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Territory, *Hilāl*, and Sovereignty: Revisiting Indonesia's *Maṭla'* under MABIMS' New Criteria

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Abstract

Differences in determining the start of the lunar month often spark polemics due to varying methods, schools of thought, and interpretations of *maṭla'*. Indonesia adopts a territorial-based *maṭla'*, yet inconsistencies remain in how its geographical boundaries are applied. Law No. 43/2008 defines Indonesia's territory as including land, sea, and air, raising questions about the ideal scope of *maṭla'* under the MABIMS Neo Visibility Criteria and its legal status. This qualitative study uses library research and expert interviews, analyzed through Islamic legal principles (*ijtihād istiṣlāhī*) and a juridical-normative framework. Findings show that Indonesia's *maṭla'* ideally includes all sovereign areas-land, inland waters, archipelagic waters, and territorial seas. From a *syar'i* perspective, crescent sightings at sea are valid; hence, lunar calculations should reflect land and maritime zones under national jurisdiction.

Keywords: *maṭla'*, territory, *hilāl*, MABIMS.

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Perbedaan dalam penetapan awal bulan kamariah sering memicu polemik akibat variasi metode, mazhab, dan perbedaan dalam penafsiran *maṭla'*. Indonesia menganut konsep *maṭla'* berbasis wilayah teritorial, namun masih terdapat distorsi dalam penerapan batas geografisnya. UU No. 43 Tahun 2008 menyatakan bahwa wilayah Indonesia mencakup darat, laut, dan udara. Hal ini menimbulkan pertanyaan: apa batas geografis *maṭla'* yang ideal menurut Kriteria Imkan Rukyat MABIMS terbaru, dan bagaimana status hukumnya? Penelitian ini merupakan studi kepustakaan kualitatif dengan analisis deskriptif melalui pendekatan *ijtihād istiṣlāhī* dan pendekatan yuridis normatif. Hasilnya menunjukkan bahwa *maṭla'* Indonesia seharusnya mencakup seluruh wilayah kedaulatan nasional-darat, perairan pedalaman, perairan kepulauan, dan laut teritorial. Secara *syar'i*, rukyat di laut adalah sah; oleh karena itu, perhitungan awal bulan harus meliputi seluruh zona kedaulatan darat dan laut Indonesia.

Kata Kunci: *maṭla'*, territorial, *hilāl*, MABIMS.

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A. Introduction

Determining the beginning of the lunar month is an important matter for Muslims, yet it always invites polemics.[1] This debate often occurs at local, national, and international levels.[2] It is caused by differences in systems, schools of thought, and the concept of *maṭla'* in determining the beginning of the lunar month in Indonesia. The *maṭla'* referred to here is the geographical boundary for the applicability of *rukyat* (moonsighting).[3] The extent of the applicability of *rukyat al-hilāl* (crescent moonsighting) in a given area is known in astronomical terminology as *maṭla'*.[4] According to the Fatwa of the Indonesian Ulama Council (MUI) Number 2 of 2004 concerning the Determination of the Beginning of Ramadan, Shawwal, and Zulhijah, the determination uses both the *rukyat* and *ḥisāb* systems by the Government of Indonesia, represented by the Minister of Religious Affairs.[5] If one region in Indonesia observes the crescent, the government will determine the beginning of the lunar month based on that sighting for all regions of Indonesia, referred to as the *maṭla'* of Indonesia.[6]

However, to this day, experts and government authorities involved in determining the lunar month have not had a clear and standardized reference when applying the concept of Indonesia's geographical *maṭla'*. This is because no decision has been made regarding the ideal boundary and scope of its application according to the Neo Visibility MABIMS Criteria. The Neo Visibility MABIMS Criteria only addresses the principle of Indonesia's *maṭla'*, but the precise geographical boundaries and the extent of its application, whether on land, sea, or air, have never been formally decided.[7]

Based on the analysis of the draft decision of the Jakarta Recommendation 2017, the Ad-Referendum Approval of the New *Imkān al-rukyah* Criteria of MABIMS, and the *Fatwa* of the Indonesian Ulama Council (MUI) Number 2 of 2004 on the Determination of the Beginning of Ramadan, Shawwal, and Zulhijah, there is no explicit statement in these decisions that defines whether the criteria apply only on land or also in maritime areas. Meanwhile, According to Law No. 43 of 2008 on State Territory, in Chapter III, Section One, Article 4, it states: 'The territory of the state includes land territory, waters, the seabed, and the subsoil, as well as the airspace above it, including all the natural resources contained within it". The international legal basis United Nations Convention on the Law of the Sea (UNCLOS) 1982, which Indonesia adheres to, state that Indonesia has several maritime zones with the same legal authority as land, which should still be included in the definition of *wilāyat al-ḥukm* of Indonesia.

Therefore, the issue arises when the Islamic date line only intersects the water areas (especially the waters to the west of Indonesia) within Indonesia's Exclusive Economic Zone (EEZ)

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[1] Ahmad Izzuddin, *Fiqih Hisab Rukyah* (Jakarta: Erlangga, 2007).

[2] Nurul Badriyah and Faisal, "Penetapan Awal Bulan Dengan Metode Ittihadul Mathla' Di Indonesia," *Al-Qadha* 5, no. 1 (2018): 48–49, https://doi.org/https://doi.org/10.32505/qadha.v5i1.960.

[3] Susiknan Azhari, *Ilmu Falak: Perjumpaan Khazanah Islam Dan Sains Modern* (Yogyakarta: Suara Muhammadiyah, 2007).

[4] Nugroho Eko Atmanto, "Implementasi Matlak Wilayatul Hukmi Dalam Penentuan Awal Bulan Kamariah (Perspektif Nahdlatul Ulama Dan Muhammadiyah)," *Elfalaky: Jurnal Ilmu Falak* 1, no. 1 (January 2017): 46, https://doi.org/https://doi.org/10.24252/ifk.v1i1.3676.

[5] Puslitbang Kehidupan Beragama, *Hisab Rukyat Dan Perbedaannya*, ed. Choirul Fuad Yusuf and Bashori A. Hakim (Jakarta: Badan Litbang Agama dan Diklat Keagamaan Departemen Agama RI, 2004).

[6] Yusuf Somawinata, *Ilmu Falah: Pedoman Lengkap Waktu Salat, Arah Kiblat, Perbandingan Tarikh, Awal Bulan Kamariah Dan Hisab Rukyat*, ed. Monalisa (Depok: PT RajaGrafindo Persada, 2020).

