

Boundaries Delineation of Marine Management Sharing According to Local Government Law No. 23/2014 (Case Study: Surabaya, Sidoarjo, Bangkalan and Sampang)

Khomsin¹ and S Intan Ary Prayogi²

^{1,2} Geomatics Engineering Department, Faculty of Civil Engineering and Planning, Institut Teknologi Sepuluh Nopember Surabaya, Indonesia

Email : khomsin@geodesy.its.ac.id

Abstract. Regional autonomy is the right, the authority, and the obligation of autonomous region to set up and manage their own affairs and interests of the community in accordance with the potential and peculiarities of each area. To implement regional autonomy, the autonomous region must be clear where the location of its borders. Boundary area is divided into two, namely boundaries in the land and boundaries in the sea. Based on the authority of region government that regulated in Law of Republic Indonesia Number 23 in 2014, the regional maritime boundary consist of maritime management boundary for the province and maritime income sharing boundary for the district/city. This study aimed to determine the maritime income sharing boundary between Surabaya City, Sidoarjo, Bangkalan and Sampang District related to the presence of tanah oloran. Tanah oloran is located in the border of Surabaya City and Sidoarjo district which is currently being disputed border and seizure of property by the two districts/cities. The results of research represent that the claim ownership of Tanah Oloran can impact on maritime income sharing boundaries of Surabaya City and Sidoarjo District with region maritime overlapping is 2,258 ha and will benefit for the region maritime income sharing Sidoarjo District Government.

1. Introduction

According to Local Government Law, Indonesian Government delegate to Local Government (Provinces and Cities/Districts) to manage their region. Therefore, Local Government has right, authority and obligation to set up and manage their own affairs and interest of local communities. According this law, Local Governments have authorized to organize and to manage governmental affairs and public interests at its own initiative included in region boundary. Region boundary is dividing the territory of the one authority area to another [1][2]. Boundary area is divided into two, namely boundaries in the land and boundaries in the sea.

Referring to Law No. 32/2004 [1] and has been amended by Law No. 23/2014 [2] about Local Government in Indonesia, there are some fundamental differences, especially on regarding the management of marine areas in their regions. According to Law No. 32/2004 the provincial government has the authority to manage the sea up to 12 nautical miles from shoreline and district/city has the authority to manage the sea until 1/3 of the provincial authority [1]. Meanwhile on Law No. 23/2014, district/city government has not authority to manage marine areas but they just get the sharing income marine managed by province as far as 4 nautical miles [2]. Based on the authority of region government



that regulated in this law, the regional maritime boundary consist of maritime management boundary for the province and maritime income sharing boundary for the district/city. Province government has right to manage maritime zone until 12 nautical miles from high water line coastline. Althoughh distreic/city does not have right to manage maritime zone, they will get sharing income boundary from province until 4 nautical miles.

In addition, another fundamental difference is the referenced that is used to delineate the maritime boundary area. Based on UNCLOS 1982 Article 5 Section II [3], the baseline of the territorial sea is the low water line along the coast and the baseline used in the Law No. 32/2004 [1] and the Regulation of Minister of Home Affair No. 76/2012 [4] is also refer to the low water line (LWL)) as the same as UNCLOS 1982 reference. On the other hand, Law No. 23/2014 uses high water line (HWL) shoreline as reference to delineate maritime boundary [2]. Therefore, there was a significant impact on the maritime boundary into the regional authority to manage their maritime zones.

This paper will asses the sea boundary impact of ‘Tanah Oloran‘ (land accretion) in Sedati, Sidoarjo which direct to north or to the sea of Surabaya. Tanah Oloran is a new land that is formed naturally by river or beach sediment around the estuary through a long process. Tanah Oloran begins with the sea water abrasion. Due to abrasion, mud and sand were exposed to abrasion drift away towards the river mouth and settles there. From time to time, silt and sand increasing more widely so it appears a new land. The new land lead coastline change due conversion of sea dimention become land dimention. Until now, Tanah Oloran still a disputed territory between Surabaya City and Sidoarjo District [5].

The claim ownership of Tanah Oloran can impact maritime boundary between Surabaya City and Sidoarjo District, and the region in front of it, namely Bangkalan and Sampang district. In order to get a solution solving existing problems, it is necessary to study handling of a maritime boundary between Surabaya, Sidoarjo, Bangkalan and Sampang. In this case refers to Government Law No. 23/2014, since this law was the most recent regulations concerning maritime boundary area. Delimitation of maritime income sharing boundary related solutions for disputes Tanah Oloran by carthometric method, namely the determination of boundary on a map or satellite image and set in the form of a boundary map with a list of coordinate points of boundary.

