



## IMPLEMENTATION OF THE NEW MABIMS CRESCENT VISIBILITY CRITERIA: EFFORTS TO UNITE THE HIJRIYAH CALENDAR IN THE SOUTHEAST ASIAN REGION

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**Abstrak:** Makalah ini membahas penerapan kriteria baru visibilitas hilal MABIMS dalam penyatuan penanggalan Hijriyah di negara-negara anggota (Malaysia, Brunei, Indonesia dan Singapura). Penelitian ini menggunakan pendekatan penerapan kebijakan Astronomi dan teori Grindle. Sumber data berasal dari dokumen hasil Muzakarah MABIMS dan artikel terkait. Hasil penelitian menunjukkan bahwa kriteria baru visibilitas hilal MABIMS merupakan bagian dari kebijakan publik yang dalam pelaksanaannya membutuhkan dua variabel yang saling mendukung. Pertama, isi kebijakan berupa kriteria visibilitas bulan sabit ( $3^0$ ;  $6.4^0$ ) diterima oleh seluruh negara anggota melalui penandatanganan referendum pada 8 Desember 2021. Penerimaan ini akan mendapat dukungan publik jika bermanfaat hingga manajemen waktu. Kedua, konteks pelaksanaannya dilakukan secara bertahap dengan memperhatikan karakteristik lembaga yang terlibat dalam penyusunan penanggalan Hijriyah. Pada tataran praktis, kebijakan tersebut dapat diterima dengan baik oleh masyarakat, kecuali di Indonesia yang masih menghadapi kendala. Hal ini disebabkan kebijakan di ketiga negara dilakukan secara *top-down*, sedangkan di Indonesia dilakukan secara *bottom-up*. Selanjutnya, penentuan awal Ramadan, Syawal dan Zulhijah masih menunggu konfirmasi penampakan hilal (rukyyah). Ini terkait dengan dominasi ru'yah, dan perbedaan yang kuat antara fungsi penanggalan dalam administrasi sipil dan praktik ibadah.

**Kata kunci:** visibilitas hilal; *imkān al-ru'yah*; penyatuan kalender; kalender hijriyah; kebijakan publik

**Abstract:** This paper discussed the implementation of the new MABIMS hilāl visibility criteria in the unification of the Hijriyah calendar in member countries (Malaysia, Brunei, Indonesia and Singapore). This research uses the approach of Astronomy and Grindle's theory of policy implementation. The data source comes from the MABIMS Muzakarah results document and related articles. The research results indicate that the new MABIMS moon crescent visibility criteria are part of a public policy that, in its implementation, requires two mutually supportive variables. First, the content of the policy in the form of the moon crescent visibility criteria ( $3^{\circ}$ ;  $6.4^{\circ}$ ) was accepted by all member countries through the signing of an ad referendum on 8 December 2021. This acceptance will receive public support if it is beneficial to time management. Second, the context of implementation is carried out in stages by taking into the characteristics of the institutions involved in preparing the Hijriyah calendar. At the practical level, the policy can be well received by the public, except in Indonesia, which still faces obstacles. This is due to the policy in the three countries being carried out on a top-down basis, while in Indonesia, it is carried out on a bottom-up basis. Furthermore, determining of Ramadan, Shawwal, and Zulhijjah are still waiting for confirmation of the sighting of the moon (*ru'yah*). It related to the domination of *ru'yah*, and a strong distinction between the function of the calendar in civil administration and worship practice.

**Keywords:** visibility of moon crescent, *imkān al-ru'yah*, calendar unification, hijriyah calendar, public policy

## Introduction

The Hijriyah calendar is based on the lunar system, a year of 12 months whose calculations are based on the moon's phases. This is in accordance with the word of Allah in QS al-Taubah, 9:36, "Indeed the number of months with Allah is twelve months". The moon rotation as the starting point in the Hijri calendar is based on the Quran Surah Yunus, 10:5, "It is He who made the sun a shining light and the moon a derived light and determined for its phases - that you may know the number of years and account [of time]. Allāh has not created this except in truth. He details the signs for a people who know." The beginning of the month in the calculation of the Hijriyah calendar, as emphasized by Muhammad Ilyas is based on the possibility of the moon crescent being first seen somewhere in one country. The Prophet Muhammad stated in a hadith; "Fast when you see the *hilāl* and break your fast when you see the moon. If clouds cover the *hilāl*, then complete the number of the month of *Shakban* to thirty days." In another hadith "If clouds cover the *hilāl*, estimate it" (Ilyas, 1997).