[7] Ahmad Izzuddin, "Interview" (Semarang, 2023); Khafid, "Interview" (Semarang, 2023).

or additional zones, including territorial waters. The question is whether the initial determination of the lunar month includes those areas. However, the 2016 Turkish Global Islamic Calendar states that the visibility of the crescent moon at sea is not considered in the calculation.[8]

B. Method

This research uses qualitative library research, which is closely associated with text analysis activities.[9] Data collection is carried out by examining Quranic verses, hadiths, books of literature, Decrees, and applicable laws, as well as supported by experts' opinions on the boundaries of the validity of *rukyat* results in the perspectives of Islamic law and positive law. The primary data used consists of draft decisions such as the Jakarta 2017 Recommendation, the Ad-Referendum Approval of the New *Imkān al-rukyah* MABIMS Criteria, the Fatwa of the Indonesian Ulema Council (MUI) No. 2 of 2004 concerning the Determination of the Start of Ramadan, Shawwal, and Zulhijah, and interviews with informants. Meanwhile, secondary data includes the Indonesian Law No. 43 of 2008 on State Territory, the international legal basis of the United Nations Convention on the Law of the Sea (UNCLOS) 1982, which Indonesia applies, and related documents.

Documentation method is used as one of the techniques for collecting primary and secondary data. Interviews are conducted using purposive sampling, considering that the informants have the most knowledge and are considered experts in the field because they are directly involved or have the ability and understanding relevant to this research.[10] The interviews were conducted with several experts, including Thomas Djamaluddin, a Professor of Astronomy-Astrophysics at the Space Research Center of the National Research and Innovation Agency (BRIN); Khafid, Head of the Center for Spatial Planning and Atlas Mapping (PPTRA) at the Geospatial Information Agency (BIG); Ismail Fahmi, Head of the Sub directorate for *ḥisāb-rukyat* and Sharia at the Directorate of Islamic Affairs and Sharia Development, Ministry of Religious Affairs; as well as the team involved in formulating the Jakarta 2017 Recommendation and the draft approval of the MABIMS Neo-Visibility Criteria for the new criteria set in 2022 AD/1443 AH. Also, Ahmad Izzuddin, Chairman of the Indonesian Astronomy Lecturers Association, and Slamet Hambali, an astronomer.

This research analysis uses an Islamic legal approach based on *fiqh* (Islamic law) principles, with the method of *ijtihād al-iṣṭilāḥī*, which is a legal reasoning method that gathers textual evidence to create universal principles for the protection and pursuit of public welfare.[11] This study explains and analyzes the boundaries of areas related to the scope of *rukyat al-hilāl* visibility, which remains a subject of debate, through both *sharʻī* and juridical-normative (positive law) approaches in Indonesia. The analysis is carried out by linking the theory of the *maṭla'* of Indonesian territory used in Indonesia, as outlined in the *Fatwa* of the Indonesian Ulama Council (MUI) No. 2 of 2004 regarding the Determination of the Start of Ramadan, Shawwal, and Zulhijah, which is compared with the

[8] Syamsul Anwar and Tono Saksono, *Makalah Narasumber: Halaqoh Nasional Ahli Hisab Dan Fikih Muhammadiyah Tindak Lanjut Kalender Islam Global* (Yogyakarta: Majelis Tarjih dan Tajdid Pimpinan Pusat Muhammadiyah (MTT PP Muhammadiyah), 2016), 40.

[9] Amir Hamzah, *Metode Penelitian Kepustakaan: Library Research (Kajian Filosofis, Aplikasi, Proses Dan Hasil Penelitian)*, ed. Febi Rizki Akbar (Malang: Literasi Nusantara, 2020), 7.

[10] Sugiyono, *Metode Penelitian Kuantitatif Kualitatif Dan R&D* (Bandung: Alfabeta, 2012).

[11] Muhammad Roy Purwanto, *Reformasi Konsep Mashlahah Sebagai Dasar Dalam Ijtihad Istislahi* (Yogyakarta: Universitas Islam Indonesia, 2017), 85.

Indonesian Law No. 43 of 2008 on State Territory and the international legal basis of the United Nations Convention on the Law of the Sea (UNCLOS) 1982, used by Indonesia.

C. Result and Discussion

There are two opinions regarding the *ikhtilāf* (difference) and *ittiḥād* (unity) of the *maṭla'* among the scholars: *First*, The Non-Applicability of *ikhtilāf al-maṭāli'*. This opinion is followed by the Ḥanafī, Mālikī, and one opinion within the Shāfi'ī and Ḥanbalī madhhab.[12] This group asserts that if the *hilāl* is proven (*isbat*) to be visible in one country, it should apply to the entire Earth. Based on the hadiths of the Prophet Muhammad regarding the beginning of Ramadan and Eid, which are general, the applicability of the *maṭla'* is universal without regional boundaries, reasoning that standardization can serve as a unifying tool for the Muslim *ummah*.[13] *Second*, The Applicability of *ikhtilāf al-maṭāli'*. The Shāfi'ī and some Ḥanafī scholars follow this opinion. An-Nawawi, a prominent scholar of the Shāfi'ī's school, stated that each country has its *rukyah*. If the *hilāl* is sighted in a particular country, *rukyah* does not apply to distant countries. As stated in *Fatwa* of the Indonesian Ulema Council (MUI) Number 2 of 2004 on the Determination of the Beginning of Ramadan, Shawwal, and Zulhijah, Indonesia implements *rukyat* and *ḥisāb*, as well as *maṭla'* in its territory.[14] Furthermore, according to Law of the Republic of Indonesia No. 43 of 2008 on State Territory, the territory of the Unitary State of the Republic of Indonesia includes land, sea, and airspace.

Geographically, boundaries serve as markers for the territorial extent of a country, including its land, sea, and airspace. Legally, national boundaries influence the scope of a country's domestic law. Politically, these boundaries represent the borders of a country's sovereign power. The border regions of the Republic of Indonesia hold strategic significance for Indonesia's national interests.[15] Constitutionally, the territorial integrity of the Unitary State of the Republic of Indonesia is enshrined in Article 25A of the 1945 Constitution of the Republic of Indonesia, with further conceptual foundations provided in Law No. 3 of 2002 on National Defense and Law No. 43 of 2009 on National Territory.

1. Land Territories

   The land area of a country consists of the initial land of the country or additional territory. This land includes dry land and inland waters like rivers and lakes. The size of the initial land can be determined by the actions or unilateral declarations of a country when it proclaims its independence, through international agreements, international customs, or by developments after the formation of the state. In addition to the initial land, international law also recognizes

[12] Arwin Juli Rakhmadi Butar-Butar, *Problematika Penentuan Awal Bulan: Diskursus Antara Hisab Dan Rukyat* (Malang: Madani, 2014), 131–32.

