and demographic changes and shortage of water resources. He emphasized the multi – faces of climate changes and the need for an Arab Climate Resilience initiative.

Mrs. Fatma El Mallah, Advisor to the Director-General on Climate Change, surveyed the work in progress at the League of Arab States (LAS) and emphasized the extreme interest of LAS to develop strategies addressing problems of climate change in the Arab world with particular emphasis on the potential impacts of sea level rise on the extended coasts of the Arab states.

Dr. Shaden Abdel Gawwad, President of the National Water Research Center in Egypt expressed concern of the Water Resources authorities on availability of water resources and safety of the coastal zone. She has identified a number of problems of main concern as:

- Insufficient data and information
- Ambiguity of responsibilities
- Poor public participation in decision making processes
- In-adequate cooperation and coordination between stakeholders
- Conflicts between resources uses
- Loss of properties due to land and shoreline erosion,
- Sea level rise impacts on:
 - Groundwater quality and quantity
 - Patterns of waves and currents
 - Erosion and accretion systems due to currents, waves, and wind actions
 - Lakes ecosystems
 - Water resources and drainage systems
 - Fisheries due to changes expected in current patterns
 - Infrastructures and natural resources of the coastal zone of the Nile Delta

She has emphasized the work on climate change in progress at two centers of research, the need for better monitoring and her commitment to support these activities

Panel 1: Climate Change and Sea Level Rise

Panel 1 was chaired by Professor M.K. Tolba who emphasized that climate changes is unequivocal and that the need for immediate adaptation action became urgent on the level of all Arab states.

Professor El Raey presented a detailed survey and mapping of potential impacts of sea level rise on the coastal zone of Arab States based on national communications of member countries. He pinpointed existing conflicts and

most vulnerable coastal areas in various Arab States and emphasized the need for monitoring systems, institutional capability and proactive planning to reduce impacts.

Dr. Esam Heggy surveyed capabilities of NASA Jet Propulsion Laboratory (JPL) radar imageries in identification and assessment of polar cap melting as well as their capabilities to build Digital Elevation Models (DEM) through SRTM. He emphasized the need to build a strong monitoring system with a database in coordination with international organizations. He brought up the possible scenario of maritime route change due to climate change through the opening of the Northern Passage, which would have an impact on the the Suez canal.

Dr. Roberto Pitea of IOM emphasized key demographic expectations. He discussed drivers of mobility in the region and affirmed that unemployment and poverty remains the major drivers of mobility in the region

Panel 2: Impacts on the Environment from Increased Temperatures and Rising Tides

Dr. Abdellatif El Khatabi presented a study on inundation and coastal erosion in Moroccan coastal zone. He emphasized the impacts of inundation, coastal erosion and saltwater intrusion in the coastal zone and carried out DPSIR (Driving Forces-Pressures-State-Impacts-Responses - analysis) of the coastal zone. He emphasized the need for integration, institutional capability and proactive planning.

Dr. Gamal Bawazir emphasized the role of marine biological biodiversity and its potential deterioration due to climatic changes in general and sea level rise in particular.

Panel 3: The Socioeconomic Impact of Sea level Rise

Angela Santucci discussed the problem of migration as the greatest negative impact of climate change and sea level rise. She has also emphasized the role of extreme events in triggering natural disasters. She again emphasized the need for proactive planning. She also mentioned that migration can also be considered an adaptation strategy, as it can strengthen livelihoods through

remittances and transfer knowledge and skills? And that draught and SLR are slow onset disasters and thus require awareness from policymakers.

Dr. Benno Boer addressed the problem of impact of climate change on natural and cultural heritage and biodiversity in the Arab world. He emphasized that a lot of aspects still waiting to be addressed.

Dr. Mohammed Karrou of Icarda addressed the problem of low resilience of the Arab communities especially in agriculture. He emphasized the vulnerability of water resources and food productivity. He pointed out to the need for research on heat tolerant plants and salt tolerant plants.

Panel 4: Impacts and Measures- Country case

Dr. Osama Hamad surveyed activities of the World Bank in adapting to climate change and reducing risk in the region. He emphasized the project of the Bank on North Africa, which involved Morocco, Tunisia and Egypt. The project identified threats and addressed adaptation of the urban communities, infrastructures and preparedness.

Dr. Ibrahim El Shennawy of the Egyptian Coastal Research Institute addressed the problem of coastal vulnerability in Egypt and surveyed activities in progress to assess vulnerability of the coastal zone. He stressed the capability of Coastal authorities in identifying and treating vulnerable low land areas.

Dr. Hasan Mohannady addressed the vulnerability of the coastal zone of Qatar to potential impacts of climate change and the response of authorities. He emphasized the high vulnerability of the Eastern coasts. He emphasized the impact on urban areas, water desalination plants and beaches. He stressed the need for adaptation and upgrading of awareness.

