

CLIMATE CHANGE

# Legal response to loss and damage

*The inclusion of "international mechanism" in Durban decision on loss and damage marks an important window of opportunity for further development of institutional mechanisms.*

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THE adverse impacts of climate change have continued to devastate the lives and livelihoods of millions of people and inflict large economic losses. According to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, there has been a global increase in weather related disasters between 1980 and 2003. The report estimated that during that period the economic loss due to damage caused by natural disasters is one trillion USD in total. Moreover, the UN Office for the Coordination of Humanitarian Affairs has estimated that in 2008 over 20 million people were displaced by sudden onset of climate-related disasters. It also reported that climate change is already causing 300,000 deaths per year throughout the world and seriously impacting the lives of 325 million people (September 2009).

Climate change impacts and vulnerability, particularly vis-à-vis current extreme weather events, bring up the serious legal question of liability for the loss and damage associated with climate change. Causal liability shifts the burden to the industrialised countries to take entire responsibility in response to loss and damage caused, based on

proportional contribution to the cause of climate change. In the context of climate science, relative contributions of different states to climate change can be estimated based on the cumulative contribution and, as such, each state should be liable proportionally. Although one can convincingly establish substantive arguments for climate induced loss and damage based on the rules of customary international law, there are often no certain procedural means to pursue this legitimate claim further.

Therefore, in response to climate induced loss and damage, an immediate and contemporary policy framework is needed under the UN Framework Convention on Climate Change [UNFCCC]. Accepting this reality, while international climate change regime sets a structure for adaptation, the issue of loss and damage is addressed within framework that. In 2007, under the Bali Action Plan, the UNFCCC Parties agreed to consider "disaster reduction strategies and means to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change" as part of enhanced action on adaptation.

Later, in 2010, the Cancun

Agreements described loss and damage as "including impacts related to extreme weather events and slow onset events" such as "sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinisation, land and forest degradation, loss of biodiversity and desertification". Under the Cancun Agreements, the Conference of the Parties (COP) also established a work programme to consider approaches to address loss and damage and mandated the Subsidiary Body for Implementation (SBI) to agree on relevant activities. Furthermore, at COP-17 in Durban, the Parties requested the SBI to continue this work and make recommendations to decide at the COP 18.

The Durban decision on loss and damage aims at additional fact finding through research, expert meetings and stakeholder consultations to take into account at COP 18. Parties included in Annex II and other developed country parties are requested to provide financial and technical support for the implementation of the activities of the work programme agreed in Durban. In terms of governance mechanism, it was decided to explore a range of possible approaches and potential mechanisms, including an international mechanism, to address loss and damage.



Compensating the damage rendered by climate change influenced natural disasters is a task imperative.

However, during the negotiations many developed country Parties made it clear that they did not want to work towards the establishment of such a mechanism and hence suggestion for international mechanism was incorporated in the preambular text. They are also reluctant to provide financial support in accordance with compensation-based approaches.

Policy framework to address loss and damage associated with climate change requires a robust, transparent and credible institutional

mechanism with anticipatory approaches under adaptation framework to avoid and to reduce loss and damage along with reactionary approaches beyond adaptation framework including compensation schemes. To ensure the availability of predictable and adequate fundings, a robust link to the emerging climate finance system will be crucial to meet the financial need to address loss and damage.

The Durban decision does not make loss and damage a priority issue for future climate negotiations

leading to a new global climate agreement. However, the inclusion of "international mechanism" in Durban decision on loss and damage marks an important window of opportunity for further development of institutional mechanisms. Thus, we need to work further towards the establishment of a mechanism for loss and damage that provides immediate and adequate legal protection for vulnerable communities.

The writer is an environmental lawyer.

## GLOBAL WARMING AND OVER-EXPLOITATION

# Corals of St.Martin's at stake

*St.Martin's island with more than 700 species of biological diversity is the country's first Marine Protected Area. To save these precious marine renewable natural resources from the onslaught of global warming and other human-induced changes an urgent monitoring programme is required.*



St. Martin's island now is a tourist destination.