[13] Olyfiya Frifana Sherly, "Hadis Matla' Hilāl (Tempat Terbitnya Hilāl Dan Tempat Terjadinya Hilāl)," *Al-Afaq: Jurnal Ilmu Falak Dan Astronomi* 2, no. 1 (2020): 15–30, https://doi.org/https://doi.org/10.20414/afaq.v2i1.2296.

[14] Muhamad Zainal Mawahib, "Implikasi Penggunaan Sistem Perhitungan Aboge Dalam Penetapan Awal Bulan Hijriah," *Syaksia : Jurnal Hukum Perdata Islam* 23, no. 2 (May 2, 2022): 182–210, https://doi.org/10.37035/syaksia.v23i2.7052.

[15] Dewa Gede Sudika Mangku, "Peran Badan Nasional Pengelolaan Perbatasan (BNPP) Dalam Menjaga Kedaulatan Wilayah Negara Kesatuan Republik Indonesia," *Jurnal Ilmiah Ilmu Sosial* 4, no. 2 (January 7, 2019): 167–74, https://doi.org/10.23887/jiis.v4i2.16532.

the concept of additional territory based on classical international law theories.[16] The 1982 United Nations Convention on the Law of the Sea states that each coastal state has the right to determine the baseline to establish the maritime boundary between two states.[17]

2. Maritime Areas and Zones

The adoption of the archipelagic state concept for Indonesia in the United Nations Convention on the Law of the Sea (UNCLOS) 1982, which resulted from the Third United Nations Conference on the Law of the Sea (UNCLOS III) held between 1973 and 1982, was successful and received international recognition. Indonesia ratified the United Nations Convention on the Law of the Sea (UNCLOS) 1982 through Law No. 17/1985. Indonesia utilized Law No. 5/1983 regarding the Exclusive Economic Zone (EEZ) and revised Law No. 4/Prp/1960 with Law No. 6/1996 concerning Indonesian Waters. Law No. 6/1996 adopts maritime zones from the United Nations Convention on the Law of the Sea (UNCLOS) 1982.[18]

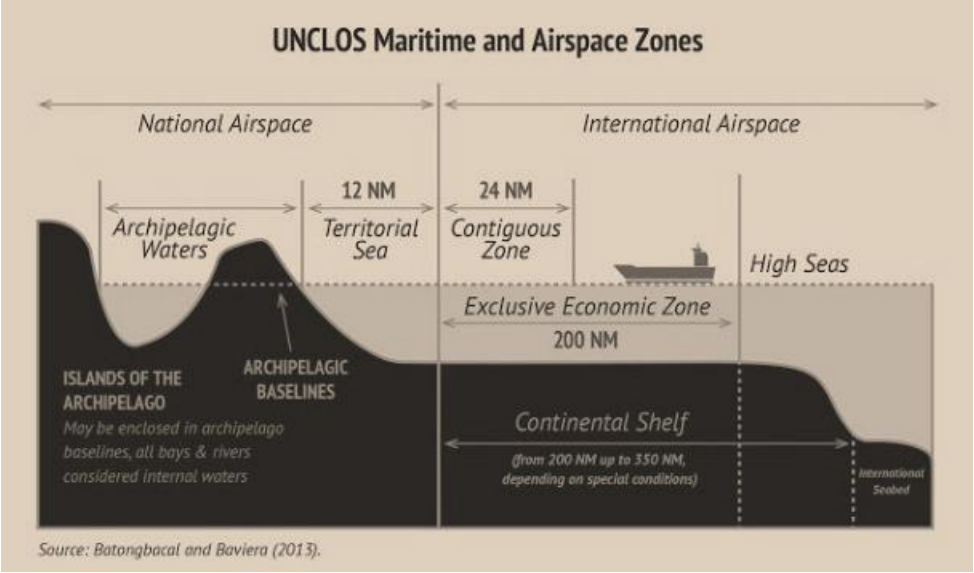

Figure 1. Maritime Areas and Zones[19]

According to the Republic of Indonesia Law No. 32 of 2014 on Marine Affairs, Article 6, first paragraph states that the maritime territory consists of the waters, jurisdictional areas, high seas, and international seabed areas. The high seas and the international seabed area are not part of Indonesia's national territory.

3. The Dimension of State Sovereignty Over Airspace

The boundaries of airspace can be viewed from two perspectives: horizontal and vertical. The horizontal boundaries of airspace follow the territorial boundaries of the land and sea of the

[16] Sefriani, *Hukum Internasional: Suatu Pengantar* (Jakarta: Rajawali Pres, 2016), 174.

[17] Agustina, *Hukum Laut Internasional* (Yogyakarta: Suluhmedia, 2018), 43.

[18] Dhina Puspitawati, *Hukum Laut Internasional* (Depok: Kencana, 2017), 29–30.

[19] Arief Kresna Wira Prasdyantoro, "Hukum Laut," ariefkresnalaw.wordpress.com, 2018, https://ariefkresnalaw.wordpress.com/2018/01/05/hukum-laut/.

country. Meanwhile, the vertical boundaries of a country's airspace remain an area where no international consensus has yet been reached. The horizontal boundaries (space) of airspace above the superjacent sea reflect and divide the legal regime of different maritime areas and zones.[20]

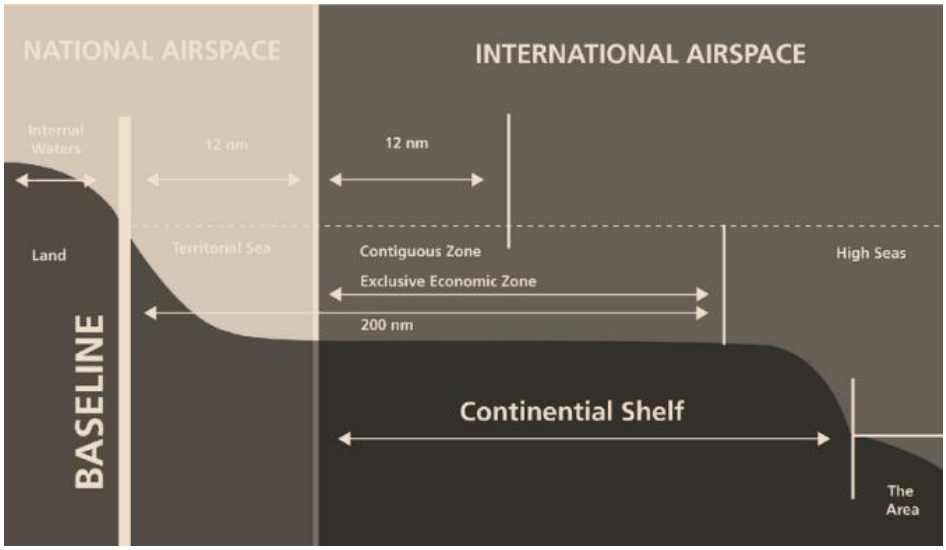

Figure 2. Dimension of State Sovereignty Over Airspace[21]