It can be interpreted that the calculation of the beginning of the lunar month is carried out in the preparation of the Hijriyah calendar, both local and global (Imron, et.all, 2015). There are two *ḥisāb* criteria used in the preparation of the Hijriyah calendar. First, the requirements for the form of the moon crescent as used in preparing the Muhammadiyah and Ummul Qura calendars in Saudi Arabia. Second, the criteria for *imkān al-ru'yah* (Kriteria Imkanur Rukyah/KIR) as used in the preparation of the Hijriyah Takwim calendar by the Minister of Religion of Brunei, Indonesia, Malaysia and Singapore/MABIMS member countries.

The MABIMS *imkān al-ru'yah* (moon crescent visibility) criteria in 2016 changed from the old measures, namely the height of the moon crescent  $2^{\circ}$ , the elongation  $3^{\circ}$  or the age of the moon 8 hours, to the new criteria, namely the height of the moon crescent  $3^{\circ}$  and elongation of  $6.4^{\circ}$  (Djamaluddin, 2016). It refers to this new criterion as "Neo Visibility of the Hilal MABIMS" (Azhari, 2016). These new criteria, with a relatively high number of opportunities for the sight of the moon crescent, provide an opportunity to realize a unified Hijriyah calendar starting in Southeast Asia. Especially with the signing of a joint commitment from the Ministers of Religion of MABIMS member countries at the

Informal Annual Meeting, which will be held online on 8 December 2021. All ministers have agreed and ratified the implementation of the new KIR (height of the moon crescent  $3^0$  and elongation  $6.4^0$ ) in 2022. This agreement is stated in a stamped text through an Ad-Referendum, which all Ministers of Religion sign. Implementing the new MABIMS moon crescent visibility criteria in preparing the *hijriyah* calendar can be the first step toward realizing calendar unification in the Southeast Asia region.

There have been several types of research conducted on the unified *hijriyah* calendar. The study indicated the opportunities for the realization of a unified hijrah calendar using the "expected visibility" criteria, namely the visibility of the young moon crescent, while still referring to the International Date Line with the principle of one single calendar for the whole world (Aziz & Ahmed, 2014; Halim, 2005). A study produced findings on the importance of standardizing the basis for calculating each country's beginning of the Hijriyah month or the unification of the world Islamic calendar (Ilyas, 2016). Another study puts more emphasis on the aspect of fiqh, namely astronomical fiqh, especially relating to the time of worship, which is based on the movement of the moon and sun (Angkat, 2017; Maskufa, 2018).

Fadholi (2018) research indicated that Islamic organizations in Indonesia emphasize the criteria for the visibility of the hilāl of MABIMS as a guide in preparing the Hijri calendar in Indonesia. Then, Khanafi (2018) added that in 2017 Jakarta recommended the Institute for the Study and Development of the Rukyatul Hilal Falak (LP2IF RHI) as the Single Global Hijri Calendar. Lastly, Nursodik tries to conduct a comparative study of the use of the Jean Meeus Algorithm on the Turkish Hisab Criteria and the MABIMS New Criteria (Nursodik, 2018).

This research focuses on the visibility of the new MABIMS *hilāl* for the unification of the Hijriyah calendar in its member countries, namely Brunei, Indonesia, Malaysia, and Singapore. The reason is that without effective implementation, the decision of policymakers will not be implemented. Policy implementation is needed to see the suitability and relevance of the description model that has been made (Akib, 2012).

## **Research Method**

This research includes empirical legal research (law in action). Empirical legal research will be conducted on the process of changing the criteria for the visibility of the moon crescent visibility of MABIMS, its implementation in the preparation of a unified Hijriyah calendar in Southeast Asia and mapping the views of its member countries on the unification of the Hijriyah calendar after the MABIMS decision.

