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"Geospatial Information for a Smarter Life and Environmental Resilience"
Confirming Sovereignty in Internal Waters:
Legal and Geospatial Aspects of Juridical Bay Definition in Indonesia

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Principle: Land dominates the Sea
Law codification

1958
UNCLOS I

1960
UNCLOS II

1982
UNCLOS III
Maritime Zones based on UNCLOS

- Sovereignty
- Sovereign Rights
- Baselines
- TS 12 M
- CZ 24 M
- EEZ 200 M
- Continental Shelf Art. 76 - LOSC
- High Seas
- The Area
- Part XI - LOSC

I Made Andi Arsana (2019)
1. Except as provided in Part IV, waters on the landward side of the baseline of the territorial sea form part of the internal waters of the State.

2. Where the establishment of a straight baseline in accordance with the method set forth in article 7 has the effect of enclosing as internal waters areas which had not previously been considered as such, a right of innocent passage as provided in this Convention shall exist in those waters.
Article 50:
Delimitation of internal waters Within its archipelagic waters, the archipelagic State may draw closing lines for the delimitation of internal waters, in accordance with articles 9, 10 and 11.
1. This article relates only to bays the coasts of which belong to a single State.

2. For the purposes of this Convention, a bay is a \textit{well-marked indentation} whose penetration is in such proportion to the width of its mouth as to contain land-locked waters and constitute more than a mere curvature of the coast. An indentation shall not, however, be regarded as a bay unless its area is as large as, or larger than, that of the semi-circle whose diameter is a line drawn across the mouth of that indentation.

3. For the purpose of measurement, the area of an indentation is that lying between the low-water mark around the shore of the indentation and a line joining the low-water mark of its natural entrance points. Where, because of the presence of islands, an indentation has more than one mouth, the semi-circle shall be drawn on a line as long as the sum total of the lengths of the lines across the different mouths. Islands within an indentation shall be included as if they were part of the water area of the indentation.

4. If the distance between the low-water marks of the natural entrance points of a bay does not exceed \textit{24 nautical miles}, a closing line may be drawn between these two low-water marks, and the waters enclosed thereby shall be considered as internal waters.

5. Where the distance between the low-water marks of the natural entrance points of a bay exceeds \textit{24 nautical miles}, a straight baseline of 24 nautical miles shall be \textit{drawn within the bay} in such a manner as to enclose the maximum area of water that is possible with a line of that length.
FOCUS: Internal Waters in Bays (ART. 10 LOSC: Para 1-5)

Animation by Arsana & Schofield, 2012
Since the area of the bay is larger than the area of the semi-circle, the bay can be closed.

Since the area of the bay is less than the area of the semi-circle, the bay cannot be closed.

The diameter of the semi-circle equals the total width of mouths X, Y, Z, islands in the bay count as part of the area of the bay.

If the mouth of the bay is wider than 24 nautical miles, a line can be drawn where the bay narrows to 24 nautical miles, provided the semi-circle test is satisfied.

Animation by Arsana and Schofield (2012)
6. The foregoing provisions do not apply to so-called "historic" bays, or in any case where the system of straight baselines provided for in article 7 is applied.

No specific guidelines on how to define historic bays
Bays in Indonesia
Around 400 with toponymy of bays
Steps of defining a bay

- Identify the mouth of bays where closing line is about to draw

Bintuni Bay di Papua Barat
Steps of defining a bay

- Measure the distance using specific measurement tool in relevant software

Bintuni Bay di Papua Barat
Steps of defining a bay

- Angel formed by the closing line and the general direction of the mouth of the bay is $\geq 45^\circ$

Bintuni Bay di Papua Barat
Steps of defining a bay

- Technical process to define the points for bay closing lines

Bintuni Bay di Papua Barat
Steps of defining a bay

Generate semi-circle with the diameter of the bay closing line

Bintuni Bay di Papua Barat
Steps of defining a bay

- Results: semi circle is smaller that the bay
- It is a juridical bay

Bintuni Bay di Papua Barat
Hasil Kajian Teluk di Papua

Bintuni Bay

23,7387

8156062332,1500 > 764514069,8100 → BAY!
Issues and Challenges

- Data Unification
- Details of Work vs Spatial Scale
- Complexity of Geospatial Configuration
- Institutional Coordination
A LONG ROAD TO UNIFIED DATA

Unified data

Different time
Different Scale
Different Institutions
Details of Work vs Spatial Scale

But…

Large-scale chart

Small-scale chart
Complexity of Geospatial Configuration

PETA WILAYAH
TELUK PELABUHANRATU DAN TELUK CILETUH

Skala Peta 1:200000

Pelabuhanratu Bay

Closing line < 24 Mil Laut
Semi Circle = 224,32 km²
Bay Area = 396,43 km²

Ciletuh Bay

Closing line < 24 Mil Laut
Semi Circle = 16,05 km²
Bau Area = 15,5 km²

SAMUDEРА HINDIA

12,9 M

3,45 M
Institutional Coordination

- Coordinating Ministry of Maritime Affairs
  - Geospatial information Agency
  - Hydro-Oceanographic Center of the Indonesian NAVY
  - Other Institutions
Concluding Remarks

- The need to define internal waters for Indonesia
- Mainly Juridical Bays
- Work in Progress
- No submission or due publicity has been done
- Better coordination and dedicated assignment are required
Thank You!