

[18 July 2022]

**INPUTS ON THE INTERNATIONAL LAW COMMISSION'S SUBTOPIC OF
"SEA-LEVEL RISE IN RELATION TO INTERNATIONAL LAW"**

Republic of the Philippines

The Philippines submits these comments on the following specific issues of interest to the International Law Commission (ILC) on the subtopic of "Sea-level rise in relation to international law":

- a. Examples of practice relating to the updating, and frequency of updating, national laws regarding baselines used for measuring the breadth of maritime zones; practice relating to the frequency of updating national maritime zone notifications deposited with the UN Secretary-General

The Philippines legislated Republic Act (RA) 3046 or "An Act Defining Baselines of the Territorial Sea of the Philippines" in 1961. This was amended in 1968 by RA 5446, and further amended in 2009 by RA 9522 to fully comply with the provisions of UN Convention on the Law of the Sea (UNCLOS). While the recent law does not have a provision on the updating of baselines, it does not mean that it cannot be updated, if circumstances warrant, such as in cases of coastal accretion, formation of new features, or developments in international law. Furthermore, we view RA 9522 as permissive when it comes to the baselines for the Regime of Islands in the Kalayaan Island Group and Bajo de Masinloc, because the law is couched in general terms such that it does not preclude the drawing of baselines around features that may be formed or discovered in the future.

We are also of the view that any adjustment of the baselines should result in expansion rather than diminution of our maritime zones. Erosion of coastlines and inundation of features as a result of sea level rise, for example, should not affect the baselines that the State has established.

Post-UNCLOS, the Philippines has so far deposited with the UN Secretary- General the maps and coordinates of our archipelagic baselines, outer limits of extended continental shelf in the Philippine Rise, and the Philippines-Indonesia Exclusive Economic Zone (EEZ) Boundary Agreement.

- b. Examples of practice relating to the updating, and frequency of updating, charts on which baselines and outer limits of the exclusive economic zone and of the continental shelf are drawn, as well as lists of geographical coordinates prepared in accordance with the relevant provisions of the UNCLOS and/or national legislation, including those which are deposited with the UN Secretary-General and given due publicity; examples of practice relating to updating, and frequency of

updating, navigational charts, including for purposes of evidencing changes of the physical contours of the coastal areas;

The updating of charts due to coastal changes is done as soon as possible for purposes of navigational safety and coastal zone management.

The updating and publication of baselines for areas under the Regime of Islands can also be done as part of the mapping and charting mandates of the national mapping agency, which in the Philippines is the National Mapping and Resource Information Authority (NAMRIA), and pursuant to relevant provisions of RA 9522 and Articles 5, 6 and 7 of UNCLOS. However, absent clear legal guidance on the matter, NAMRIA would seek the concurrence of relevant authorities before publishing such changes. Further, in accordance with Article 7(2) of UNCLOS, there is no need to change the baselines if it would result in a reduction of maritime zone areas as a result of the regression of the coastline. On the other hand, the updating of the straight archipelagic baselines of the main archipelago has to be subjected to the regular legislative process.

- c. Any examples of the taking into account or modification of maritime boundary treaties due to sea-level rise;

None.

- d. Information on the amount of actual and/or projected coastal regression due to sea-level rise, including possible impact on basepoints and baselines used to measure the territorial sea; and

The following figures are not official NAMRIA statistics but personal computations of the researcher, Captain Carter S. Luma-ang from his thesis on the "Rising Sea Level: A national security concern". However, it is used herein to provide an approximate of the effect of sea-level rise on the areas of the Philippines' maritime zones.

There will be 21 basepoints whose locations will be permanently and totally submerged underwater at 0.38-meter sea level rise. The submerged basepoints will increase to 24 at 0.82-meter sea level rise.

By 2046 (at 0.38-meter sea level rise), the loss (in sq.km.) in the following maritime zones, if the baselines are moved landward because of sea level rise, will be as follows: 5,834.23869 in Archipelagic Waters; 2,906.59467 in Territorial Sea, 2,585.11063 in Contiguous Zone; and 126,000.21822 in EEZ.

By 2100 (at 0.82-meter sea level rise), the loss (in sq.km.) will be as follows: 3,088.30288 in Archipelagic Waters; 2,900.82288 in Territorial Sea, 2,579.52789 in Contiguous Zone; and 125,931.73886 in EEZ.

An abridged version of said study, including a matrix on the “Effect of Changing Baselines to the Philippines' Maritime Zones”, may be accessed at <https://maritimereview.ph/rising-sea-level-a-national-security-concern/>.

- e. Information on existing or projected activities related to coastal adaptation measures in relation to sea-level rise, including preservation of basepoints and baselines

Except for constant monitoring of shoreline changes, NAMRIA does not have activities relating to the preservation of basepoints and baselines.

Attached, for ease of reference, is the Policy Brief submitted by Captain Luma-ang to the National Defense College of the Philippines for his Master's Program.