Dr. Sabah Al Jeneid addressed the problem of impact of sea level rise on Bahrain. She estimated that a sea level rise of 50 cm would cause a loss of about 11% of the kingdom. She also stressed the role of SLR in enhancing erosion, identified and assessed pressures along the coastal zone of Bahrain.

Dr. Suaad El Harthi addressed the problem of the impact of sea level rise in the United Emirates. She identified low land areas and stressed the vulnerability of ground water resources to saltwater intrusion. She also stressed the need for action and surveyed initiatives to build up institutional capabilities for monitoring, assessment and decision-making as well as policy measures.

Panel 5: Meeting the Challenge of Sea level Rise and Coastal erosion

Amjad Abbashar of ISDR addressed the problem of climate change in the frame of disaster risk reduction. He emphasized the role of Hyogo framework of action and identified some of the opportunities for preparation and adaptation.

Dr. Ante Baric introduced the concept of ICZM and its objectives and Protocol in the Mediterranean region. He illustrated some of its benefits through application examples.

Dr. Jan Dietrich of NIRAS presented the study they carried out on the erosion pattern on the North West coast of Egypt. He stressed the need for ICZM through a process of governance in the frame of a legal and institutional infrastructure to ensure integration with environmental and social goals and participation of those affected.

Dr. Jaap Kwadijk of DELTARES emphasized the impact of climate change on the ground water resources in the Arab world. He also stressed that sea level rise is nothing new except that it goes now faster and requires faster (immediate) action. He introduced a number of key points to take care of: Fresh water supply will be severely hindered through salt water intrusion; Storm surge barriers designed for SLR up to 50cm; Accessibility to Harbours hindered (Storm surge barrier needs to close more than once a year at SLR 75cm) and Coastal flood defence through sand supply. Dr. Kwadijk also brought up the importance of promoting public awareness, partnerships with private sector,

research prioritisation, establishing research groups under the League of Arab States and the need for applied science research and data sharing.

Dr. Abdellauhed Fikrat discussed development of ICZM in Morocco, gaps and experience of applications. He has reached important conclusions and recommendations concerning urban areas.

Dr. Ivo Bastings of Royal Haskoning presented traditional and recent approaches to upgrading coastal resilience through soft and hard structures for protection and maintenance.

Discussion

The discussion emphasized the following point:

1. The responsibility of the developing countries for developing climate change is well recognized by all nations. However, it should be noted that the responsibility of action for disaster reduction is placed under each country by Hyogo framework of action.
2. There are a variety of incoherent activities in progress and a strong capacity is being built at different countries of the region and we have to build on that and encourage it.
3. It is well realized that excessive urban activities on the coasts as well as oil and gas exploitation may give rise to land subsidence. This has been explored on the Nile Delta region using tide gauges and radar interferometry. Identification and assessment of land subsidence localities in the coastal zone of the Arab region are very important parameters to be monitored.

Conclusions:

1. Climatic changes are unequivocal; sea level rise has been detected and is being monitored in many places around the world by tide gauges. It is also being monitored by satellites
2. The Arab region is the most vulnerable region among, especially that it posses huge coastal areas and it already suffers from water shortage, droughts, extreme events and shortage of access to technology

3. The Arab climate resilience Initiative is timely needed for adaptation of the low resilience communities to potential impacts and risks of climate change with particular emphasis on sea level rise
4. Most Arab states has realized the seriousness of the impacts of sea level rise and their need for coordination, integration and exchange of experience
5. Risks associated with land subsidence due to excessive urbanization and oil and gas extraction in the coastal zone have to be closely monitored and assessed.
6. Research activities such as salt tolerant plants, drought tolerant plants and heat tolerant plants should be emphasized.

Recommendations:

1. Building up a common strategy for adaptation to sea level rise among Arab states that involves upgrading of community resilience is a long term process and should take first priority.
2. The need for building up indigenous capacity in various lines of monitoring, building databases (regional and national), analyzing and interpretation cannot be overlooked. Tools such as remote sensing, GIS and time series analysis and signal processing should be emphasized.
3. Upgrading institutional structure, monitoring changes, building databases and regional models are necessary tools. Monitoring should include installation of tide gauges, soil salinity monitors, and interferometric radar imagery analysis of urbanization in the coastal zone.
4. Research and technology that involves energy alternatives, salt and drought tolerant plants, desalination and conservation must be encouraged.
5. Large scale national projects involving reducing densities of vulnerable areas such as the Egyptian Nile delta should be explored and prioritized.

6. Upgrading infrastructure and awareness programs especially in low resilience communities should be of utmost priority.