2. Method

In this paper, we will focus on Tanah Oloran case in Sedati Sidoarjo which impact to maritime boundary between Sidoarjo and Surabaya (adjacent administration) and Sidoarjo- Surabaya and Bangkalan – Sampang as opposite administration. This case has geographical position on 07°11'LS - 07°22'LS and 112°48'BT - 113°2'BT (Figure 1)

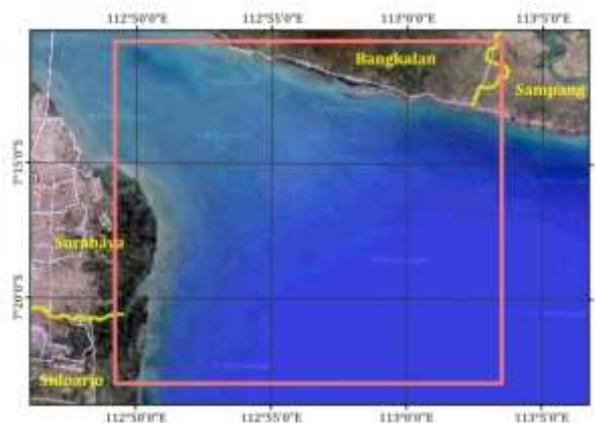


Figure 1. Area of study

Remote sensing technology is growing up until this time. Resolution also continuously increased. The result was also getting help in everyday human activities, one of which is to delimitate the shoreline so as to minimize the cost required for the survey / measurements in the field.

Generally, research methodology which used in this paper can be seen at Figure 2 as follow. The data used in this study is high-resolution satellite images SPOT 7 in 2015. SPOT 7 has high resolution to distinguish information that is spatially or spectrally adjacent [6]. So, this image is getting help in everyday human activities. One of the application is to high water line coastline delineation to minimize the cost required for field survey. After that buffering to delineate as far as 4 nautical miles from the coastline [4]. For areas that are overlapping sea territorial claims, conducted border demarcation with equidistance method for adjacent area and median line for adjacent each other [7].

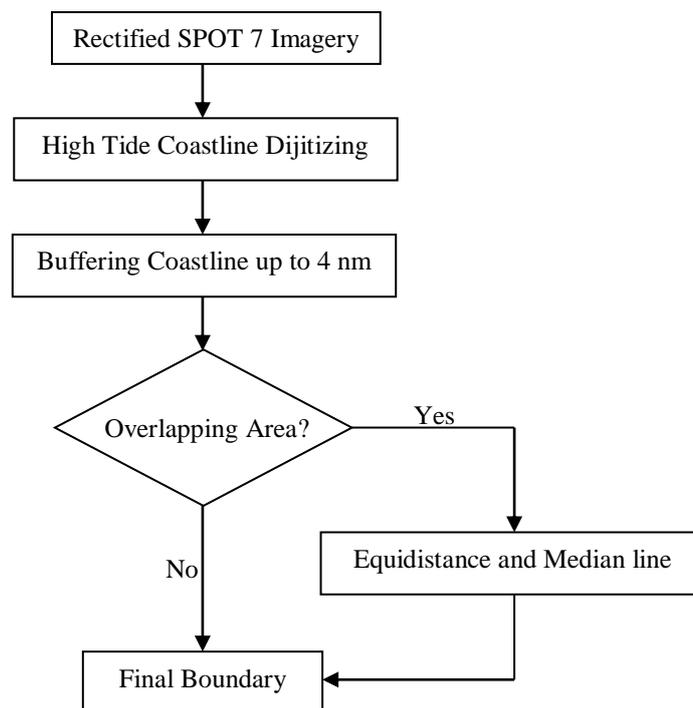


Figure 2. Research Methodology

3. Results And Analysis

3.1 Coastline Digitizing

According to Local Government Law No. 23/2014, the coastline used to determine maritime boundary is meeting boundary between sea and land parts in the event of the highest tides. Coastline at high tide position can be obtained easily through a variety of ways, both directly (field measurement) and Carthometric (digitizing high resolution satellite images). In this case, high water level of costline is conducted with the interpretation of the visual appearance of objects natural color composite or actually because of firm boundaries between sea and land (Figure 3) [8].