Therefore, a country's airspace is above its land territory, internal waters, territorial sea, and archipelagic waters. Thus, the airspace above the Additional Zone and Exclusive Economic Zone (EEZ) of a country is not considered part of the country's airspace.[22]

The ideal range of the geographical *maṭla'* of Indonesia, based on the Neo-Visibility MABIMS criteria, in terms of positive law, astronomy, and *fiqh*, includes land areas and maritime zones that fall under Indonesia's full sovereignty and national jurisdiction. These include Territorial Sea, Archipelagic Waters, and Internal Waters, which have the same legal authority as land and sea. From a Sharia perspective, the visibility of the *hilāl* (crescent moon) in maritime areas is legally valid in Islam. Therefore, the calculation of the new month (*ḥisāb*) should not be bordered to land but should also consider observations in maritime zones within Indonesia's sovereign geographical territory.

1. The Ideal Geographical Boundary Reference of *Maṭla'* in Indonesia Based on the Neo-Visibility Criteria of MABIMS

The issue raised by scholars and experts is whether the sighting of the Ramadan crescent or the Eid crescent in one region should be followed by other regions that have not yet observed

[20] Setyo Widagdo et al., *Hukum Internasional Dalam Dinamika Hubungan Internasional* (Malang: UB Press, 2019), 146.

[21] Kristi Govella et al., "Governing the Global Commons: Challenges and Opportunities for US-Japan Cooperation," *GMF: Ideas Leadership Hope*, no. Desember (2022).

[22] Mangisi Simanjuntak, *Hukum Internasional: Perjuangan Negara-Negara Berkembang Dalam Mencapai Persamaan Hak* (Jakarta: Mitra Wacana Media, 2018), 185.

the crescent. According to an interview with Mr. Ismail Fahmi, the Head of the Sub directorate for *ḥisāb-rukya*t and Sharia at the Directorate of Islamic Religious Affairs and Sharia Development, Directorate General of Islamic Community Guidance at the Ministry, the determination of the start of the Islamic lunar month in Indonesia cannot rely on a global *maṭla'* because if the entire Earth's surface were considered the same, it would become ambiguous and contradict the followers of the *rukyat*. For instance, crescent may still be below the horizon in Indonesia, while in Saudi Arabia it could already be high enough to be visible, as was the case at the beginning of the month of Zulhijah 1443 H. Furthermore, he also stated that the concept of Indonesia's geographical *maṭla'* follows the regulations and legislation of Indonesia.[23]

a) Indonesia's Geographical *Maṭla'* from an Astronomical Perspective

Analyzing the geographical *maṭla'* of Indonesia involves calculating the start of the lunar month for both land and maritime areas of Indonesia. For maritime regions, the calculation uses the outermost coordinates of the Indonesian Archipelagic State (NKRI), which is 12 nautical miles from the baseline of the Indonesian archipelago. The sea's coordinate reference point follows the baseline of the archipelago as outlined in the Government Regulation of the Republic of Indonesia Number 38 of 2002 on the List of Geographical Coordinates of the Baseline Points of the Indonesian Archipelago. According to Chapter I, General Provisions, Section 9 of PP Number 38 of 2002 (38/2002), it states:

> "One nautical mile is a geographical mile equivalent to 1/60 (one-sixtieth) of a degree of latitude."

Furthermore, in the Indonesian Government Regulation Number 37 of 2008, which amends Government Regulation Number 38 of 2002 concerning the List of Geographic Coordinates of Indonesia's Archipelagic Baselines, Article I, Section 1 states that one nautical mile is 1,852 meters. Therefore, one nautical mile corresponds to one arc degree, where one degree is divided into 60 minutes, and one-minute equals one nautical mile. The length of one nautical mile, or the International Nautical Mile, is 1.852 km or 1,852 meters. Hence, 12 nautical miles equals 22,224 meters or 12 minutes of arc.

In the maritime area, the geographical coordinates of the archipelagic baselines of Indonesia will be used as the reference, with an additional 12 minutes for the territorial sea.

[23] Ismail Fahmi, "Interview" (Jakarta, 2023).

Table 1. Geographical Data of Indonesia's Land and Territorial Sea Areas

LAND TERRITORIES			
City	**Latitude**	**Longitude**	**TZ**
Banda Aceh	5° 51′ 59'' N	95° 13′ 00'' E	+7
Pelabuhan Ratu	6° 59′ 17.4'' S	106° 33′ 1.8''E	+7
Jayapura	2° 32′ 40.8'' S	140° 41′ 57'' E	+9
Merauke	8° 29′ 37.8'' S	140° 24′ 2.4'' E	+9
Kupang	10° 9′ 52.8'' S	123° 34′ 46.2'' E	+8
Tanjung.Selor	2° 50′ 37.8'' N	117° 21′ 54'' E	+8
Palu	0° 53′ 38.4'' S	119° 51′9'' E	+8
SEA AREAS			
Rondo Sea	6° 16′ 30'' N	94° 54′ 45'' E	+7
Tanjung Kalapa Sea	2° 38′ 22'' S	140° 48′ 47'' E	+9
Ndana Sea	11° 12′ 36'' S	123° 4′ 37'' E	+8
Miangas Sea	5° 46′ 2''N	126° 46′ 54'' E	+8

Subsequently, the calculation of the beginning of the month of Zulkaida 1448 AH was conducted using data from Indonesia's western land and sea *markaz*. The calculation for Indonesia's land areas using the *Alfalak 2025* software was developed based on modern astronomical principles aligned with the *ḥisāb* methods of scholars and Islamic astronomy experts. It is equipped with real-time calculations of the Moon and Sun's positions to enhance precision. During the meeting of astronom in Jakarta on Wednesday (February 19, 2025), the Geospatial Information Agency (BIG) handed over the software to the Ministry of Religious Affairs. As a contemporary calculation platform, *Alfalak 2025* is designed to facilitate Islamic astronomical calculations for determining the beginning of the Hijri months. It is expected to serve as a reference, replacing the manual calculations still widely used.[24]

Table 2. Calculation of the Beginning of Zulkaida 1448 H (Western Indonesia Time)

Data	**Western Land (Western Indonesia Time)**		**Rondo Sea**
	Pelabuhan Ratu	**Banda Aceh**	
Geocentric Conjunction	06:49:47.84	06:51:06.33	06:51:06.33
Sunset	17:57:30.17	18:47:24	18:49:24
Moonset	18:02:55.62	19:02:59	19:05:14
Sun Azimuth	276° 44' 19.71''	276° 58' 59''	276° 59' 40''
Moon Azimuth	283° 32' 03.71''	283° 08' 15''	283° 07' 29''
Moon Altitude	01° 19' 08.57''	02° 59' 13''	03° 05' 03''
Geocentric Elongation	07° 19' 34.35''	07° 40' 36.11''	07° 41' 31''

