

# Coastal Zones and Climate Change

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*Editors*

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# Climate Change and Sea Level Rise: Issues and Challenges for Coastal Communities in the Indian Ocean Region

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Climate change is one of the greatest threats to human lives and livelihoods in coastal regions all over the world. It will significantly aggravate existing hazards such as flooding from cyclones and storm surges. Other climate-induced risks, including sea level rise, salinity intrusion, drought, and temperature and rainfall variations, are becoming serious threats to food, water, energy, and health security for humankind.

The coastal countries of the Indian Ocean region from East Africa to Southeast Asia are highly vulnerable to climate change. Many are especially endangered because of their geographic location and topography. Bangladesh and Vietnam, for example, are predicted to be among the most substantially affected countries in the world because of the large portion of their populations living in major river deltas exposed to sea level rise.<sup>1</sup> In Bangladesh, the shallow and funnel-shaped Bay of Bengal intensifies cyclones and storm surges, increasing their impact on the country's low-lying coastal plains. Tropical cyclones hit Bangladesh some 29 times in the second half of the last century, with one of the most devastating taking 138,000 lives in April 1991.<sup>2</sup>

Additional factors—including excessive population growth, poverty, lack of awareness of climate risks, and unplanned urbanization—make the region all the more susceptible to climate-induced extreme events. Currently, about 20 percent of South Asia's population lacks access to water services,<sup>3</sup> and more than 27 percent are without adequate food. Climate change and climate variability threaten to push these figures even higher in a number of countries in the region. A 5-meter rise in sea level, for instance, would submerge 11 percent of the productive land of Bangladesh and displace over 30 million people. Even at lesser amounts of sea level rise, saline intrusion into both soil and freshwater could force millions of people from their homes in search of safe water for drinking and other uses.

This paper looks at climate change and sea level rise in the Indian Ocean region. The first section provides a brief overview of the topic. The second examines the vulnerabilities

of natural ecosystems, urban areas, and social systems in the coastal zones. The third and fourth discuss the coastal management strategies, institutional arrangements, and policy challenges in Bangladesh and Sri Lanka, respectively, as case studies. The paper concludes with some recommendations.

## **The Problem: Climate Change, Sea Level Rise, and Extreme Events**

### ***Climate Change and Sea Level Rise***

Sea level rise is caused by a number of factors including thermal expansion of the ocean, the melting of the Greenland and Antarctic ice caps, and inflow into the seas from melting glaciers on land. As increased radiative force causes the atmosphere to warm, the ocean absorbs more than 80 percent of the heat added to the climate system, causing the water to expand.<sup>4</sup> This thermal expansion accounted for between 0.30 and 0.54 millimeters in average annual sea level rise between 1961 and 2003. Higher average atmospheric temperatures contribute to the melting of the ice sheets of Greenland, Antarctica, and other continental glaciers, resulting in additional water flowing into the seas. Melting of glaciers and ice caps accounts for the highest contribution to sea level rise—an estimated 0.32 to 0.68 millimeters per year.<sup>5</sup>

Other factors, such as land subsidence, can affect the amount of sea level rise occurring in particular locations. For example, the North Indian Ocean sea level shows a linear increasing trend of 0.31 millimeters per year between 1958 and 2000.<sup>6</sup> But one recent report has found a trend of increasing sea level rise at Hiron Point near Sundarban of 5.3 millimeters per year between 1977 and 2002; some of the other stations along the Bangladesh coastline also show increasing trends of sea level rise.<sup>7</sup>

In 2007, the Intergovernmental Panel on Climate Change (IPCC) estimated that climate change would cause 0.6 meters or more of global sea level rise by 2100.<sup>8</sup> Newer estimates suggest that the global sea level rise due to climate change will top 1 meter or more by 2100.<sup>9</sup> The most recent sources indicate that the current global mean sea level rise has reached 3.1 millimeters per year.<sup>10</sup>

### ***Extreme Events: Cyclones and Storm Surges***

Tropical cyclones pose considerable risks to Indian Ocean countries. Most recently, in Bangladesh in 2007, Cyclone Sidr killed more than 3,000 people and affected over 6 million people. Nearly 0.3 million homes were destroyed, and about 0.9 million were damaged. Some 0.35 million hectares of cropland were also destroyed. According to an assessment made by the International Labour Organization and the Ministry of Labour and