This research uses two approaches. First is the approach of Astronomy to describe and analyze aspects of science in the method of determining the beginning of the lunar month and the preparation of the Hijriyah calendar. Second, Grindle's theoretical approach to policy implementation analyzes the implementation of policies using the new moon crescent visibility criteria in determining the beginning of the lunar month for preparing the Hijriyah calendar in each member country. The data sources come from the MABIMS Muzakarah results in documents, the Hijriyah calendar published by member countries, and related articles. The data collection technique is done by documentation study. Data analysis was carried out by reviewing and comparing the conformity between the texts of the results of the Alignment of Rukyat Muzakarah and MABIMS Takwim. Then the adjustment of the Hijri calendar of member countries and the determination of fasting for Ramadan and Eid.

## **The Urgency of MABIMS Muzakarah**

MABIMS is a forum for the informal annual meeting of the Ministers of Religion of Brunei Darussalam, Indonesia, Malaysia and Singapore. This forum for overseas meetings is engaged in the religious field to safeguard the benefit and interests of Muslims without interfering in the political affairs of its member countries.

MABIMS was established on Monday 5 Muharram 1410 to coincide with 7 August 1989, at the same time as the first meeting in Bandar Seri Begawan Brunei Darussalam. This forum for meeting allied countries was formed because it was motivated by the need for close cooperation between member countries in the religious field. The Ministers of Religion who initiated this informal annual meeting are Awang Mohd. Zain bin Haji Serudin (Minister of Religious, Brunei Darussalam),

Munawir Sadzali (Minister of Religion of the Republic of Indonesia) and Mohammad Yusof bin Haji Mohamed Noor (Minister in the Position of Prime Minister of Malaysia). Furthermore, the informal meeting is held once a year, but in recent developments, the ministerial-level meeting is held every two years (Departemen Agama, 1993; Mabims.gov, 2019).

There are several areas of cooperation between MABIMS, including the unification of the Hiriyah calendar in the Southeast Asia Region by the Jawatankuasa for the Harmonization of Rukyat and Islamic Takwim. Since 1991, sixteen meetings have been held. An important decision related to the criteria for determining the beginning of the lunar month was the result of the 3<sup>rd</sup> Jawatankuasa Conference held on June 1-2, 1992, in Labuan, Malaysia. Determining the beginning of the lunar month other than the months of Ramadan, Shawwal, and Zulhijjah using the *ijtimā'* method before sunset and the moon crescent has existed even if it is only for 1 minute. Indonesia, Malaysia and Singapore agree that the *ru'yah* or *hilāl shar'ī* is the height of the moon crescent 2 degrees, the elongation 3 degrees, or the age of the moon 8 hours when the sun sets. So, the three months are determined based on the *ru'yah* or *hisāb*, while Brunei determines it by *rukayah* or *istikmāl* (Departemen Agama, 1993: 21-22).

In the 4<sup>th</sup> deliberations of Jawatankuasa on 1-5 July 1992, it came up with several essential things, such as a decision to implement the criteria for the visibility of the new moon as a result of the decisions of the 3<sup>rd</sup> deliberations. First, the Takwim Hijriyah equation 1993-2020 M/1414 -1442 H is arranged based on the height of the moon, at least 2 degrees for all member regions, the elongation of at least three degrees or the age of the moon at least 8 hours after the time of *ijtimā'* (Jakim, 2022). Second, the three criteria (2,3,8) are agreed to be a guide for *hisāb-ru'yah* for member countries. Three countries, namely Indonesia, Malaysia, and Singapore, agreed that if the three conditions were fulfilled and the moon was not visible, the beginning of the month was determined based on *hisāb*. At the same time, Brunei Darussalam still used *istikmāl* because it still adhered to *ru'yah* (Departemen Agama, 2001, 2002). Thus, the decision of the 4<sup>th</sup> deliberation has not yet been agreed upon on the criteria.

