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Emerging Issues for Small Island Developing States

Results of the UNEP/UN DESA Foresight Process

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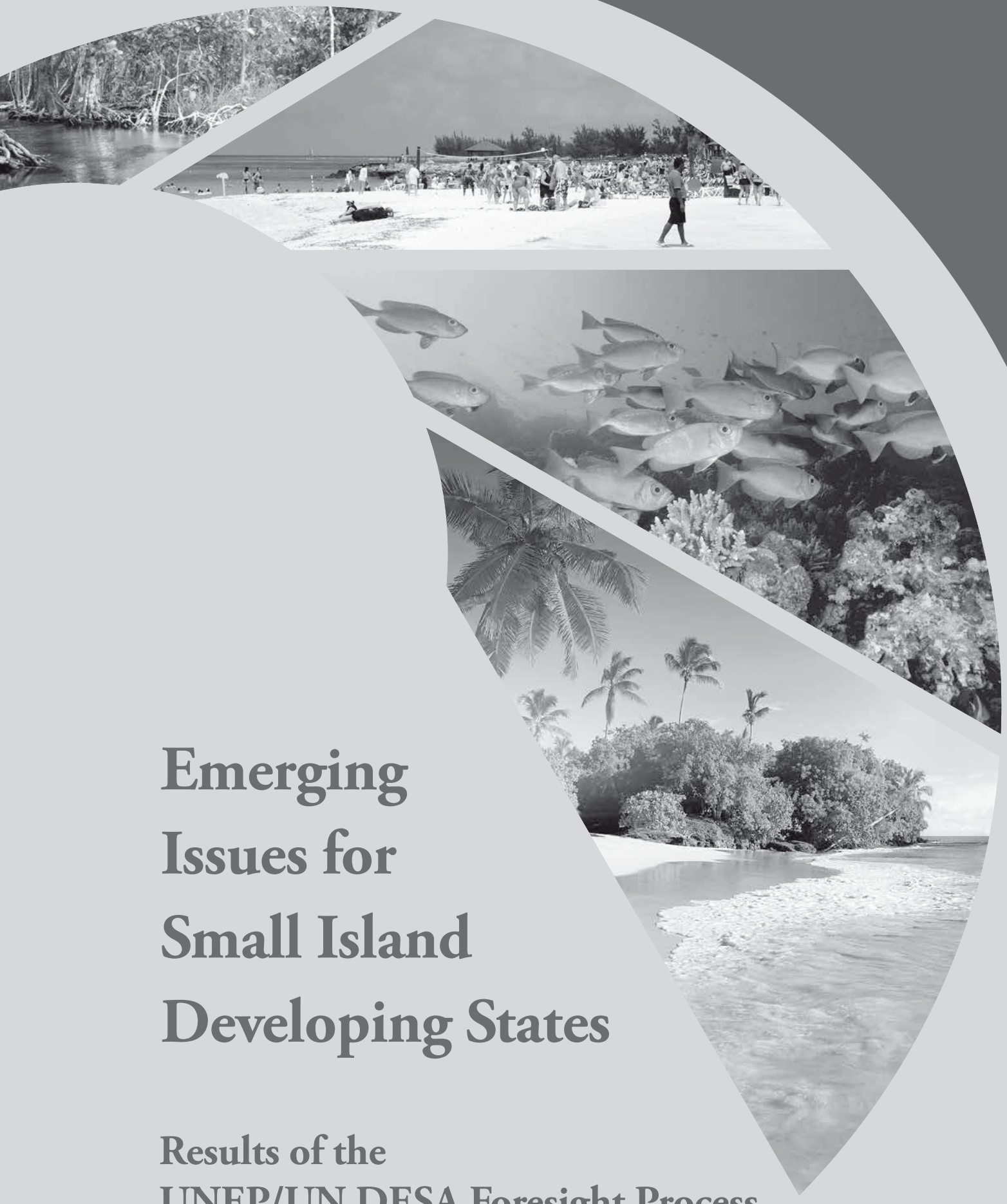

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Foreword

The sustainable development of Small Island Developing States (SIDS) is threatened by new and emerging environmental issues. Policy-makers can forge pathways to sustainable economic growth by recognizing the intimate inter-linkages between social, economic and environmental challenges and by identifying the many opportunities SIDS can harness to facilitate their transition to an inclusive and green economy.

Many of the environmental and socio-economic challenges that we face today can be traced back to policy decisions of the past. This is particularly true for SIDS, which contribute little to climate change—emitting less than one per cent of global emissions—but suffer disproportionately from its effects.

SIDS have access to natural assets and unique indigenous knowledge that can help them to develop sustainably and manage their natural environment productively and equitably. In order to take advantage of these opportunities policy-makers must develop integrated solutions to environmental challenges.