Employment of Bangladesh, some 567,000 people saw their livelihoods temporarily or permanently disrupted, mainly due to employment losses and damage to income-generating assets. This figure corresponds to 436,000 households, or 14 percent of all households in the affected areas.<sup>11</sup> Another “super cyclone” which struck the Indian state of Orissa in 1999 generated a storm surge of 8 meters traveling up to 20 kilometers inland. The Orissa cyclone killed 10,000 people, destroyed 275,000 homes and 17,110 square kilometers of crops, and uprooted or snapped 90 million trees.<sup>12</sup>

The IPCC Fourth Assessment Report predicts climate change will intensify extreme weather events such as cyclones and associated storm surges, especially along the Bay of Bengal. Some evidence already indicates a decreasing frequency but increasing intensity of cyclone formation in the bay since 1970.<sup>13</sup> Higher wind velocity from such storms is expected to cause greater losses to vulnerable communities and ecosystems in South Asia.

## **Vulnerability to Climate Change and Sea Level Rise**

The effects of sea level rise go beyond the gradual inundation of coastal land areas to include the intrusion of saline water into freshwater rivers and aquifers and the intensification of impacts from cyclones and storm surges. As sea levels rise, saline water will intrude directly into rivers and streams, advancing not only as a function of the water level but also according to changes in river discharge that may result from climate change. (In Bangladesh, for example, saline water starts to penetrate inland during winter months when the flow of water in rivers is much less.) Sea level rise also puts upward pressure on the saline-freshwater interface in groundwater aquifers.<sup>14</sup> Similarly, sea level rise raises the base on which storm surges build, making storm waves higher and carrying them farther inland.

### ***Impacts of Sea Level Rise on Natural Ecosystems***

Saline intrusion from sea level rise will degrade water quality in coastal rivers, lakes, ponds, and aquifers in different countries of the region. This degradation will in turn put stress on the existing drinking water sources—which is already a problem affecting Bangladesh, India, the Maldives, and Sri Lanka to varying extents. Sea level rise would also aggravate the water quality impacts of cyclones and storm surges, which can spread pollution from contaminated sources. In fact, these extreme events can act as vehicles for transferring water quality risk. For example, over 6,000 ponds were tainted with saline water from Cyclone Sidr in 2007 in Bangladesh. More pollution will lead to more waterborne illnesses such as cholera and diarrheal diseases. Sea level rise may also bring additional risks such as lower agricultural yields causing malnutrition along the coastal areas in the region.

In addition to effects on water quality for drinking and farming, climate impacts on surface water temperatures, sea level rise, and salinity intrusion may significantly damage aquatic

ecosystems in the region, facilitating the growth of algal blooms and eutrophication, which might have adverse impacts on sensitive species.

### ***Impacts of Sea Level Rise on Coastal Settlements***

Sea level rise will tend to worsen coastal erosion.<sup>15</sup> In some coastal areas, a 30-centimeter rise in sea level can result in 45 meters of landward retreat. Coastal erosion, cyclones, and storm surges will place coastal infrastructure—housing, industrial facilities, energy and sanitation systems, transportation and communication networks, and tourist and cultural sites—increasingly at risk.

Projected sea level rise could flood the homes of millions of people living in the low-lying areas of South Asia. The IPCC estimates that almost 60 percent of the projected increase in the annual number of people flooded in coastal populations will occur in South Asia, along the coasts from Pakistan, India, Sri Lanka, and Bangladesh through to Myanmar. The potential impacts of a 1-meter sea level rise include inundation of 5,763 square kilometers in India; a 45-centimeter sea level rise in Bangladesh may dislocate about 35 million people from 20 coastal districts by 2050.<sup>16</sup>

The repercussions from such population displacements could spread well beyond the coastal regions. Environmental migration within or between countries could create severe problems for regional and sectoral development as well as generate new sociopolitical instabilities from increased competition over scarce resources such as land, water, forests, and fisheries in many parts of the world. Around the Indian Ocean rim, millions of people are already living in urban slums without adequate employment or shelter. Climate migrants seeking refuge from more exposed regions could put enormous pressure on urban economies and infrastructure as well as on basic services such as water supply, power, health, and sanitation.