The calculation of the beginning of Ramadan 1448 AH using the Ephemeris method by the Ministry of Religious Affairs of the Republic of Indonesia applied three *markazs* with the Neo-Visibility Criteria of MABIMS. The results indicated that only the Rondo Sea area met the criteria

[24] Kementerian Agama Republik Indonesia, "Kemenag Terima Software Alfalak 2025 Untuk Permudah Hisab Awal Bulan Hijriah," www.kemenag.go.id, 2025, https://kemenag.go.id/nasional/kemenag-terima-software-alfalak-2025-untuk-permudah-hisab-awal-bulan-hijriah-yfnAy.

for the minimum crescent altitude (center) and geocentric elongation. Based on an interview with Thomas Djamaluddin, a Research Professor of Astronomy and Astrophysics at the National Research and Innovation Agency (BRIN), it was stated that in astronomical criteria and those adopted by MABIMS, the crescent altitude is measured at the center of the Moon's disk. Similarly, Slamet Hambali, an expert in Islamic astronomy and a lecturer in Islamic astronomy at UIN Walisongo Semarang, highlighted this perspective, although a clear consensus has not yet been reached.

Table 3. Calculation of the Beginning of Zulkaida 1448 H (Eastern Indonesia Time)

Data	Eastern Land Indonesia Time)		Tanjung Kalapa Sea
	Merauke	Jayapura	
Geocentric Conjunction	08:49:47.84	08:49 47.84	08:49:47.84
Sunset	17:40:20.59	17:41:58.60	17:41:18.44
Moonset	17:43:04.91	17:47:21.79	17:46:58.12
Sun Azimuth	276° 44' 03.89''	276° 45' 52.20''	276° 45' 54.52''
Moon Azimuth	282° 56' 55.47''	282° 47' 18.26''	282° 47' 25.22''
Moon Altitude	00° 15' 45.37''	00° 49' 39.49''	00° 48' 31.54''
Geocentric Elongation	06° 24' 31.72''	06° 25' 09.19''	06° 24' 53.82''

In the table above, the calculation of the beginning of the month of Zulkaida 1448 AH used three *markazs* within a single time zone of Eastern Indonesia. The results indicate that none of the regions, either land or sea, met the Neo-Visibility Criteria of MABIMS, even though the elongation was considered "critical." Based on the Ephemeris calculations by the Ministry of Religious Affairs of the Republic of Indonesia, the southeastern land area (Merauke) and its territorial sea area showed a difference of 00° 32' 46.17' in the lunar crescent altitude (*Mar'ī*). Meanwhile, the northeastern land area (Jayapura) and its territorial sea area showed a difference of approximately 1 minute, as they both lie at the same eastern longitude, resulting in minimal differences in both crescent altitude and elongation. However, due to Tanjung Kalapa being further east, its value was lower than that of the land area.

Table 4. Calculation of the Beginning of Zulkaida 1448 H (Central Indonesia Time- Southern Region)

Data	Southern Indonesia (Central Indonesia Time)	
	Kupang	Ndana Sea
Geocentric Conjunction	07:49:47.84	07:49:47.84
Sunset	17:46:48.59	17:48:08.60
Moonset	17:50:45.41	17:51:58.49
Sun Azimuth	276° 45' 25.71''	276° 46' 19.23''
Moon Azimuth	283° 20' 41.48''	283° 23' 58.47''
Moon Altitude	00° 30' 25.25''	00° 24' 14.35''
Geocentric Elongation	06° 50' 35.15''	06° 51' 07.28''

The subsequent calculation takes the southernmost markazs point of Indonesia at Central Indonesia Time. Based on the Ephemeris calculations method by the Ministry of Religious Affairs of the Republic of Indonesia, the Neo-Visibility Criteria of MABIMS for *imkān al-rukyah* were not met, as although the elongation met the criteria, the crescent altitude did not. The calculation results showed that the crescent altitude at sea near Ndana sea was lower than that of the land area of Kupang, as Ndana sea is positioned further south than Kupang. Additionally, the elongation difference was 1 minute, as Ndana sea lies west of Kupang.

Table 5. Calculation of the Beginning of Zulkaida 1448 H (Northern Part of central region of Indonesia)

Data	Northern Indonesia (Central Indonesia Time)		Palu (Central)
	Tanjung Selor	Miangas Sea	
Geocentric Conjunction	07:49:47.84	07:49:47.84	07:49:47.84
Sunset	18:17:52.89	17:41:28.12	18:06:08.41
Moonset	18:28:29.70	17:52:10.12	18:14:55.36
Sun Azimuth	276° 52' 47.64''	276° 56' 26.53''	276° 48' 28.15''
Moon Azimuth	282° 58' 47.36''	282° 44' 53.31''	283° 04' 55.78''
Moon Altitude	02° 02' 00.57''	02° 02' 28.50''	01° 34' 19.40''
Geocentric Elongation	07° 03' 10.75''	06° 48' 26.73''	06° 58' 23.54''

The subsequent calculation uses the northernmost *markazs* point of Indonesia. The criteria were not met in this region as the crescent altitude did not reach 3 degrees. Based on the calculations, the crescent was higher in the sea area of Miangas sea, as it has a higher latitude, even though Tanjung Selor lies to the west of Miangas sea. However, both are in the same time zone, Central Indonesia Time. This calculation can also be seen in Table 4, where the crescent altitude in Kupang is higher than that of the sea area of Ndana, due to Kupang's higher latitude, even though Ndana Island lies to the west of Kupang.

Based on this case, it can be concluded that in Zulkaida 1448 H, Indonesia's *maṭla'* will be divided into two regions, where the westernmost area meets the *imkān al-rukyah* criteria, while the eastern region does not. Given that Indonesia adopts a national geographical maṭla', if the crescent moon is observed in the westernmost region, then the entire territory of Indonesia will be considered to have entered the new month. Analysis indicates that across all representative areas of Indonesia during Zulkaida 1448 H, landmass as the whole does not meet the MABIMS Neo-Visibility Criteria for the crescent, as the central position of the crescent remains below 3 degrees. However, in the maritime area at the westernmost boundary, specifically in the Rondo Sea—12 nautical miles from the baseline marking Indonesia's territorial waters—the crescent's altitude reaches 3 degrees, and the elongation exceeds 6.4 degrees.