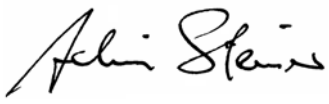
This insightful and practical report, compiled in consultation with over 80 SIDS experts and scientists through collaboration between UNEP and UN DESA, provides an overview of 20 environmental and 15 socio-economic issues critical to the sustainable development of SIDS. The findings reveal that SIDS are faced with several serious environmental and socio economic challenges, notably those related to climate change, including sea level rise and biodiversity damage and loss.

The report also describes the wealth of opportunities SIDS can avail of, to transition to a green economy. For example, SIDS possess unexploited natural resources in terrestrial areas as well as in their Exclusive Economic Zones (EEZs) and in the deep sea. Among these are minerals, potential pharmaceutical products, hydrocarbons, renewable energy resources, and fish stocks. Some countries are already expanding into these new areas, as seen in Papua New Guinea, which has embarked on exploratory activities for mining of seabed manganese nodules and rare earth elements.

In addition, SIDS have bountiful supplies of renewable energy sources such as biomass, wind, sun, ocean, wave, and hydro and geothermal. Accelerated deployment of renewable energy, prompted through appropriate policy interventions and public-private partnerships, offers an opportunity to widen access to sustainable energy and reduce the crippling costs of power. Barbados is already a leader in this field, with its Solar Water Heater Programme, for instance, which has netted the state between US$ 133.5 million and US$ 137 million in energy savings since it was first launched in the 1970s.

This report clearly demonstrates that SIDS have the potential to take a lead in defining holistic models of sustainability and human well-being. The international community is called upon to support SIDS as they combat the effects of climate change and forge new pathways to sustainable and inclusive economic growth.

As we look to the Third International Conference on SIDS in Samoa and beyond, I believe that the findings of the UNEP and UN DESA SIDS Foresight Process will provide valuable insights and evidence relevant for policy-making and priority setting for SIDS. I am also confident that it will aid the wider international community to prepare intelligent, decisive and forward-looking responses to the sustainable development challenges and opportunities faced by all states, large and small.



Achim Steiner
United Nations Under-Secretary-General, and
Executive Director United Nations Environment Programme

Executive Summary

The 2012 UNEP Foresight Process on Emerging Global Environmental Issues primarily identified emerging environmental issues and possible solutions on a global scale and perspective. In 2013, UNEP carried out a similar exercise to identify priority emerging environmental issues that are of concern to the Small Island Developing States (SIDS).

For the purposes of the UNEP SIDS Foresight Process, an emerging environmental issue is defined as any **positive** or **negative** issue that is:

- critical to achieving sustainable development in the SIDS;
- related to any of the three dimensions of sustainable development—environment, social and economic—but should have particular relevance to the environment dimension;
- recognized as *very important* by the SIDS, but has not yet received *adequate attention* from the policy community. The definitions of *very important* and *adequate attention* are left open to participants in the foresight exercise;
- evidence-based, including scientific and traditional sources of knowledge;
- recognized as 'emerging' based on newness, which can be as a result of new knowledge; new scales or accelerated rates of impact; or a heightened level of awareness.

The social and economic emerging issues were also identified using the same set of criteria.

At the core of the process was a SIDS Foresight Panel consisting of 11 SIDS experts (for the UNEP Panel) and 12 experts (for the UN DESA Panel) from the three SIDS regions, representing the global SIDS community and a wide range of disciplines. The process was designed to open the discussion on emerging environmental issues to a broad range of views both from the Foresight Panel and a wider community of relevant experts from across the globe.

The Issues

Through the Foresight Process, UNEP and UN DESA have developed separate lists of 20 environmental and 15 socio-economic emerging issues respectively, but it is realized that many of the social and economic issues have strong environmental components and vice versa. Hence, all of the issues should be viewed in holistic and integrative manner. A summary description of the issues is provided below with no particular order of priority.

The 20 Environmental Issues

Cross-cutting Issues

001. Beyond GDP: Developing Appropriate Indicators of SIDS Sustainable Development. Current method of measuring economic growth, that is the Gross Domestic Product (GDP), do not adequately capture the unique features of SIDS that are relevant to their sustainability. This causes SIDS to be misclassified in terms of their real socio-economic development and subsequent marginalization, and places them at risk of losing their cultural, environmental, and socio-economic integrity. However, the current global effort to develop new indicators 'beyond GDP' presents SIDS with an opportunity to collaborate in developing indicators that reflect their realities, aspirations, and sustainable development goals. SIDS can take the lead in defining holistic models of sustainability and human well-being that can be promoted globally. Such effort calls for credible data, relevant research, use of indigenous and local knowledge, and a participatory approach.