Permanent Mission of the Republic of the Philippines
to the United Nations, New York, 1 July 2022

RISING SEA LEVEL:

A national security concern

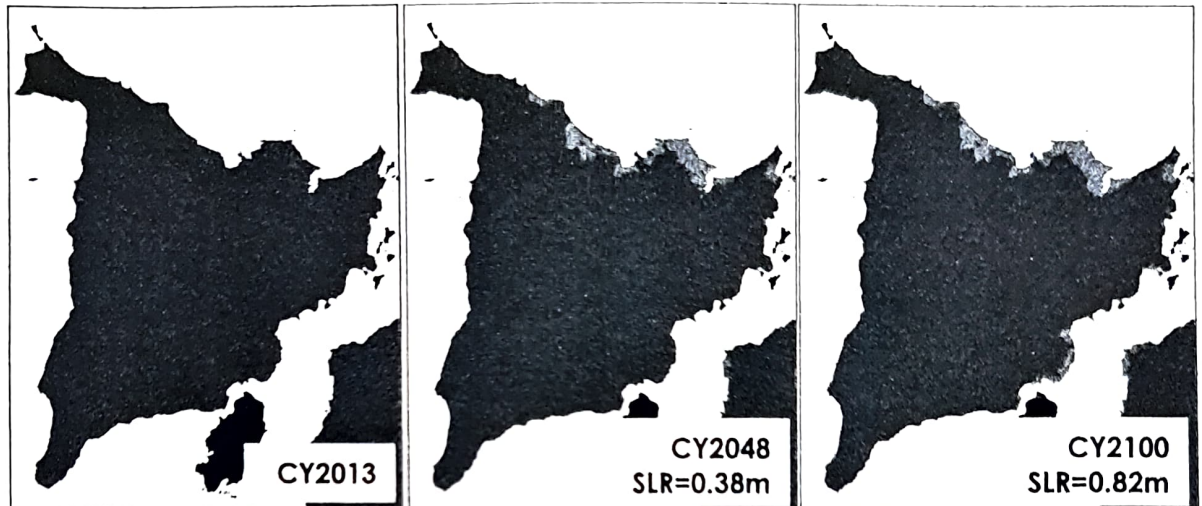


Figure 1. Land area of Panay Island before and after sea level rise (SLR).
The red-colored areas are the portions that will submerge with the given SLR.

Summary

Sea level rise pose threat to the Philippines in three ways. First, the low-lying areas will be submerged reducing the land area of the country. This may cause multiple problems such as relocation of the population, disruption of the ecology and re-allocation of budget. Second, the archipelagic baselines of the main archipelago may shift inwards. The movement of the baselines will also cause the outer limits of the archipelagic waters, territorial sea (TS) and exclusive economic zone (EEZ) to move inwards reducing their total areas. Third, some of the regime of islands will be submerged underwater and will lose their maritime zones.

This paper examines scenarios of sea level rise in 2048 and 2100, the likely impact to the land territory and maritime zones and possible policy responses to these impacts.

Why is sea level rise a threat to the national security?

The limits of the territory or land controlled by a State are defined by the coastline – the line where the land meets the sea. The adjacent sea area can also be claimed by the coastal State as its territorial sea where it can enforce laws almost in the same manner as it enforces them on land. Under the United Nations Convention on the Law of the Sea (UNCLOS), a coastal State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles (NM), measured from baselines. The state can also have a contiguous zone which may not extend beyond 24 NM from the baselines from which the breadth of the territorial sea is measured.

Policy Recommendation

1. A domestic law should be enacted permanently defining the limits of the territorial sea, contiguous zone and exclusive economic zone of the archipelago by listing the coordinates (not just by a general statement of declaring 12 NM or 200 NM for TS and EEZ, respectively) and publishing charts for that purpose.

2. A large-scale chart showing the baseline for measuring the breadth of the territorial sea including its outer limits at the regime of islands in the Kalayaan Island Group and Bajo de Masinloc should be published.

3. Permanent structures, such as aids to navigation, should be constructed on basepoints that will submerge in the immediate future.

4. Domestic laws that are affected by land area should be reviewed to mitigate the negative effect of reduction of land area brought by sea level rise.

"Since normal baselines are represented by low-water line, sea level is an important issue in the definition of normal baselines. That said, whilst normal, low water line, baselines would seem to be most obviously susceptible to change as a consequence of sea level rise, other types of straight line type baseline are also potentially threatened by sea level rise as such baselines need to be anchored to the coast as represented by the low water line."

Arsana (2013)

The coastal State is further entitled to an exclusive economic zone which shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.

Under the UNCLOS, which is also called the Law of the Sea treaty, the baselines are the reference for all maritime zones that a coastal State is entitled to. There are three types of baselines under the UNCLOS – normal baselines, straight baselines and archipelagic baselines. The Philippines uses archipelagic baselines for its archipelago (Luzon, Visayas and Mindanao) and normal baselines for the regime of islands in the Kalayaan Island Group and Bajo de Masinloc.