Bangladesh, for example, is already experiencing higher levels of tidal inundation in its coastal districts, with troubling implications. The country's Sundarban region, the largest continuous mangrove area in the world, provides direct employment to some 500,000 to 600,000 people for at least half the year, many of whom are engaged in harvesting the region's natural resources through fishing; woodcutting; and collecting thatching materials, honey, beeswax, and shells.<sup>17</sup> By some estimates, just 10 centimeters of sea level rise would submerge 15 percent of the region, and the Sundarban would disappear altogether if the sea level rose 60 centimeters.<sup>18</sup>

### **Case Study: Bangladesh**

Bangladesh has a coastline of 710 kilometers along the Bay of Bengal. As defined by criteria including the reach of tidal waters, salinity intrusion, and the landward influence of cyclones and storm surges, fully one-third of the country is categorized as belonging to

the coastal zone. The outer boundary of the Exclusive Economic Zone delimits the seaward coastal zone. The coast of Bangladesh constitutes a region of both vulnerabilities and opportunities. It possesses a great diversity of natural resources including coastal fisheries, forests, salt, and minerals, as well as high potential for exploitation of both onshore and offshore natural gas. It also offers sites for harbors, airports, tourism facilities, and other development opportunities.

Increasing population, competition for limited resources, natural and anthropogenic hazards, lack of economic opportunities in some areas, and important ecological hotspots call for targeted coastal management strategies. The government of Bangladesh realizes that climate change poses a serious threat for development and acknowledges the need to protect coastal ecosystems and optimize the utilization of coastal resources. The state's forthcoming second Poverty Reduction Strategy Paper recognizes the risks of sea level rise and associated vulnerabilities in coastal areas and suggests possible adaptation actions and short-term measures (2009–11) for improving climate-resilient infrastructure, especially in the country's coastal districts.<sup>19</sup>

Bangladesh has designated the Ministry of Environment and Forests as its focal point for the United Nations Framework Convention on Climate Change (UNFCCC). Recently, the Ministry of Finance allocated resources from the annual budget to address climate change and, to this end, has formed a national-level committee. Additionally, the Economic Relations Department has established a multidonor trust fund to deal with climate impacts in Bangladesh.

### ***Coastal Management and Climate Policy***

In 2005, the government formulated a national coastal zone policy (CZP) to guide coastal management and ensure sustainable development of coastal communities without impairing the integrity of the natural environment. In seeking to facilitate harmonized policies across sectors, the policy established processes and mechanisms that commit different relevant ministries, departments, and agencies to coordinate their activities in the coastal zone, and to engage national and local government institutions as well as NGOs, the private sector, and civil society.

Recognizing the need to implement adaptive measures in the face of climate change, the CZP advanced a number of steps, including continuous management of sea dikes to protect the coastline from sea level rise, floods, cyclones, and storm surges. The CZP also proposed an institutional framework for detecting and monitoring sea level rise and for formulating contingency plans to cope with the resulting impacts.

For its part in addressing climate change and its impacts, the Ministry of Environment and Forests formulated a National Adaptation Program of Action (NAPA) under the guidance

of the UNFCCC in 2005. National and local government policymakers, scientific experts, and representatives from many sectors of civil society—including NGOs, indigenous groups, and the media—contributed to the action plan’s development. The NAPA identified the immediate and urgent climate adaptation needs of the country and listed priority activities; those specific to the coastal zone are the following:

- Promoting adaptation of coastal crop agriculture to combat increasing salinity through maize production under the wet bed no-tillage method and “Sorjan” systems of cropping in tidally flooded agro-ecosystems
- Promoting adaptation of coastal fisheries through aquaculture of salt-tolerant fish species in coastal areas of Bangladesh
- Reducing climate change hazards through coastal afforestation with community participation
- Promoting research on saline-tolerant crop varieties to facilitate further adaptation in the future
- Providing drinking water to coastal communities to combat increased salinity in freshwater sources due to sea level rise
- Enhancing resilience of urban infrastructure and industries to the impacts of climate change
- Exploring options for insurance and other emergency preparedness measures to cope with increased climatic disasters (e.g., floods, cyclones)

In 2008, the Ministry of Environment and Forests formulated the Bangladesh Climate Change Strategy and Action Plan (BCCSAP), which aims to promote climate-resilient development in Bangladesh based on the Bali Action Plan of the UNFCCC. The BCCSAP covers adaptation to climate change, technology transfer, and adequate and timely flow of funds for investment within a framework of food, energy, water, and livelihood security. Developed in close consultation with civil society, the BCCSAP builds on the country’s NAPA and is intended to be reviewed and revised as experience and knowledge are gained from implementing adaptation activities and from related research.

