



INTERNATIONAL LAW, ADAPTATION TO SEA- LEVEL RISE AND DISAPPEARING ISLANDS

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CLIMATE CHANGE REGIME

"Adaptation" definition?

IPCC (Inter-governmental Panel on Climate Change)

"An adjustment in natural or **human systems** in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities".

- *Does 'human systems' include legal systems?*

CLIMATE CHANGE REGIME

Adaptation

1. *In situ*: Measures taken on the territory to adapt
2. *Ex situ*: If in situ measures fail other actions such as migration
3. Natural adaptation measures: Such replanting of mangroves
4. Artificial adaptation measures: Such as construction of sea walls

CLIMATE CHANGE REGIME

Examples of *in situ* adaptation measures to SLR

- Enhancing dikes
- Creating water-storage capacity and increased efficient water use (problem of salinization)
- Land-use planning modifications
- Agricultural transitions
- Fortification of coastal areas (seawalls, planting mangroves)
- **Island building – island preservation/resilience building**
- **Construction of artificial islands**

SINGAPORE AND ADAPTATION TO SEA LEVEL RISE

Land reclamation activities

As of 2011 the minimum land reclamation level in Singapore was raised from 3 metres to 4 metres above the mean sea level in 2011. (National Climate Change Secretariat)

Environment and Water Resources Minister Vivian Balakrishnan was quoted by Reuters as saying that the **costly but necessary move was “buying insurance for the future”**.

SEA DIKES NETHERLANDS





MALDIVES

Maldives, a chain of 26 atolls in the Indian Ocean

Actively engaged in adaptation to sea level rise with ambitious artificial island construction activities

An ‘artificial’ island construction project called *Hulhumale* expected to be completed in 2023 and with a 130,000 person population capacity

This project was originally started in 2005 to house the people made homeless by the 2004 tsunami

Extensive reclamation by “pumping sand from surrounding atolls and depositing it on shallow reefs that surround the original lagoon. It is being fortified with walls 3 meters above sea level — which is higher than the highest natural island at only 2.5 meters above the sea

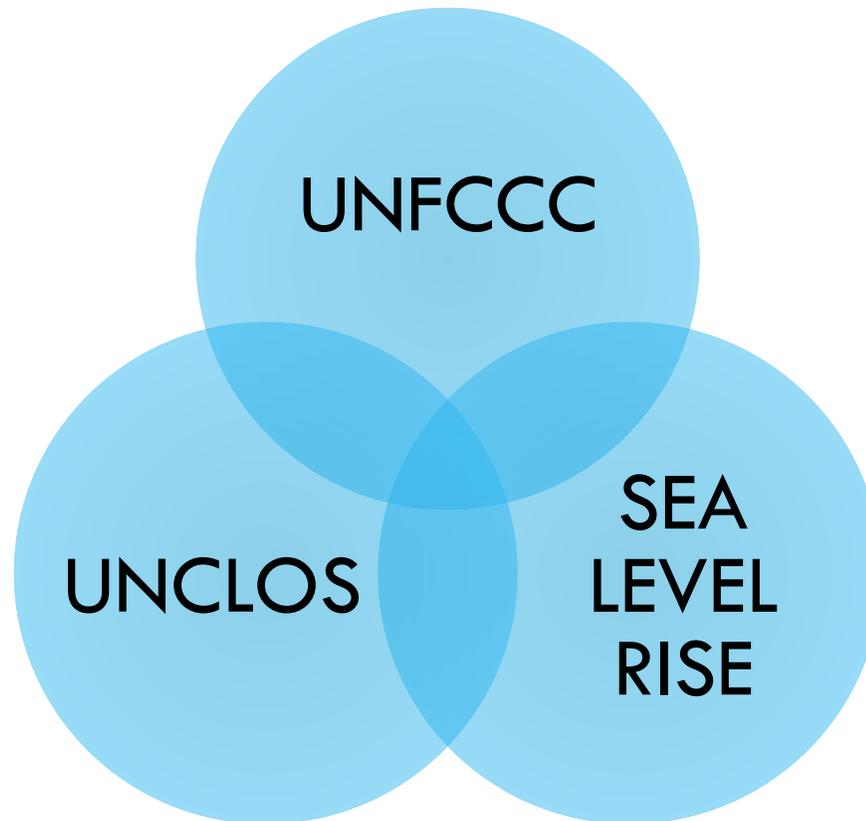
HUMHUMALE ISLAND



FUTURE HUMHUMALE ISLAND



ADAPTATION, SEA LEVEL RISE AND INTERNATIONAL LEGAL FRAMEWORKS



ADAPTATION, SEA LEVEL RISE AND ISLANDS

Sea level rise is an oceans phenomena but it is the result principally of activities on land and is regulated at the international level by the climate regime under the United Nations Framework Convention for Climate Change (UNFCCC), the Kyoto Protocol and the Paris Agreement.

Question: Does the climate change regime provide a framework to address adaptation to sea level rise and its impacts on islands- (loss baselines/territory)?