002. Unique Human Capacities for Island Sustainability. Global environmental change and the aspiration of SIDS to transition to a blue-green economy require new and specialized skill types, which are limited in SIDS. Building capacities for island sustainability must consider the unique characteristics of SIDS along with the development pathways of individual countries. This cannot be met by scaling down educational approaches and professional competences as it is in many larger societies. Solutions must consider local opportunities and limitations, sharing of expertise, modern information technologies, education systems that will not erode island values and sustainability, combining modern science with local and traditional knowledge, and strengthening the capacities of young people.

003. Synergizing Indigenous and Local Knowledge and Modern Science as a basis for Sustainable Island Development. SIDS possess a wealth of hitherto underutilized Indigenous and Local Knowledge (ILK) that could be synergized with modern science to develop sustainability strategies that are more appropriate to local realities. Externally derived strategies may not be appropriate to small islands, and there is need to reorient development aspirations away from conventional development. Innovative approaches and tools that are adapted to local conditions, cultures, and needs are required. This can be facilitated by harnessing and integrating ILK with modern science. Hence, there is a need to identify opportunities and mechanisms for promoting, integrating, and preserving LTK and incorporating it into the educational syllabus at all levels.

Rehabilitating Biodiversity and Ecosystem Services

004. The Continued Threat of Invasive Alien Species. Invasive alien species (IAS) are a serious yet under-acknowledged threat to sustainable development in SIDS, especially given the particularly high vulnerability and limited capacity to manage IAS. But small islands present unique opportunities for the management of IAS. Apart from obvious solutions such as restoration of

native species and prevention of new introductions and eradication, SIDS can greatly benefit from coordinated action and investment at the regional level. Elevating the profile of IAS as an economic and political issue in SIDS, acquiring knowledge, raising awareness, and building capacity are also needed.

005. Averting the Loss of Tropical Montane Cloud Forests. Some SIDS have extensive areas of tropical montane cloud forests (TMCFs), which are among the world's most threatened and neglected ecosystems. Degradation of TMCFs from human activities and rising temperatures can result in the loss of important ecosystem services such as their capacity to extract moisture from clouds and release it into the hydrologic system. Their loss can have serious consequences for freshwater resources, food security, and biodiversity in SIDS. Measures to address this issue include integrated water and forest management. Relevant data and information, vulnerability risk assessments of TMCFs, and building their resilience to climate change by addressing human pressures are also needed.

006. Breakdown of Sand and Sediment Budget due to Biodiversity Loss. Many islands are composed mainly of biogenic sand and sediment that originate from the skeletal remains of calcareous marine organisms such as some corals and sponges. Declining diversity and abundance of these organisms from multiple pressures including rising water temperature, ocean acidification, and anthropogenic activities is disrupting the biogenic sand and sediment budget leading to the loss of beaches and other coastal areas. This has potentially serious environmental and socio-economic consequences in SIDS. Solutions include reducing human impacts on marine ecosystems and increasing their resilience to climate change, and minimizing the loss of coastal areas from erosion and sand mining.

007. Decline of Agrobiodiversity and Ecosystem Functions Affecting Food and Livelihood Security. Biodiversity, including agrobiodiversity, and ecosystem functions play a critical role in food production. However, the breakdown of traditional agro-ecosystems and loss of associated biodiversity and ecosystem functions from a combination of natural and anthropogenic pressures is one of the most increasing pressures from human activities and climate change. But overfishing outweighs all other impacts on these ecosystems and could cause their collapse, including through reducing their resilience to climate change. This is important to SIDS because of their disproportionately high dependence on inshore ecosystems for livelihoods and food security, and their increased vulnerability to extreme events with reduction in the protective function of these systems. There are many options for addressing overfishing and building ecosystem resilience to climate change, including more effective implementation of the FAO Code of Conduct for Responsible Fisheries and locally-managed marine areas.

Sustainable Use of Natural Resources

009. Degradation and Scarcity of Freshwater Resources. Most SIDS are experiencing increasing shortages of freshwater as a result of multiple anthropogenic pressures and climate change impacts on their already vulnerable freshwater resources. Water scarcity will have far-reaching impacts on sustainable development in SIDS and could even jeopardize the continued human habitation of some islands. Progress towards the Millennium Development Goal of improving access to safe drinking water has been very poor in most SIDS regions. Response options include reducing the degradation and loss of freshwater resources through technical measures, rainwater harvesting, water reuse/recycling, building synergies between the water and energy sectors, low-cost wastewater treatment facilities such as artificial wetlands, and integrated water and land management.

010. Coastal Squeeze and Loss of Associated Ecosystem Services. The accelerating loss of littoral and mangrove forests in SIDS can be attributed to growing human pressures on land coupled with sea level rise and associated impacts, which are creating the phenomenon of 'coastal squeeze'. On many islands, these are the only forests that exist and their loss reduces a significant portion of the available ecosystem services and most plants available for livelihood security. The reduction in the available land is of concern on some volcanic islands. Measures to address coastal squeeze include sustainably using these forests and restoring degraded ones, strengthening capacity for