



Briefing Note # 3 **Climate Change in the SIDS and the Arctic**

Communities in both the Arctic and SIDS regions have proven adept at adapting to changing conditions in the past; however, research predicts that global climate change will pose new and unprecedented challenges to their adaptive capacity and resilience. The Fourth Assessment Report of the IPCC (WGII, Summary for Policy Makers, 2007) highlights the following aspects of climate change impacts and adaptation challenges in the Arctic and SIDS:

Polar Regions

- In the Polar Regions, the main projected biophysical effects are reductions in thickness and extent of glaciers and ice sheets, and changes in natural ecosystems, with detrimental effects on many organisms including migratory birds, mammals and higher predators. In the Arctic, additional impacts include reductions in the extent of sea ice and permafrost, increased coastal erosion, and an increase in the depth of permafrost seasonal thawing.
- For Arctic human communities, impacts, particularly resulting from changing snow and ice conditions are projected to be mixed. Detrimental impacts are expected on infrastructure and traditional indigenous ways of life in these regions.
- Beneficial impacts could include reduced heating costs and more navigable northern sea routes.
- Specific ecosystems and habitats are projected to be vulnerable as climatic barriers to species' invasions are lowered.
- Arctic human communities are already adapting to climate change, but both external and internal stressors challenge their adaptive capacities. Despite the resilience shown historically by Arctic indigenous communities, some traditional ways of life are being threatened and substantial investments are needed to adapt or re-locate physical structures and communities.

Small Islands

- Small islands, whether they are located in the tropics or at higher latitudes, have characteristics which make them especially vulnerable to the effects of climate change, sea level rise and extreme events.
- Deterioration in coastal conditions, for example through erosion of beaches and coral bleaching, is expected to affect local resources such as fisheries, and reduce the value of these destinations for tourism.
- Sea-level rise is expected to exacerbate inundation, storm surge, erosion and other coastal hazards, thus threatening vital infrastructure, settlements and facilities that support the livelihood of island communities.

- By the mid-century climate change is projected to reduce water resources in many small islands, e.g., in the Caribbean and Pacific, to the point where they become insufficient to meet demand during low rainfall periods.
- With higher temperatures, increased invasion by non-native species is expected to occur, particularly on middle and high-latitude islands.

Assessing regional vulnerabilities

As a result of the climate change impacts already experienced in the Arctic and Small Island Developing States (SIDS) regions, there is a demand for accurate assessments of regional vulnerabilities to climate change and confident projections of future regional changes. In this way, appropriate adaptation strategies involving long-term planning of infrastructure, biodiversity conservation, and economic resources can be developed to respond to climate change impacts. In both regions, vulnerability assessments have been undertaken to assess the risk to sectors potentially affected by climate change.

In the Arctic, large-scale assessments like the Arctic Climate Impact Assessment (2004 and 2006) and the Arctic Human Development Report (2004) provide broad overviews of the impacts of climate change on all sectors. Additionally, numerous smaller-scale impact and vulnerability assessments, conducted through research sponsored by governments, NGOs, universities, and private organizations, take an in-depth look at specific sectors.

The Arctic is a special case of climate vulnerability in that while most of its citizens are from well-developed, often prosperous nations, wide disparities exist in the level of social and economic development between Arctic Indigenous Peoples and their southern counterparts. Standards of living in the Arctic are considerably lower than in the rest of each respective country. Recent vulnerability assessments of the Arctic have identified the unique dimensions of Indigenous Peoples and their traditional ways of life as well as the gaps between Arctic societies and their southern counterparts.

Generally, SIDS possess less capacity than the Arctic to monitor and assess the impacts of climate change. Much work on SIDS vulnerabilities has been conducted through international bodies that tend to use different means of assessment. Nevertheless, publications such as UNEP's Pacific, Atlantic and Indian Oceans and Caribbean Environment Outlook reports (2005) and the UNFCCC's report, "Climate Change and Small Island Developing States (2005), provide comprehensive syntheses of regional vulnerabilities and impacts.

Role of Many Strong Voices

Although research results from both the Arctic and the SIDS have been circulated within their respective regions, they have yet to be formally linked or communicated to a broader audience. The Many Strong Voices Programme aims to fill this gap by supporting an exchange of knowledge and expertise on climate change between the two regions. This includes the establishment of comparative field research sites to address gaps in the existing literature on vulnerability, impacts and adaptation to climate change, designing a comparative assessment scoping study of coastal impacts, conducting outreach and developing best practice materials for adaptation in consultation with stakeholders in these regions.