Although the Hijriyah Takwim is agreed upon as the basis for preparing the Hijriyah calendar, the implementations are different. Only

Malaysia and Singapore consistently use these criteria in preparing their Hijriyah calendar. In contrast, Indonesia uses the criteria for the visibility of the moon crescent. However, in determining the start of the month of Ramadan and Shawwal they still use *ru'yah* because they have to wait for the results of the *isbāt*. Meanwhile, Brunei Darussalam uses the criteria for the visibility of the moon crescent commulatively only as a guide for the *rukyat al-hilāl* process. Thus, if the moon crescent is not visible, then the beginning of the lunar month is *istikmāl* as at the beginning of the month of Shawwal in 1432 H / 2011 M.

The beginning of Shawwal 1432 H in member countries are set simultaneously. Malaysia and Singapore set the 1 of Shawwal 1432H on Tuesday, 30 August 2011, as well as several other Islamic countries such as Saudi Arabia and some European countries. Meanwhile, Indonesia and Brunei Darussalam set it on Wednesday, 31 August 2011 (Wahyudi, 2011). The difference in the determination of 1 Shawwal is crucial because of the impact of breaking the fast for Ramadan, the time for paying zakat fitrah and Eid prayers, and the economy in logistical preparation for homecoming transportation, security, and health. As a result of these differences, an evaluation is needed to review the MABIMS moon crescent visibility criteria. To that end, the Jawatankuasa for the Harmonization of Rukyat and Takwim Islam organized the 16<sup>th</sup> Muzakarah Rukyat and Takwim at the MABIMS level, attended by all member countries.

This Muzakarah activity was held at Klana Beach Resort, Teluk Kemang Port Dickson, Negeri Sembilan Malaysia from August 2-4, 2016. The Indonesian delegation was represented by Mohammad Thambrin, Ahmad Gunaryo, Nurkhazin, and Ismail Fahmi (Thobib Bimas Islam, 2016). Also present at the muzakarah were several mufti of the Federal Territory, Negeri Sembilan, Pahang, Kedah, Sabah, Sarawak and astronomy experts from Malaysia, Brunei, and Singapore. This Muzakarah aims to discuss and analyze the *imkān al-ru'yah* criteria member countries have used in determining Hijriyah Takwim, implementing *ru'yat al-hilāl* together, and evaluating the MABIMS Standard Takwim (JAKIM, 2016).

At the 16<sup>th</sup> Muzakarah, member countries presented their respective working papers. In the preparation of its Islamic takwim, Brunei used the book "Garis Panduan Hisab Rukyat Negara Brunei Darussalam,

Indonesia, Malaysia, and Singapura", as a result of the agreement of the 4th MABIMS meeting in Bandar Seri Begawan Brunei Darussalam on August 6-7, 1993. The results showed that the MABIMS 2:3:8 criteria needed to be corrected at a crescent height  $>6^{\circ}$  and a crescent age of 19 hours (Tim Brunei Darussalam, 2019). Indonesia also proposed criteria for the crescent height of  $4^{\circ}$  and elongation of  $7^{\circ}$  (Tim Indonesia, 2016). Malaysia proposed criteria for the crescent height of  $3^{\circ}$  and elongation of  $5^{\circ}$  ((JAKIM), 2016). Singapore proposes an elongation criterion of 6.4 when the best time is 5 minutes after sunset (Yahya, 2016: 1-4). The following is a table of new criteria for the visibility of the moon crescent visibility proposed by MABIMS member countries.

Tabel 1. New Criteria Proposed by MABIMS Member Countries

No	Country	Moon Altitude	Elongation	Moon Age
1.	Malaysia	3	5	>10 hours
2.	Brunai	6		19 hours
3.	Indonesia	4	7	
4.	Singapore		6,4	>13 hours

The results of the discussion determine the diversity of criteria of *imkān al-ru'yah* in the representative of its member countries. Muzakarah Rukyah and the 16th Islamic Takwim Member State in the MABIMS deliberation on 2-4 August 2016 provided the following recommendations:

First, The criteria for *imkān al-ru'yah* for MABIMS member countries in determining the Hijriyah Takwim and the beginning of the Hijriyah month are: "when the sun sets, the height of the moon crescent is not less than  $3^{\circ}$  from the horizon and the angle of elongation is not less than  $6.4^{\circ}$ ". Second, the elongation angle parameters are from the center of the moon to the center of the sun.