ADAPTATION UNDER THE CLIMATE CHANGE REGIME: UNFCCC

- UNFCCC requires all Parties to develop measures to **facilitate adequate adaptation** to climate change. [Article 4(1)(b)]
- Parties are further **required to cooperate in preparing** for adaptation to the impacts of climate change, that includes inter alia developing appropriate and integrated plans for coastal zone management. [article 4(1)(e)]

ADAPTATION UNDER THE CLIMATE CHANGE REGIME: UNFCCC

Obligation of developed country Parties (Annex II of the Convention) to assist the **developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting **costs of adaptation those adverse effects****

ADAPTATION UNDER THE CLIMATE CHANGE REGIME: CANCUN FRAMEWORK

- Cancun Framework on Adaptation adopted in 2010 + and Adaptation Committee established
- Parties recognized the **urgent need** to cooperate on adaptation “to **enable and support the implementation of adaptation actions** aimed at reducing vulnerability and **building resilience** in developing country Parties, taking into account the urgent and immediate needs of those **developing countries that are particularly vulnerable**”

ADAPTATION UNDER THE CLIMATE CHANGE REGIME: LOSS AND DAMAGE MECHANISM

2013 Parties adopted the **Warsaw International Mechanism for Loss and Damage**

- To address loss and damage associated with impacts of climate change, including extreme events and slow onset events, in developing countries that are particularly vulnerable to the adverse effects of climate change
- Loss and damage refers to impacts of climate change that exceed the adaptive capacity of countries, communities and ecosystems

Slow onset events includes SLR

ADAPTATION UNDER THE CLIMATE CHANGE REGIME: PARIS AGREEMENT

2015 Paris Agreement

- Article 3 obligation of all Parties to take ambitious efforts – including adaptation– in their NDCs
- Paris Agreement establishes the global goal of inter alia *enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change*. [Article 7]
- **Article 7** lays out a broad framework for adaptation that includes cooperation, planning for adaptation, the sharing of information, strengthening scientific research on climate change, developing and reporting adaptation planning...
- **Article 8** on Loss and Damage.

ADAPTATION UNDER THE CLIMATE CHANGE REGIME

- The existing framework for adaptation under the UNFCCC climate change regime promotes cooperation and assistance- technical, scientific, and financial
- But it does not provide a legal framework of adaptation for SLR including the situation of islands (baselines, island fortification, construction) except perhaps the financial and technical assistance component.

ADAPTATION, SEA LEVEL RISE AND THE LAW OF THE SEA

- UNCLOS was negotiated and adopted 10 years before the 1992 UNFCCC
- **Question is whether UNCLOS can provide the legal foundation for adaptation to SLR for islands and other offshore features**
- It is a pre-climate change instrument
- It does not have express provisions on climate change nor for “adaptation” to climate-change induced SLR



ARTIFICIAL ISLANDS AS AN ADAPTATION MEASURE: UNCLOS

- Construction of artificial islands/land reclamation as a measure of adaptation is gaining popularity.
- Example of the Maldives
- The concept of **floating cities** may very well become the new reality as low-lying coastal States and island states seek to adapt to the rising sea.
- A new term has even been coined for this-- “**sea-steading**” for a project that seeks to **create sustainable cities in international waters.**

ARTIFICIAL ISLANDS AS AN ADAPTATION MEASURE:

UNCLOS

- The **Sea-steading Institute** is a non-profit organization in San Francisco
- The Singapore-based start-up company, **Blue Frontiers** is responsible for fund-raising
- January 2017 an agreement concluded with French Polynesia for a floating city project.
- This project is being constructed within French Polynesian lagoons , where it has created a **special “sea zone” with a special regulatory framework**

ARTIFICIAL ISLANDS AS MEASURES OF ADAPTATION

- Long-term goal of “sea-steading” may be more ambitious
Mission statement of Blue Frontiers as to “build a fully autonomous and sustainable human habitat on the sea.”
- While climate change and sea level rise are cited as driving factors the mission statement also proclaims that **“since there is not enough space on land, it’s time to turn to the other two-thirds of the globe-to the seas “**
- The legal basis of such floating cities is to establish “special zones”, all of which raise legal questions

ARTIFICIAL ISLAND UNDER UNCLOS

- No definition of “artificial island” under UNCLOS
- The only definition is for an “island” under article 121 which includes the requirement of being a “**naturally formed area of land**”

ARTIFICIAL ISLANDS UNDER UNCLOS

- Articles 56 and 60 (EEZ)
- States have exclusive jurisdiction of State in the EEZ to establish and use *artificial islands, installations and structures*
- *Duty to give notice of construction of* artificial islands, installations or structures
- Can establish up to 500 meter safety zones
- Cannot interfere with established sea lanes used in international navigation
- Artificial islands (installations and structures) in the EEZ **do not have the status of an island/no territorial sea of their own/ no impact on delimitation of maritime zones**
- Article 87 freedom to construct artificial islands and other installations permitted under international law in the high seas

ARTIFICIAL ISLANDS UNDER UNCLOS

The question is whether construction to preserve the naturally formed feature could serve as a legal measure of adaptation to SLR?

ARTIFICIAL ISLANDS UNDER UNCLOS

Adaptation measures for SLR and islands: Legal framework?

- Coastal fortification = retains “natural formation” criteria
- Land reclamation = retains “natural formation” criteria
- *De novo* artificial islands = No entitlements
- *Preservation of existing islands under article 121 (not building islands from rocks) = ?*

CONCLUSIONS

- Island fortification/ preservation/ construction are measures of adaptation to SLR
- UNFCCC regime provides broad framework for adaptation but does not address specifically the legal aspects of these measures.
- UNCLOS has provisions on islands and artificial islands but these lack detail
- UNCLOS does not have express provisions on adaptation to SLR for islands
- Given the reality and serious consequences of SLR for many SIDS can international law, such as UNCLOS adapt to meet this challenge?