Executive summary

The Indian Ocean Islands region comprises the island states of Comoros, Mauritius, Madagascar and Seychelles which are situated in the Western Indian Ocean (WIO). The combined total Exclusive Economic Zone (EEZ) of the Island States within the region is approximately 4.1 million km^2. This provides the approximate limits of the region (between latitudes 5° N and 30° S and extending as far as 70° E). In terms of economic development, Mauritius and Seychelles appear to have met the basic conditions for sustainable human development, but considerable work is required in Madagascar and Comoros.

The most salient features of the region in the context of the Global International Waters Assessment (GIWA) is the very low proportion of land to sea, and the smaller size of Comoros, Mauritius and Seychelles in relation to Madagascar. However, Madagascar shows the vulnerability of an island state and is also biogeographically, hydrologically, and economically linked to the rest of the region.

The large size of the EEZs in the region means that the GIWA issues are mostly oceanic which are influenced by activities that happen on land. The assessment of transboundary issues is therefore done in a special context, as the Island States are separated by large expanses of ocean and do not share any coastal marine environments nor freshwater resources. However, long-range transport of pollutants, movement of human pressure across boundaries and the impacts of global change are all significant issues that need to be considered in an international waters and transboundary context.

The impact assessment showed that the levels of human impacts on natural systems and resources have increased. This human pressure on existing ecosystems and limited resources threatens several endemic and migratory marine species. Growth in fisheries and tourism are likely to be the most significant economic forces in the region in the next 20 years. However, impacts of global change, such as coastal erosion and coral bleaching, seem to be the biggest threat to development in the region. The assessment concluded that Pollution was the most significant GIWA concern for the region, followed by Global change.

Global change is indeed very complex and much more research is required before conclusive statements can be made. However, as concluded by IPCC (2001) there is now clear and discernible evidence of changes in the climate which are likely to cause serious modifications to the Earth's functioning over the next 50 to 100 years. The report concludes that those most affected will be the island states, including those in the Indian Ocean Islands region, and countries that are least developed.

Pollution in terms of improper disposal of solid wastes and eutrophication as a result of poor treatment facilities, was singled out as being the most severe concern in the region. The risk of oil spills in the region is also considered significant, since there is high tanker traffic from the oil rich countries of the Middle East. Other issues such as overexploitation of fish and habitat modification also received attention, implying that those impacts are very much linked to the presence of humans.

The problem of solid waste is indeed far-reaching. Although the majority of solid wastes are generated on land, a huge proportion ends up in the coastal and ocean environment causing degradation of ecosystems and economic impacts. The main impacts of solid waste in the region are: (i) pollution of groundwater, surface water, and wetlands; (ii) risks for human health; (iii) degradation of coastal marine environments (including coral reefs) and tourist attractions such as beaches; (iv) possible disease outbreaks and the destruction of fisheries; (vii) accumulation and toxic effects of leachates; and (viii) eventually impact on the economy.

The causal chain analysis identified four root causes:

Root cause 1: Lack of investment planning and priorities.

Root cause 2: Lack of effective mechanisms, inadequate institutional structure, laws and capacity.

Root cause 3: Lack of adequate facilities, services for collection and management of wastes.

Root cause 4: Lack of education and awareness.

Although some of these root causes may not be considered the absolute root cause of the problem, they are appropriate targets for policy interventions. Factors that are more widely recognised as root causes, such as population growth and increased consumption, can take years to redress and therefore, are less amenable to policy interventions.

The policy options analysis resulted in more than 30 possible policy options. However, when these were evaluated in their regional context for efficiency, equitability and practicality, only a few could be feasibly implemented, although in some cases local conditions will need to be taken into consideration. Further analysis of these selected policy options generated a series of recommendations as the key output of this report. These outputs are:

1. To perform a national survey of products/wastes that will form part of a refundable deposit system.
2. Reduce taxes on waste separation and treatment technologies.
3. Tax the disposal of solid wastes by industry.
4. Implement tax incentives to improve the quality and encourage use of recycled products.
5. Subsidies are provided (a) to the municipality to commence a waste collection service, and (b) to the private sector to facilitate investment in waste minimisation/treatment.
6. Establishment of a regulatory framework.
7. Development of emissions standards for landfills, etc.
8. Improve compliance through stakeholder involvement.
9. Training in legal enforcement.
10. Put in place an efficient solid waste collection service of the entire territory.
11. Governments should allocate a sizeable proportion of their national budget for solid waste management and use that for counterpart fund-raising.
12. Citizens should be given a constitutional right to a clean and safe environment, as well as a clear definition of existing property rights.
13. Explore opportunities for increasing revenue and employment from solid wastes.
14. Establish an education programme to increase awareness and action.

Major data gaps exist in several areas, including the key economic sectors. Several global assessments have not included this very small part of the world, for example, there are no census reports for the many threatened species in the region.