Third, Implementing these criteria in the preparation of the Hijri takwim will begin in 2018/1439H. Fourth, the imaging technique may be used in *ru'yat al-bilāl* following the conditions: a). takes effect after sunset; b). *astronomer* is a Muslim and just; and c). the equipment used maintains the *ru'yah* principle. The global Hijriyah Takwim reserves decided at the 2016 Istanbul Global Hijriyah Takwim congress were



refined by member countries. Last, The study of the moon crescent will be continued (Baiquni, n.d.; Djamaluddin, 2016).

The results of this Muzakarah were agreed to be implemented in each member country in 2018. Still, the results of the agreement will be discussed again by the Minister of Religion in their respective countries in order to reach a joint decision. If looked closely, the new MABIMS moon crescent visibility criteria result from a study based on fiqh arguments and astronomical science.

### **The Process of Accepting a New KIR in the Preparation of Hijriyah Takwim**

*Hisāb*, a method that was used in efforts to unify the Hijriyah calendar, has also experienced significant development. The *hisāb* method with the latest *imkān al-ru'yah* criteria was discussed at the "International Hijri Calendar Unity Congress" Conference in Istanbul, Turkey, on May 28-30, 2016, resulted in the decision of the moon crescent height of 5° and elongation of 8°. These criteria only confirmed the results of the decision of the Turkish Conference in 1978. The 2016 Istanbul recommendation has also become a concern for MABIMS member countries, so one of the results of the 2016 MABIMS Muzakaah is the global Hijriyah Takwim reserve decided in the 2016 Istanbul global Islamic *taqwim* congress by member countries.

The 2016 MABIMS Muzakarah, which resulted in new criteria of 3:6,4, was continued with the 2017 International Seminar on Falak Fiqh, which resulted in the 2017 Jakarta recommendation by confirming the 2016 MABIMS Muzakarah recommendation. Furthermore, in 2019 the MABIMS Falak Expert Meeting was held with the theme "Perkembangan Visibilitas Hilal dalam Perspektif Sains dan Fiqih" in Yogyakarta from 8 to 10 October 2019 (Ansori, 2017). The result of this meeting was to strengthen the 2016 MABIMS Muzakarah results regarding the criteria for the visibility of the moon crescent 3:6,4. Furthermore, from 11 to 14 November 2019, the 44th MABIMS Senior Officials Meeting (*Mesyuarat Pegawai – Pegawai Kanan*) (SOM) was held in Singapore and has approved the implementation of this new KIR in 2021 (Portal Rasmi Jabatan Kemajuan Islam Malaysia, 2020). The results of this Singapore meeting were later confirmed by the informal online meeting of the Ministers of Religion of MABIMS countries on 8 December

2021. All ministers have agreed to and validated the implementation of the new KIR. This agreement is then stated in a stamped text through an Ad-Referendum, which all Ministers of Religion sign.

MABIMS member countries signed several meeting recommendations on the new KIR and made different policies. The following is the process of preparing Hijriyah Takwim and accepting a new KIR in member countries.

## Malaysia

The determination of the Hijriyah calendar must be based on the criteria for the *imkān al-ru'yah*, which is built based on Astronomy (Falak) theoretically and empirically. Efforts to use a single Hijriyah Takwim is a very good tool to minimize differences at the beginning of Ramadan, Eid Fitr, and Eid Adha worldwide. However, the new criteria need to be refined to suit the conditions of the *imkān al-ru'yah* in Malaysia. Implementing these new criteria should be agreed upon by all MABIMS members (M.Z. Zainuddin & Mohd Nawawi, 2019: 1-2 & 11).