Therefore, based on my analysis, during Zulkaida 1448 H, *istikmāl* should not be performed if there is testimony of crescent sighting in the western sea region of Indonesia. This is because, astronomically, the new MABIMS criteria have been met, and legally, based on the law, it is stated that the law in maritime areas is the same as on land. Thus, if the crescent is

visible at sea, the ruling is the same as on land, and the entire region of Indonesia will enter the new month according to the concept of Indonesia's geographical *maṭla'*. However, the final decision remains under the authority of the government, in this case, the Ministry of Religious Affairs of the Republic of Indonesia, and it is hoped that the government will consider this calculation analysis.

b) Indonesia's Geographical *Maṭla'* on Positive Law Perspective

A country's borders hold significant importance when viewed from geographical, legal, and political aspects. In an interview with Khafid, the Head of the Spatial Planning and Atlas Mapping Center (PPTRA) of the Geospatial Information Agency (BIG), he mentioned that MABIMS has not explicitly addressed the geographical boundaries of Indonesia's *maṭla'*. If consistency is sought in terms of the territorial boundaries of Indonesia, then these should align with the laws of the Republic of Indonesia. He also emphasized that Islamic astronomy (cannot stand alone but must be based on national references, as outlined in the law regarding Indonesia's geographical boundaries.

This was further clarified by Thomas Djamaluddin, who stated that Indonesia's geographical *maṭla'* is a law that applies to the community, whether located on land or on islands in the middle of the sea, with territorial boundaries that define the area as part of the Unitary State of the Republic of Indonesia. A similar statement was made by Ahmad Izzuddin, the Chairman of the Indonesian Astronomical Faculty Association, who mentioned that, until now, no clear boundaries have been established. This means that experts have only considered the land areas, without encompassing Indonesia's *maṭla's full extent*. The MUI fatwa 2004 clearly states that Indonesia follows the concept of a geographical *maṭla'* for the country. Based on Law No. 43 of 2008 on State Boundaries, Chapter III, Scope of State Territory, Section 1, Article 4 states: "The territory of the State includes land areas, water bodies, the seabed and subsoil, as well as the airspace above it, including all the resources contained within".

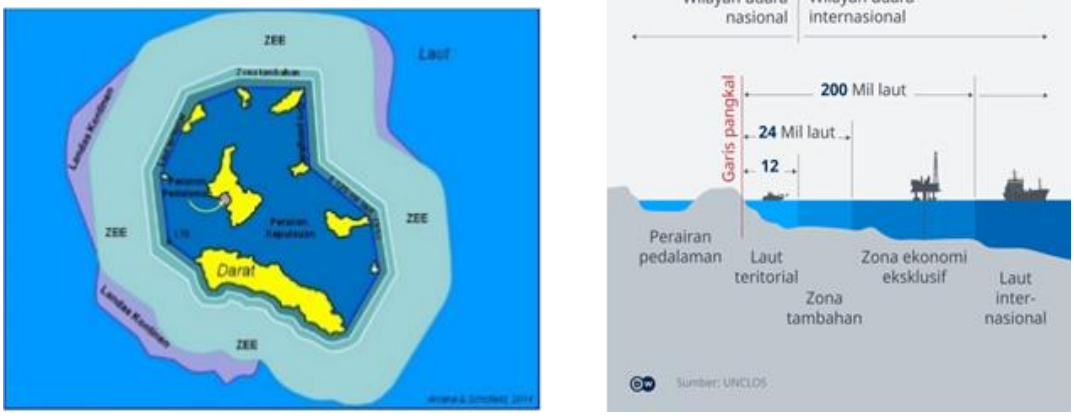

Figure 3. Indonesia's Territorial Sea Area

Therefore, the geographical territory of Indonesia, which holds full sovereignty according to positive law, is based on the Republic of Indonesia Law No. 32 of 2014 on Maritime Affairs, Chapter IV, Section 1, Article 5, Point 2, which states: "Indonesia's sovereignty as an archipelagic state includes land, internal waters, archipelagic waters, territorial seas, the airspace above it, and the seabed and subsoil, including the natural resources contained within."

Among those that apply under national law are:

1) Land Territory of the Republic of Indonesia (NKRI), covering all the land areas on the islands that are within the baseline of the Indonesian Archipelago, specifically in Kalimantan, Sebatik Island, Papua, and Timor Island.
2) Water Areas with full sovereignty and maritime zones within Indonesia's national jurisdiction. A coastal state can exercise complete sovereignty in the same way it exercises sovereignty over its land territory, including:
    a. Territorial Sea: According to Article 2 of UNCLOS 1982, the sovereignty of the coastal state extends to the airspace above the sea and the seabed and subsoil beneath it. Article 3 of UNCLOS 1982 states that each country has the right to set the breadth of its territorial sea up to a border not exceeding 12 nautical miles, measured from baselines determined by the 1982 UNCLOS.
    b. Archipelagic Waters: According to Article 49 of UNCLOS 1982, these are waters enclosed by the baselines of an archipelago, regardless of their depth or distance from the coastline. Archipelagic waters are a special maritime zone that not all coastal states possess and can only be claimed by archipelagic states, such as Indonesia.
    c. Internal Waters: According to Article 8 of UNCLOS 1982, these are waters located on the landward side of the baseline used to determine the territorial sea of a state (including all rivers, lakes, canals, and other bodies of water within a state's territory). Law No. 6 of 1996 on Indonesian Waters divides internal waters into two categories: inland seas and inland waters.

In my perspective, the reference for the geographical boundaries of Indonesia, which holds full legal sovereignty, requires formal legal or institutional clarity to ensure that the boundaries are explicitly defined. As expressed, Khafid and Ahmad Izzuddin, the determination of Indonesia's geographical boundaries in defining the start of the Islamic lunar month is closely related to aligning perceptions, as different individuals may have varying views on Indonesia's *maṭla'* (horizon) region. Ultimately, in the data collection for calculations, when mapped on the Indonesian National Map, only boxes passing through Indonesia are shown. Still, the exact boundaries generally only consider the land areas. Thus, the reference points have been observatory stations, such as those in Pelabuhan Ratu, Kupang, Lhoknga, and others.

c) Indonesia's Geographical *Maṭla'* from an Islamic Law Perspective

The issue of *maṭla'* in the past considered the disparity or time differences in the moonrise between the farthest regions of the Islamic world, with the maximum difference being around nine hours. This means that the entire Muslim world could experience part of the same night, making it possible for everyone to fast on the same day once the *hilāl* (crescent) was sighted. Based on this, it can be observed that the differences in *maṭla'* in the past were not

a central issue. The debates that occurred were generally only about the sighting of the *hilāl* in a specific region. However, unlike in the past, today, there has been a significant leap in scientific progress that should be addressed at the scientific, jurisprudential, and political levels.[25]