The BCCSAP consists of six pillars, comprising 37 programs and 128 projects. The individual programs are implemented by the relevant ministries or their agencies, with the involvement—as appropriate—of civil society and the private sector. The programs specific to coastal areas are as follows:

- *Comprehensive Disaster Management*—improvement of cyclone and storm surge warning
- *Infrastructure*—repair and maintenance of cyclone shelters, repair and maintenance of existing coastal polders, adaptation against tropical cyclones and storm surges

- *Research and Knowledge Management*—preparatory studies for adaptation against sea level rise

### **Policy Challenges**

Despite increasing recognition of the need for Integrated Coastal Zone Management (ICZM) strategies, individual coastal policies in Bangladesh are still mainly formulated with narrow sector-oriented objectives in mind and are not part of an overall framework. Similarly, although many sectoral policies have clear implications for coastal development, in most cases they do not have specific sections on coastal areas and often fail to capture the distinctive combinations of vulnerabilities and opportunities that characterize the coast.

The coast remains an area of institutional weakness. Though several government agencies and NGOs are working in the coastal region, there are limited linkages between them and institutional fragmentation is common. Further, many of the government agencies responsible for coastal policies have hardly any presence at the local level. Insufficient coordination—compounded by a lack of institutional, financial, and human capacities for implementation and monitoring—impedes effective policy action. Consequently, sectoral development policies, the NAPA, and the BCCSAP all suffer from inadequate execution and follow-up. Too often, policy efforts aim at formulating master plans rather than at creating flexible planning and implementation procedures that can be adapted to changing situations and priorities based on performance monitoring and continuous feedback from stakeholders.

Practice and experience developed over the years suggest that successful ICZM strategies should

- be in accord with nationally accepted criteria for the development of the coastal zone, taking into account poverty alleviation and economic growth, environmental quality, empowerment of local communities and local participation in planning and implementation, disaster preparedness and mitigation, and international cooperation;
- stimulate and facilitate operational interactions among agencies needed to implement sector policies (e.g., land use planning, agriculture and irrigation, fisheries, forestry, water supply and sanitation, industrialization, and tourism);
- create a national platform to facilitate implementation and monitor corresponding progress.

The key to ICZM is to empower timely decision making at the appropriate levels, providing the flexibility to respond to evolving circumstances and cope with persistent uncertainties. When this has been achieved, the great range of opportunities offered by the coastal zone—including marine resources; the accretion of new land, oil and gas resources; the

potential productivity of mangroves and other coastal ecosystems; and tourism and leisure activities—can be judiciously developed. The major challenge to ICZM is to realize these potentials while mitigating or adapting to vulnerabilities through a process that enhances the livelihoods of the inhabitants and provides communities with avenues for input to, and support from, external institutions.

For Bangladesh, the political institutional barrier is the largest obstacle to overcome, requiring awareness and capacity building at the highest political and policy levels. Increased funding would help, but must be channeled toward the most climate-vulnerable communities through appropriate structures to maintain accountability and transparency. A coherent, dynamic national action plan is needed to prioritize adaptation measures, regularly review implementation, and eventually revise and reprioritize policy actions. Such a plan should facilitate more comprehensive evaluation of adaptation options, providing a framework for assessing social and environmental as well as economic costs and benefits across all relevant sectors and stakeholders. Formulating this plan would force decision makers to think beyond the short-term, politically expedient horizons of three to five years. A shift to long-term planning will enable the long-term effects of climate change—with predicted rises in sea levels, possible increases in the frequency of major storms, and changes in rainfall patterns over the whole Ganges-Brahmaputra basin—to be taken into account.

### **Case Study: Sri Lanka**

Sri Lanka is an island country with some 2,825 kilometers of coastline and 500,750 square kilometers of surrounding waters in its Exclusive Economic Zone. Given the island's relatively small land area of 65,000 square kilometers, the entire population lives within 100 kilometers of the coast.<sup>20</sup> The coastal zone consists of diverse shoreline and near-shore habitats and an important resource base in the marine environment surrounding the island. In their natural state, these ecosystems not only support marine life but also provide a buffer against the erosive forces of the ocean. The physical and ecological characteristics of many of Sri Lanka's coastal ecosystems—particularly the lagoons—make them susceptible to degradation. They lack resilience and have a low threshold for irreversible damage. Once degradation exceeds this point, rehabilitation becomes prohibitively expensive or environmentally impossible. Population growth has increased human settlements and raised the development demands on coastal zone resources, augmenting the stresses on these unique ecosystems.