The Malaysian Hijriyah Calendar was prepared by Research Division Team of the Department of Islamic Development Malaysia (*Tim Bahagian Penyelidikan Jabatan Kemajuan Islam Malaysia*/JAKIM) after deliberation by the JAKIM Falak Expert Panel (JAKIM, 2016; Salleh, n.d.). The preparation of this Takwim Hijriyah since 1992 has been based on the *imkān al-ru'yah* MABIMS criteria, namely, at sunset, the altitude of the new moon is  $2^{\circ}$ , and the elongation angle is  $3^{\circ}$ , or another alternative, namely the age of the moon is 8 hours calculated from the time of *ijtimā'*. The Hijriyah calendar is an essential reference for Malaysian Muslims in determining the dates of the sun at fasting, obligatory fasting (Ramadan), Eid Fitr, Eid Adha and several other important dates. Changes in the criteria for *imkān al-ru'yah* as a result of the 2016 MABIMS agreement cannot be implemented because it still needs further discussion and needs to be refined to suit the conditions of *imkān al-ru'yah* in Malaysia (Zainuddin & Nawawi, 2019: 1-2 & 11). Thus, Malaysia's acceptance of the new MABIMS criteria is not final because it is still waiting for further studies and the findings of the Imkanurukyat.

The preparation of the 2020-2021 calendar was carried out by the

*Bahagian Perancangan and Penyelidikan Jabatan Kemajuan Islam Malaysia* still using the old imkanur rukyat criteria (2:3:8) (Jakim Takwim, 2020). On 9 August 2021, the Chief Steering Officer of Jakim Datuk Abdul Aziz Jusoh made the month of Muharram 1443 H the Malaysian Falak Month using the new KIR. This decision is a follow-up to the approval by MABIMS countries in Singapore last year (Jakim Takwim, 2020). Malaysia has started implementing the new KIR in preparing Takwim 1443H, beginning on 9 August 2021.

Previously, the deliberations of the Selangor State Fatwa Jawatankuasa, which convened on 9 March 2021, decided that the change in KIR would only start in 2021 (Muharram 1443H). This change in criteria can be seen in the display of Takwim 1443H/2021-2022 released by the JAKIM Bahagian Penyelidikan that the beginning of the Hijriyah month determines to follow the criteria for the visibility of the moon crescent, *imkān al-ru'yah*, 3 degrees of moon crescent high and 6.4 degrees of elongation (Jakim, 2021). The acceptance of the new KIR in Malaysia supports all state muftis. However, the results of *ru'yah* are still used as guidelines in determining the beginning months of Ramadan, Shawwal, and Zulhijjah.

### **Brunei Darussalam**

The Brunei Darussalam Hijriyah Calendar is published by the Islamic Da'wah Center, Ministry of Hal Ehwal Ugama, State of Brunei Darussalam. Estimation and stipulations in *taqwīm Hijriyah* are determined based on the agreement of the Jawatankuasa for the Alignment of *Ru'yah* and *Takwim Serantau* (MABIMS). Regarding the certainty of the beginning of Ramadan month, Nuzulul Qur'an, Eid Fitr and Eid Adha are subject to the results of the *ru'yat al-hilāl* of Ramadan (Rajid, 2020). *Ru'yat al-hilāl* is the state of Brunei Darussalam's main method in determining the month's beginning related to worship times. If the month's position has met the requirements for *imkān al-ru'yah* MABIMS and the month is not successful in *ru'yah* then the following month must be normalized.

Indonesia, Malaysia, and Singapore agreed to accept the results of *ru'yah* reciprocally. At the same time, the State of Brunei Darussalam only received *ru'yah* results from an area with one mathla', an area with

a maximum distance of 8 degrees arc or 32 minutes to the west. The number of people who saw the hilāl of Shawwal was at least two people, and the hilāl of Ramadan 1 person. *Ru'yah* testimony can be accepted if it meets the requirements of Islamic Hisab and Astronomy. Based on the data on the perception of the moon crescent in Brunei using the 2:3:8 criteria, in practice, it is challenging to see the moon crescent in that position. The difficulty is because the 2° hilāl height at 8 hours is still shallow, and the sun's light is still too bright, making it difficult to see the moonlight. The hilāl can be seen when its age has reached 14h 57m above, and the height of the hilāl is more than 5 degrees after sunset.

In addition, from the study of experts, the moon crescent can be verified if the elongation and age of the moon are greater than the MABIMS criteria, as stated by Danjon at 7°, Muhammad Odeh at 6.4°, and Mohd. Ilyas >7°. Also, the results of an internal Brunei study show that the moon crescent can be seen when it is 19 hours old with a hilāl height of more than 6°. Based on these data, the criteria for *imkān al-ru'yah* that have been used so far need to be changed to 6° moon height and 19-hour moon age (Tim Brunei Darussalam, 2016).