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HONEY comb corals around Saint Martin's island are under stress due to coral bleaching. While the COP 17 -- UN climate convention -- was being held in Durban of South Africa, a Nature Watch Team (NWT) of Ekattor Television watched that a noticeable coral bleaching was defacing the corals of Saint Martin's island of Bangladesh due to global warming. A four-member Scuba diving team moved under water around Saint Martin's during the last week of December, 2011. They observed that the honey comb corals on the east coast of the island are severely affected by the bleaching. In addition, the team also identified corals are getting blanketed by sediments and thus failing to perform their natural physiological activities as a result of over plying of large tourist ships/ferries in the area.

Although the government has formulated NAPA and BCCSAP and implementing programmes to combat the climate change impacts through adaptation, mitigation and DRR but to address the stress minimisation on huge marine resources underwater is not given adequate attention.

When corals lose their colour, it is known as "coral bleaching". Coral bleaching became an issue when it was first observed on coral reefs in the South Pacific in the 1990's. Coral bleaching is a stress condition in reef corals that involves a breakdown of the symbiotic relationship between corals and unicellular algae (zooxanthellae). These microscopic plants live within the coral tissue and provide the coral with food for growth and their normal healthy colour. The symptoms of bleaching include a gradual loss of colour as zooxanthellae are expelled from the coral tissue, sometimes leaving corals bone white.

IPCC study revealed that under stress, corals may expel their zooxanthellae, which leads to a lighter or completely white appearance, hence the term "bleached". Coral bleaching is a generalised stress response of corals and can be caused by a number of biotic and abiotic factors, including:

- increased (most commonly), or reduced water temperatures
- increased solar irradiance (photosynthetically active radiation and ultraviolet band light)
- changes in water chemistry (in particular acidification)
- increased sedimentation (due to silt runoff)
- bacterial infections
- changes in salinity
- herbicides
- low tide and exposure
- cyanide fishing

While most of these triggers may result in localised bleaching events (tens to hundreds of kilometers), mass

coral bleaching events occur at a regional or global scale and are triggered by periods of elevated thermal stress resulting from increased sea surface temperatures.

Infectious bacteria of the species *Vibrio shiloi* are the bleaching agents of *Oculina patagonica* in the sea, causing this effect by attacking the zooxanthellae. The stress factor most commonly associated with bleaching is elevated sea temperature, but additional stresses such as high light intensity, low salinity and pollutants are known to exacerbate coral bleaching. If the causal stress is too great or for too long, corals can die.

Reef corals are very sensitive to sea temperatures outside their normal range. Elevated temperatures of 1°C above the long term monthly summer average are enough to cause coral bleaching in many dominant coral species. Global warming causes coral bleaching and there is absolutely no doubt about it. The heat affects the tiny algae which live symbiotically inside the corals and supply them with food. The heat stress damages the algae and in consequence leads to coral death. The argument for the global warming/coral bleaching connection was bolstered by the massive El Niño event in 1997 and 1998 that led to unusually warm tropical waters throughout the world's lower latitudes and coral bleaching in many locations.

The physiological consequences of bleaching to the coral can be severe and lead to mortality, with subsequent

ecological consequences to the coral reef ecosystem due to the key role of corals in maintaining ecosystem structure and function.

The ecological impacts of mass coral bleaching have been demonstrated to be severe, with massive losses in coral cover and diversity, as well as in other coral reef-associated organisms.

Economic losses to reef-dependent tourism are the most significant observed thus far. However, the potential sufferer for serious socioeconomic impacts are reef-dependent fishing communities as degraded reefs continue to erode.

