



16 September 2015

## INFORMATION PAPER

SUBJECT: Republic of Maldives Environmental Sensitivity Index

1. Purpose. To provide stakeholders with the concept, background, description and objectives of the Laamu Atoll Environmental Sensitivity Index (ESI) mapping project in the Republic of Maldives.
2. Background. At the 2014 South Asia Regional Environmental Security Forum (RESF) hosted by the Republic of Maldives 2-5 June 2014, a Table-Top Exercise (TTX) was conducted. The scenario focused on an oil ship running aground near the 1.5 Degree Shipping Channel. During the TTX, participants quickly learned that there was no emergency plan in place which identified priority environmental response areas susceptible to oiling. As such, this project concept has been prepared to help develop a series of maps that identify sensitive biological, coastal and human characteristics for emergency responders to prioritize oil response cleanup actions.
3. General Description.
  - a) WHO:
    - The ESI project includes subject matter expertise (SME) in biology (marine and terrestrial), coastal sciences and engineering, Geographic Information Systems (GIS), and emergency management. SMEs have evaluated biological, coastal, and human-use resources for 44 islands in Laamu Atoll for their environmental sensitive and potential impacts to oiling from an incident occurring in the One and a Half Degree Shipping Channel. The results of this work can better inform disaster responders of priority actions if an oil spill where ever to occur in Laamu Atoll.
    - The U.S. Army Corps of Engineers (USACE), Maldives National Defence Forces (MNDF) and Maldives Environmental Protection Agency (EPA) form the core of the ESI team.
  - b) WHAT:
    - ESI maps provide a concise summary of coastal resources that are at risk if an oil spill occurs. Examples of at-risk resources include biological resources (such as birds and shellfish beds), sensitive shorelines (such as marshes and tidal flats), and human-use resources (such as subsistence gathering or fish processing).

- When an oil spill occurs, ESI maps can help responders meet one of the main response objectives: reducing the environmental consequences of the spill and the cleanup efforts. Additionally, ESI maps can be used by planners—before a spill happens—to identify vulnerable locations, establish protection priorities, and identify cleanup strategies.
- ESI maps:
  - Use GIS techniques to integrate maps of a region with geographically-referenced biological resources, human-use resources, and ESI-classified shorelines that are ranked based on their sensitivity to oiling.
  - Contain a summary view of ESI data on the back of the paper map, and GIS versions of the ESI data that can be used for more complex digital queries.
  - Serve as a quick reference for oil spill responders and coastal zone managers to prioritize actions.
  - Are available as a single map, or a regional collection of maps called an ESI atlas.
- ESI maps will be prepared for 44 islands in Laamu Atoll. The maps and supporting data will be stored in a GIS.

c) WHEN:

- This project was scoped in December 2014, and field data collection was performed from 9-20 August 2015. Final project deliverables are scheduled to be provided 13-16 March 2016. A workshop will be held to explain the final products.

d) WHERE:

- Laamu Atoll, Republic of Maldives

e) HOW:

- The U.S. Pacific Command has provided \$190K USD to complete the project. Funding will be used for labor, transportation and per diem for SMEs to conduct field work and gather information. Funding is also authorized to prepare the maps and atlas, conduct research, have materials reviewed, and publish the final atlas.

4. Objectives. The project objectives are:

- a) Prepare an ESI atlas of a prioritized area in the Maldives that is potentially vulnerable to oil spill;

- b) Promote awareness of oil spill risk and the impacts to sensitive environmental areas;
- c) Increase environmental protection and emergency response collaboration between the United States and the Republic of Maldives;
- d) Deliver an actionable project following guidance delivered at the 2014 South Asia RESF; and
- e) Develop a “network of networks” of experienced environmental planners to assist in operations and sustainability.

5. Points of Contact.

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