The issue of the difference in *maṭla'* between regions was first raised during the time of Muawiyah bin Abi Sufyan. At that time, Kuraib had returned from Syria and was asked by Abdullah bin Abbas, "When did you begin fasting?" Kuraib replied, "In Syria, the fast began on Friday." Abdullah bin Abbas then said, "But we saw the hilāl on Saturday".[26] The terms *ittiḥād* and *ikhtilāf* maṭla' are jurisprudential terms with an astronomical nuance that emerged after the time of the Prophet Muhammad. These terms arose as a result of the differing times and locations of the hilāl sightings and the numerous reports of *hilāl* sightings from various places, a time when there were no adequate means of communication for spreading information.[27]

The understanding of the hadith of Kuraib is that when the *hilāl* is sighted in a particular place, it is only that place or region where the success of the sighting can be considered as the determining factor for the beginning or end of the month of Ramadan. Astronomically, the city of Syria (Damascus), which is located at longitude 36° 18' and latitude 33° 30', is situated at an altitude of 730 meters above sea level. Meanwhile, the city of Madina is located at longitude 39° 43' and latitude 24° 33', with an altitude of 625 meters above sea level. The difference in longitude between the two cities is 03° 25', and the difference in latitude is 08° 57'.[28]

In the hadith of Kuraib mentioned above, several details are given about places and figures: Medina, Syria (Damascus), Ibn 'Abbas, Mu'awiyah, and the month of Ramadan. However, the hadith does not mention the weather conditions at that time nor the verification of the people who performed the sighting of the hilāl in either Syria or Madina. The hadith also does not specify the year of the incident or the season. Geographically, Madina is located east of Damascus (Syria), so the likelihood of seeing the *hilāl* in Syria is greater. The *hilāl* moves from west to east, so the further west, the higher the probability of the *hilāl* sighted. Therefore, the hilāl in Damascus is likely to be seen earlier than in Madina.[29]

The distance between Madinah in Saudi Arabia and Damascus in Syria is approximately 1,053 kilometers. If the Kuraib Hadith is used as a reference to determine the beginning of the Islamic lunar month, with its implications being different between Madina and Damascus, which are only about a thousand kilometers apart, it would become problematic if applied in Indonesia. Indonesia, consisting of a vast archipelago from Sabang to Merauke, spans 5,248 km. Therefore, such measurements could lead to various issues. If the applicability of the moon sighting result is based on the *maṭla'* concept, as discussed by scholars and supported by the Kuraib Hadith, a country with an area as extensive as Indonesia would have multiple maṭla's.

The legal basis for local *rukyat* in Indonesia, within its national geographical territory, is the hadith of the Prophet, who instructed to fast when the *hilāl* is seen and to break the fast or celebrate Eid upon sighting the *hilāl*. However, the *hilāl* appears local in nature and cannot be

[25] Salamah Muhammad Al-Harafi Al-Ballawi, *Buku Pintar Sejarah Dan Peradaban Islam* (Jakarta: Pustaka Al-Kautsar, 2016), 620–21.

[26] Al-Ballawi, *Buku Pintar Sejarah Dan Peradaban Islam*.

[27] Butar-Butar, *Problematika Penentuan Awal Bulan: Diskursus Antara Hisab Dan Rukyat*.

[28] Butar-Butar.

[29] Butar-Butar.

simultaneously observed worldwide. For the benefit and uniformity of the law within a region, the community leader may declare that the sighting of the *hilāl* in any region applies to the entire area. There is no necessity to follow the *hilāl* sighting from other regions, as no evidence requires doing so if the *hilāl* is not visible. Furthermore, the hadith of Kuraib regarding Ibn 'Abbas' *ijtihād* on the difference in the start of Ramadan between Syria and Madinah, which applied to each region, supports this view.

According to Islamic law, no one owns the sea, meaning there is no prohibition on bordering the sea (such as the 3-mile border in Canada and Australia) or expanding it, as is the case now with a 12 nautical mile territorial sea, to establish national boundaries. This is permissible as long as it is done based on international agreements. Regarding the airspace above the land, it also becomes part of the country's territory, without borders. Article 1 of the Convention on Air Navigation (1919) reflects Islamic and international law alignment.[30] As stated by Slamet Hambali, from Islamic law perspective, the sea remains part of Indonesia's territory with certain borders based on the applicable laws in Indonesia. If the government declares the start of fasting or Eid, the people at sea must follow it. Slamet Hambali also shared that he once conducted a *rukyat al-hilāl* (moon sighting) in the middle of the sea in 1994 at Ujung Pangkah, Gresik, East Java. On that occasion, someone claimed to have sighted the crescent moon, but the government rejected their testimony, as it did not meet the criteria of *imkān al-rukyah* (visibility feasibility).[31]

2. Analysis of the Neo-Visibility Criteria of MABIMS with Indonesia's Geographical *Maṭla'* Based on Sovereign Territory

Astronomically, the ideal location for observing the crescent (*hilāl*) significantly impacts its visibility. Regions without obstructions along the horizon where the Sun sets are more suitable for observation. Therefore, observation sites should ideally be located near coastlines or on elevated terrains, such as mountains, free from obstructions. In addition to land-based sites, maritime areas in open seas, which lack any obstructions and are far from light pollution, could serve as alternative locations for observing the crescent moon. Since maritime zones are part of Indonesia's geographical (sovereign) territory, any sighting of the crescent moon from these areas that meets the established criteria should be acknowledged and accepted.

From Islamic law perspective, *rukyat al-hilāl* at sea is analogized with *rukyat al-hilāl* conducted on land, as emphasized in the Law of the Republic of Indonesia No. 32 of 2014 on Maritime Affairs, Chapter VI, Section 1, Article 5, Clause 2, which states: "(2) The sovereignty of Indonesia as an archipelagic state includes land, internal waters, archipelagic waters, and territorial seas, including the airspace above it, as well as the seabed and subsoil, including the natural resources contained within them."

According to positive law perspective, the sea also involves the land beneath it (the surface of the earth), meaning that the *hilāl* sighted over the sea is treated the same as the *hilāl*

[30] A. Djazuli, *Fiqih Siyasah: Implementasi Kemashlahatan Umat Dalam Rambu-Rambu Syariah* (Jakarta: Kencana, 2009).