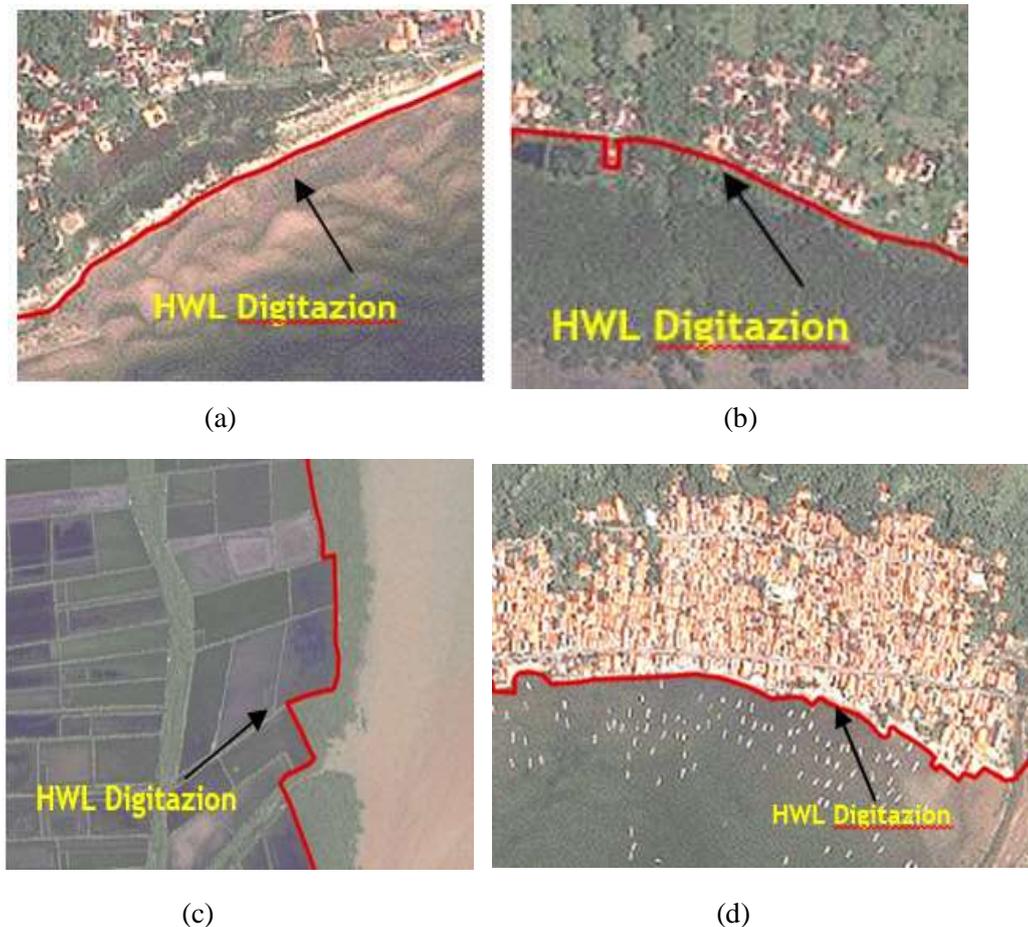


Figure 3. Digitizing of High-Water Level of Coastline at Bangkalan District

On the sand beach area, digitization is done following the trace or former sea on the sand when tide that look from the color of sand which still contains water and does not contain water (Figure 3a). For the area trees beach (mangrove) digitization is done following the outermost trees closest to the land. For the area, the beach trees (mangrove) done digitization in the outermost trees closest to the land. Due to the mangrove is plant species that live in the intertidal area that boundary area between land and sea where tidal influence is still occur. Then mangrove can be flooded during high tide and at low tide inundation free (Figure 3b) [9]. Moreover, the existence of mangrove capable of inhibiting the ocean waves coming from the ocean so it does not directly hit the land (Figure 3b) [10]. An artificial beach areas such as ponds and buildings, done digitization by the line of the outer boundary of a pond or permanent building which is located on the coast or the nearest land. To determine the high-water coastline in ponds area, digitization done following the outer boundary or pond dikes. Because the embankment of a pond created by humans which is designed so that sea water does not overflow to the mainland when the tide (Figure 3c) [8]. For a beach area that many permanent buildings standing man-made, then the digitization done by following the outer limit of the building (Figure 3d).