To control unregulated development of coastal areas, the government has put a number of regulations and policies in place. The first steps in this direction were taken in 1978 when responsibility for coastal conservation was assigned to a separate Coast Conservation Division within the Ministry of Fisheries; this division was upgraded a few years later to become a government department. Parliament passed the country's first Coast Conservation Act in

1981. This act, which became operational in 1983, shifted policy emphasis from coastal *protection* to coastal zone *management*. To best enable the Coast Conservation Department's effective control, the act provides a very narrow geographic definition of the coastal zone.

### **Coastal Zone Management**

As required by the Coast Conservation Act, the first national coastal zone management plan (CZMP) was formulated and approved by the government in 1990; full responsibility for the plan's implementation was assigned to the Coast Conservation Department. The CZMP addressed the problems of erosion, exacerbated by human activities such as beach and river sand mining, collection of coral, and removal of coastal vegetation; loss and degradation of natural coastal habitats; and loss and degradation of archaeological, historical, religious, and cultural sites and of recreational and scenic areas. It described the nature, scope, severity, and causes associated with each of these problems and identified objectives and policies for each, along with specific management techniques and implementing actions in the areas of development, research, coordination, education, planning, and policy development.

The CZMP is legislatively required to be revised every four years to incorporate emerging challenges and current and projected development trends for refining policies and guidelines. Since its inception, the plan has evolved to include greater levels of community participation, particularly through the introduction of special area management in the early 1990s in recognition of the need for locally based collaborative management between residents and government departments. Formally incorporated into the 1997 CZMP revision, special area management is a practical strategy for increasing community participation in resource management within a relatively small geographic area.<sup>21</sup> Its purpose is to address problems that can arise from the accumulated impact of hundreds of individual resource use decisions both in and outside the narrowly defined coastal zone.<sup>22</sup> New focuses in more recent planning include the reduction of coastal water pollution as increasing urbanization, industrialization, and irrigation, coupled with inadequate waste management and treatment, are threatening the functioning of lagoons, estuaries, and marine coastal waters as well as livelihoods.

### **Policy Challenges**

Although Sri Lanka is one of the few island states to have fully developed and implemented a CZMP on a national scale, its existing coastal policies and regulations suffer from numerous shortcomings. Several factors contribute to this lack of success, including communication problems, with many stakeholders being unaware of the regulations; and a lack of clarity over responsibilities shared among different levels of government. Most

importantly, however, there is a lack of consistent application and enforcement. Often, regulations seem to be implemented selectively when they affect economically weak actors such as fishermen. One measure that has received considerable scrutiny in this regard is the vulnerability zoning or “100-meter rule” enacted following the December 2004 tsunami. To provide a buffer against the recurrence of such catastrophes, new construction was forbidden within 100 meters of the mean sea level. Though well intentioned, this regulation had the perverse result of dispossessing many poor coastal residents and prohibiting them from rebuilding on their land, while effectively exempting many privileged actors such as tourist hotels. Many experts question whether such blanket rules applied across all coastal communities are practicable or effective. A better option may be to base such zoning regulations on a coastal vulnerability index that takes into account variable coastal geomorphology as well as the size and density of human settlements. The main challenge is to ensure compliance. In this regard, economic instruments are needed that provide the correct incentives. Another consideration is whether implementation of more place-specific coastal regulations can be devolved to local governments. Decentralization in resource management is an important trend worldwide, but there are concerns about whether local authorities can manage delicate coastal ecosystems of national or global importance.

Implementing the CZMP has imposed major challenges and constraints on government authorities. Significant environmental degradation of many coasts had already occurred by the time the plan was enacted. Government authorities had to educate and convince coastal populations of the causes of the degradation and the need for some measure of regulation of development activity. A lack of funding for implementation remains a major impediment, while strong and often conflicting pressures for exploiting the coastal region persist, with crucial economic and social implications.