[31] Slamet Hambali, "Interview" (Semarang, 2023).

sighted on land. Therefore, the law that applies at sea is the same as that on land, as long as it remains within the boundaries of the nation's geographical sovereignty. The sea covers a larger area (79%), while land occupies a smaller area (21%).[32] The ocean is essentially land submerged by water, with water covering more of the earth's surface. According to Boer Mauna, the sea is an extension of the land, so a country's airspace follows the borders of the land and the sea.[33] Therefore, the laws that apply on land are also applicable at sea because, essentially, the sea is also land. This is explained in Allah's words in Surah Al-Jasiyah: 13

وَسَخَّرَ لَكُمْ مَّا فِى السَّمٰوٰتِ وَمَا فِى الْاَرْضِ جَمِيْعًا مِّنْهُ ۗاِنَّ فِيْ ذٰلِكَ لَاٰيٰتٍ لِّقَوْمٍ يَّتَفَكَّرُوْنَ

> "And He has subjected to you whatever is in the heavens and whatever is on the earth—all from Him. Indeed, in that are signs for a people who reflect." (Q.S. Al-Jasiyah/45:13).

This verse explicitly states that the universe, encompassing the airspace, land, and seas, was created by God for humankind. This potential is actualized through the natural laws established by God and the abilities granted to humans.[34] On one hand, the certainty of natural laws is evident, while on the other, God bestows humans with the capacity to advance science and technology. However, upon analyzing the outcomes of the Istanbul Congress in Turkey in 2016 regarding the criteria for the global Hijri calendar, point 3b states that "the *imkān al-rukyah* (as mentioned in point a) occurs in the mainland of the American continent".[35] The *imkān al-rukyah* accepted under the Istanbul 2016 criteria is bordered to the observation of the crescent moon on land alone. According to Thomas Djamaluddin, land is the primary habitat for human life, which is why only land-based observations are emphasized. From an astronomical perspective, there is no scientific basis for rejecting the observation of the crescent moon at sea or over water. This limitation appears to be a condition established by the relevant parties, especially those utilizing the criteria.[36]

In realizing the well-being of the Muslim community in determining the beginning of the Hijri month, the law stipulates that matters related to the welfare of the *ummah* require the intervention of *ūlī al-amr* (government), represented by the Ministry of Religious Affairs.[37] All governmental decisions ultimately fall under the authority of the government. If, in determining the beginning of the Kamariah month, the crescent altitude line on the crescent altitude map is in an extreme condition, it means that the Islamic date line only touches the western sea of Indonesia, which is still within Indonesia's territorial zone but in an uninhabited maritime area. The decision-making authority remains with the Indonesian government. This matter will be decided by the Minister of Religious Affairs of Indonesia, considering the well-

[32] Maulidi Ardiyantama, "Ayat-Ayat Kauniyyah Dalam Tafsir Imam Tantowi Dan Ar-Razi," *Al-Dzikra: Jurnal Studi Ilmu Al-Qur'an Dan Al-Hadits* 11, no. 2 (July 31, 2019): 187–208, https://doi.org/10.24042/al-dzikra.v11i2.4411.

[33] Won Comic, *Aku Ingin Tahu Sains 20: Air Dan Hidrosfer* (Jakarta: Elex Media Komputindo, 2011), 3.

[34] M. Quraish Shihab, *Wawasan Al-Qur'an* (Bandung: Mizan, 1997).

[35] Anwar and Saksono, *Makalah Narasumber: Halaqoh Nasional Ahli Hisab Dan Fikih Muhammadiyah Tindak Lanjut Kalender Islam Global*.

[36] Thomas Djamaluddin, "Interview," 2023.

[37] Fajri Assiddiq, "Autoritatif Hukum Penentuan Awal Bulan Di Indonesia," *Al-Marshad: Jurnal Astronomi Islam Dan Ilmu-Ilmu Berkaitan* 6, no. 1 (June 1, 2020): 34–44, https://doi.org/10.30596/jam.v6i1.4366.

being of the *ummah*. However, if this issue leads to controversy, the final decision will still be referred back to the government.[38]

Nahdlatul Ulama, in determining the beginning of the Hijri month, does not apply differences in *maṭla'*. This decision was based on the Munas Alim Ulama (National NU's Scholar conference) held on November 15-16, 1987 at Ihya Ulumuddin Islamic Boarding School, Kesugihan, Cilacap, Central Java. This conference decided to use the *maṭla'of* the Indonesian territory.[39] At the 25th Munas Tarjih (National Muhammadiyah's Scholar conference) held in Jakarta, 2000, Muhammadiyah affirmed that the determination of the beginning of the Hijri month follows the maṭla' of the Indonesian territory. At the upcoming conference in Padang,2003, two important points regarding *maṭla'* were stated. *First,* Indonesia uses the maṭla' of the Indonesian territory in determining the beginning of the Hijri month. *Second*, the decision on the beginning of the month is returned to the government if the *wujūd al-hilāl* boundary line divides Indonesia, in which case the policy is entrusted to the Central Leadership of Muhammadiyah.[40] Therefore, the outermost geographical boundary of Indonesia must be explicitly defined, as the use of the *maṭla' wilāyat al-ḥukm* is adopted by the Indonesian government and Islamic organizations in Indonesia as a reference when the Islamic date line passes through Indonesian territory.

D. Conclusion

The determination of the beginning of the Hijri month in Indonesia, based on MUI Fatwa No. 2/2004, uses both *rukyat* and *ḥisāb* methods under the Ministry of Religious Affairs. According to Law No. 43/2008, Indonesia's territory includes land, sea, and airspace. Supporting laws and UNCLOS 1982 affirm territorial sovereignty also applies to archipelagic and territorial waters. Thus, Indonesia's *maṭla'* covers both land and maritime zones. *Hilāl* sightings at sea are legally valid and analogized with land-based sightings, as sea areas are part of national territory. This view is supported by Islamic legal reasoning and the Qur'anic basis. While Indonesia informally coordinates with MABIMS countries, sovereign decision-making remains national. Therefore, a formal legal or fatwa-based framework is needed to affirm whether Indonesia's *maṭla'* includes maritime areas or follows models like Turkey's 2016 criteria, which exclude sea-based sightings.

[38] Fahmi, "Interview."

[39] Rizalludin, "Penolakan Pengurus Besar Nahdlatul Ulama (Pbnu) Terhadap Kesaksian Hasil Rukyat Di Bawah Kriteria Imkan Al-Rukyah Dari Tahun 1998 – 2017," *Jurnal Alwatzikhoebillah : Kajian Islam, Pendidikan, Ekonomi, Humaniora* 6, no. 2 (December 3, 2020): 35–53, https://doi.org/10.37567/alwatzikhoebillah.v6i2.274.

[40] Hosen Hosen, "Kilas Balik Kalender Hijriyah Indonesia Perjalanan Menuju Penyatuan Kalender Nasional," *Islamuna: Jurnal Studi Islam* 4, no. 1 (July 1, 2017): 81–111, https://doi.org/10.19105/islamuna.v4i1.1352.

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