The normal baseline is the actual low water line of an island or feature. Thus, it moves with the sea level. When the sea level rises, the coastline and baseline moves landward thereby reducing the land area of the island or feature. The movement also reduces the effective area of the territorial sea surrounding the island or feature. If the island or feature will be totally submerged underwater, it will lose entirely its territorial sea.

Straight baselines are employed in localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity. Archipelagic baseline is a special type of straight baselines.

Under the UNCLOS, only islands or naturally formed bodies of land above water at high tide can have maritime zones. Thus, if a feature is underwater at high tide, it is not an island and can not have maritime zones.

When the UNCLOS was being drafted, sea level rise was not a major issue and no provisions on baselines being submerged due to sea level rise were included. Coastal States, including the Philippines, used outermost islands and drying reefs in designing their baselines in order to claim bigger maritime zones.

The Intergovernmental Panel on Climate Change (IPCC) issued its latest and fifth Assessment Report (AR5) showing that the sea level will rise at 0.38 meters in CY2048 and 0.82 meters in CY2100.

It is expected that many, if not all, basepoints of the Philippines will submerge underwater if sea level rises. However, no one knows up to what extent will the land shift and how much will the maritime zones of the Philippines change with such submerging of basepoints.

"However, where significant physical changes have occurred so that the chart does not provide an accurate representation of the actual low-water line at the chosen vertical datum, extrinsic evidence has been considered by international courts and tribunals in order to determine the location of the legal normal baseline."

-ILA Sofia Conference (2012)

Impact of Sea Level Rise to the Land Area and Maritime Zones

The data generated by the author from the latest Interferometric Synthetic Aperture Radar (IfSAR) images of the National Mapping and Resource Information Authority (NAMRIA) shows that the country will lose around 2,946.50 sq.km. and 6,151.52 sq.km. of land areas with 0.38 meters and 0.82 meters sea level rise, respectively. The land area loss after 0.82-meter sea level rise is larger than the islands of Cebu and Catanduanes combined. Unlike land area, the total length of coastlines increases as sea level rises.

Table 1. Effect of Sea Level Rise (SLR) to the Land Area and Coastline of the Philippines

	UNIVERSE (2013 IfSAR Data)	0.38m SLR (CY 2046)	Difference (from 2013)	0.82m SLR (CY2100)	Difference (from 2013)
Land Area (sq.km.)	295,954.36827	293,007.86087	2,946.50740 (decrease)	289,802.85177	6,151.5165 (decrease)
Coastline Length (km)	44,894.32158	58,314.07530	13,419.75372 (increase)	68,004.21132	23,109.88973 (increase)

"It is thus the terrestrial territorial situation that must be taken as starting point for the determination of the maritime rights of a coastal State."

- Qatar v. Bahrain (2001)

Aside from the effect on the land area and coastline length, sea level rise causes location of basepoints of the archipelagic baselines to submerge permanently underwater and the normal baselines to shift landwards. The shifting of the baselines causes subsequent effect on all the maritime zones measured from it.

Table 2. Effect of Sea Level Rise (SLR) to the Different Maritime Zones

Maritime Zone	CY 2013	0.38m SLR (CY 2046)	Difference	0.82m SLR (CY 2100)	Difference
Archipelagic Waters (sq.km.)	591,878.51	586,044.28	5,834.23	588,790.21	3,088.30
Territorial Sea (sq.km.)	114,359.22	111,452.62	2,906.60	111,458.40	2,900.82
Contiguous Zone (sq.km.)	116,896.28	114,311.17	2,585.11	114,316.76	2,579.52
Exclusive Economic Zone (sq.km.)	2,127,228.11	2,001,227.89	126,000.22	2,001,296.37	125,931.74



Figure 2. Bajo de Masinloc rock.
The rock at Bajo de Masinloc surveyed in 1997. The top of the rock is almost level with the sea surface at high tide.
Note: Photo courtesy of LCdr Jose T Arevalo, Jr.

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Unless cited otherwise, the figures and data were generated from the National Mapping and Resource Information Authority (www.namria.gov.ph) 2013 Interferometric Synthetic Aperture Radar (IfSAR) images.

Policy Implications

The effect of sea level rise to the national territory and maritime zones seems not to be given much importance.

Sea level rise can be considered as the predominant effect of climate change. Despite the attention given to climate change nowadays, discussions have focused generally on environmental and social impacts. The Philippines, even with its archipelagic nature, does not seem to give attention on how sea level rise will affect its territory and maritime zones. On the other hand, the international community is already voicing out opinions on how to address complications of shifting coastlines brought by sea level rise.

The existing laws of the country should be reviewed and amended if necessary, including the proposed Maritime Zones Bill, to ensure that the alarming impacts of sea level rise in the future will not greatly affect how the Philippine Government manages its own territory and maritime zones.

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