Thus, coastal erosion continues to be a severe problem in Sri Lanka which will only be aggravated by climate change and sea level rise. In economic terms, the public and private costs of coastal erosion are enormous. Erosion has already led to damage or loss of infrastructure, undermining roads and rail track; loss or degradation of valuable land; and the disruption of fishing, recreation, and other activities. The Coast Conservation Department has committed substantial funding over the years to erect coastal defense structures. These have sheltered specific areas but contributed little to the overall protection of the coastline. Much less effort has been directed toward reducing activities that contribute to coastal erosion, particularly through education or creation of other employment options. In the limited locations where efforts have been made to stop shell and coral mining, for example, they have had serious negative impacts on household welfare, primarily because of the failure to provide meaningful alternative income-generating activities.

Experience gained in coastal zone management in Sri Lanka during the past decade and more has shown that approaches to resource management focused on regulation alone tend

to alienate the affected residents. Collaborative efforts on the part of government agencies, NGOs, and local communities are needed to address the root causes of environmental degradation in the coastal zone. Local communities can be organized to manage their natural resources only if they perceive that they will derive tangible benefits from so doing. Policy and decision making must be adopted to accommodate their participation and inputs.

Along these lines, there is now increasing demand for the Coast Conservation Department to transform itself from primarily a regulatory agency to a service-oriented organization. The department should provide the leadership, coordination, technical assistance, and training needed for successful implementation of a scientifically based coastal planning and management strategy. Such an expanded agency must become more proactive in its approach to coastal zone management to cover a wider area and scope of coastal-related activities and facilitate locally based planning and implementation efforts. As many responses to sea level rise are very similar to those required to address existing coastal zone management problems, such a framework would serve Sri Lanka well in adapting to global climate change.

## Conclusion and Recommendations

Adaptation to climate change and sea level rise is especially critical for countries such as Sri Lanka and Bangladesh. Coastal industries and infrastructures (e.g., ports, communication networks, tourist facilities) and coastal ecologies and ecosystem services (e.g., fisheries, wetlands, barrier islands) represent important assets not only for coastal communities but for all who count on these resources. Despite the vulnerability of coastal areas, a number of measures can be taken to meet the challenges of climate change and sea level rise. Analyses of coastal vulnerabilities and responses in Sri Lanka and Bangladesh suggest the following recommendations.

1. Effective institutional arrangements must foster consistent coordination and communication on climate change, sea level rise, and coastal management aspects.
  - Special institutions should be established to handle coastal zone problems and possible solutions related to climate change and sea level rise. These institutions can be mandated to implement ICZM/CZP with support from relevant government agencies and NGOs.
  - Both government agencies and NGOs should work in a collaborative and integrated manner. Lack of coordination between various sectors is now the major hurdle in the path of mitigation and adaptation to climate change and development.
2. Climate change should be integrated into the development planning and design process.

- All present and future development projects should include climate change and sea level rise issues in their planning and design.
3. Resources should be devoted to implement climate change projects at the grass-roots level.
    - Special funds need to be allocated to climate change and sea level rise adaptation projects in the coastal regions.
    - A separate fund should be established to address climate change–related impacts on the implementation of development projects in the coastal areas.
  4. Climate change policies should support sustainable development.
    - Both adaptation and mitigation measures are needed to support sustainable development in coastal regions.
    - Pro-poor adaptation requires pro-poor governance at the grassroots level.
    - Women and children comprise the most vulnerable sectors of the population to sea level rise, so their needs merit special consideration in any sustainable development policy.
  5. Awareness of climate change issues must be increased at policy and community levels.
    - Raising the level of awareness is crucial for proper design and implementation of projects and programs in the coastal areas.
  6. In-depth research is needed on different sectors including agriculture, forestry, water, and health, as well as indigenous knowledge and coping mechanisms.
    - Measures should be put in place to increase biodiversity in agriculture and fisheries and to promote indigenous varieties of seed production.
    - Use of saline-tolerant crop varieties should be increased in the coastal regions.
    - Deforestation should be halted, and reforestation and afforestation encouraged, in coastal areas.
    - Research on specific health hazards to specific climate parameters is critical.
  7. Government agencies, international organizations, and NGOs should collaborate on climate issues.
    - Policy actors and stakeholders should share information and experiences to draw lessons for best practices.
    - Effective networking, lobbying, and policy and advocacy at national, regional, and international levels are required.

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