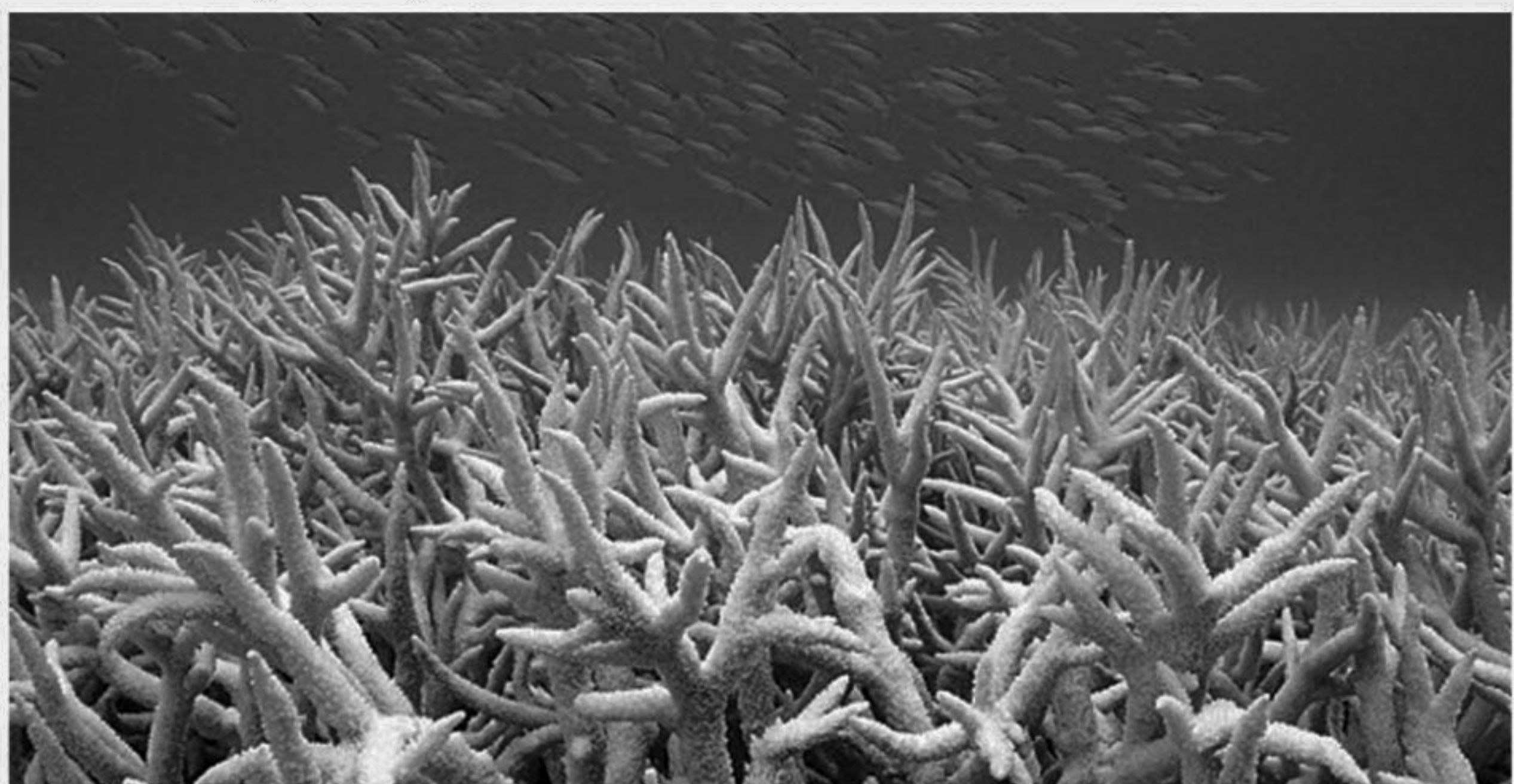
Effective responses to mass coral bleaching are hampered by scientific uncertainty, our inability to respond to global climate change in the short term, and insufficient financial and human resources. However, these challenges cannot justify inaction. Rather they underscore the primacy of developing adaptive strategies and capacity so that countries and communities are prepared for future mass bleaching events. Mass bleaching is one of such stresses that necessitates identifying and planning for the expected ecological and socioeconomic impacts from future events. Effectively implementing adaptive management will require support from both the research and policy communities to provide the technical information and financial and human resources needed for success.

The policy community faces two great challenges. First, to commit the resources needed for successful implementation of coral reef management in the developing nations that play host to most of the world's coral reefs. Second, to address global climate change through reduction in CO2 emissions.

Mass bleaching creates a broad constituency and justifies efforts to address global warming, as it foreshadows the potentially larger impacts to come about through unabated global warming. The NWT has suggested that an immediate monitoring programme is required to learn the causes and status of bleaching. Special attention is also needed to know the dumping impact of the untreated sewage and other waste materials from hotels, ships and others sources of Saint Martin's island. It is also important to assess the carrying capacity of the tourism of the island.

St.Martin's island with more than 700 species of biological diversity is an ECA and country's first Marine Protected Area (MPA). To save these precious marine renewable natural resources from the onslaught of global warming and other human-induced changes an urgent monitoring programme is required. The present environment-unfriendly structures and activities should be relocated to nearby Sahpuri island instead of Saint Martin's island.

The writer is a biologist.



Coral bleaching is accentuated by global warming.