3.2 Buffering 4 Nautical Miles

District/city get sharing income boundary until 4 nautical miles from high water level coastline. After HWL delineation from SPOT 7 in figure 1, the next step is to buffer HWL shoreline up to 4 nautical miles. Superimposed is marine area for the results showed that the distance between Surabaya and Bangkalan less than 8 nautical miles (Figure 4). So delimitation maritime boundaries for the results on the site is done by the median line (median line) [4]. For adjacent areas such as between Surabaya and

Sidoarjo and between Bangkalan and Sampang, determining maritime boundaries performed with the principle of equal distance (equidistance) [4].



Figure 4. Superimposed maritime boundary from Surabaya-Sidoarjo to Bangkalan-Sampang

In this paper, we focus on Tanah Oloran case in Sedati, Sidoarjo with 2 alternatives. First, if Tanah Oloran is in Surabaya with assuming no land accretion (boundary between Surabaya and Sidoarjo is straight forward from river to sea). Second, if land accretion is in Sidoarjo territory because this land was certified by land agency Sidoarjo. [5]. Both of these alternatives has different impact to maritim boundaries between Surabaya, Sidoarjo, Bangkalan and Sampang (Figure 5). Provincial maritime boundary can be seen at Figure 4 with the dark blue. This area indicated that the distance from HWL coastline more than 4 nautical mile from Surabaya and Sidoarjo and also more than 4 nautical miles from HWL coatline Bangkalan daan Sampang. District/city maritime boundary can also be seen at Figure 4 with light blue and this indicated that the distance less than 4 nautical miles from HWL coastline.

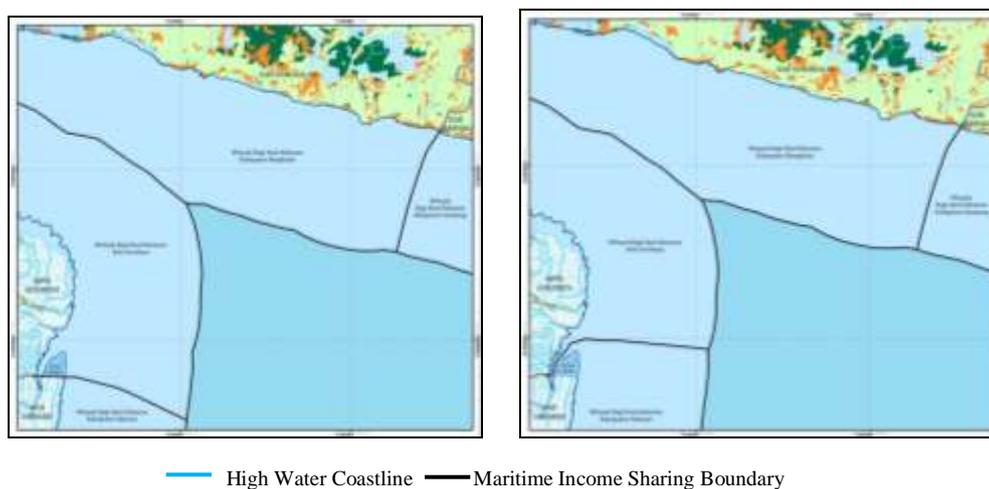


Figure 5. Maritime income sharing boundary (Left) If tanah oloran include area of Surabaya
(Right) If tanah oloran include area of Sidoarjo District

Tanah Oloran has no impact on maritime management boundary between Bangkalan and Sampang because of the distance more than 8 nautical miles from Tanah Oloran shoreline. If Tanah Oloran is Sidoarjo territory, so the impact of the area differences of maritime income sharing between Surabaya City and Sidoarjo District is 2,258 ha (Figure 6).



— The boundary if tanah oloran include Surabaya — Coastline High Tide
 — The boundary if tanah oloran include Sidoarjo

Figure 6. Overlapping of Maritime Income Sharing Boundary

4. Conclusion

There are two alternative solutions the disputes of Tanah Oloran in demarcation of maritime income sharing boundary of Surabaya City, Sidoarjo, Bangkalan and Sampang District, that if land accretion is Sidoarjo territory, so the maritime income sharing boundary for Sidoarjo increased 2,258 ha and otherwise Surabaya decreased as wide as Sidoarjo.

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