The approval for implementing the new KIR is a follow-up to the results of the 44th MABIMS Pegawai – Pegawai Kanan (SOM) meeting in Singapore. There is also an informal annual meeting of the MABIMS State Ministers of Religion on 8 December 2021, which has agreed and validated the implementation of the new KIR. The agreement was stated in an Ad-Referendum, which all Ministers of Religion signed. With this agreement, Brunei Darussalam, through the Ministry of Hal Ehwal Ugama, announced to the parties to implement a new KIR in Takwim Hijriyah 1443H. This new KIR was then implemented in Takwim 2022 AD / 1443-1444H with a note that the determination of the beginning of Ramadan month, Shawwal, and Zulhijjah still uses rukyat ("tertakluk kepada penglihatan anak bulan"). For example, the beginning of Ramadan (fasting) on Sunday, along with 3 April 2022 subject to the sight of the crescent moon of Ramadan (*tertakluk kepada penglihatan anak bulan Ramadan*) (Jakim, 2020). Likewise, with Takwim Hijriyah 1443-1444 for the Year 2022 of the State of Brunei Darussalam provided by the Astronomy Unit of the *Jabatan Ukur* in a footnote, it is stated that the initial determination of Hijriyah for the three main months of worship (Ramadan, Shawwal, and Zulhijjah) is determined

through *ru'yah* (Sulaiman, 2017). Thus, even though Brunei Darussalam in its Takwim Hijriyah has used the new KIR, in its implementation, there are still differences for the months related to worship that are still waiting for *ru'yah*.

## Indonesia

For Indonesia, the unification of the Hijriyah calendar is collective *ijtihad* that must be well calculated and planned. Now is the right time for Indonesian Muslims not to commit and build a shared vision of realizing an Islamic calendar that is well-established and acceptable to all parties. Ideally, the new KIR concept is a criterion that bridges the two main streams of determination at the beginning of the lunar month: the *hisāb* part and the *ru'yah* part. Especially on modern *ru'yah*, also has a good recording of the position of the moon and sun at the *hilāl*. Then the visible *hilāl* parameter of image processing can be used as a proposal to improve the criteria for *imkān al-ru'yah* (Maskufa and Widiani, 2012; Saifuddin, 2019).

The Hijriyah calendar published by the Government of Indonesia is compiled by the Ministry of Religion which involves elements of Islamic organizations and related institutions such as National Institute Aeronautics and Space of Indonesia (Lembaga Penerbangan dan Antariksa Nasional/LAPAN), Geospatial Information Agency (Badan Informasi Geospasial/BIG, Indonesian Agency for Meteorological, Climatological and Geophysics (Badan Meteorologi Klimatologi, dan Geofisika/BMKG), Planetarium, Observatory, and Universities who are members of the Falakiyah Team of the Ministry of Religion. The arrangement of the Hijriyah calendar uses the *hisāb* method with the criteria of *imkān al-ru'yah* MABIMS. The Hijriyah calendar compiled by the Ministry of Religion was obtained after deliberation for the work of *hisāb* and *ru'yah* experts who are members of the Falakiyah Team of the Ministry of Religion. The working meeting is held annually to discuss the calendar arrangement for the next two years regarding *hisāb* data from various *hisāb* systems. Until now, the criteria used in the arrangement of the Hijriyah calendar are still based on the old KIR. The new KIR is still under discussion.

The new KIR in the form of a 3° moon crescent height and 6.4° elongation was produced by Muzakarah Rukyah and Takwim Islam

MABIMS in 2016 in Malaysia, which the 2017 Jakarta Recommendation confirmed. Therefore, it is time for Indonesia to adopt a new KIR in preparing the Indonesian Standard Takwim . Moreover, the religious ministers of member countries agreed on the new KIR in 2021, as stated by the Director-General of Bimas Islam Kamaruddin Amin when opening the 2022 Rukyat Hisab Expert Meeting in Tangerang on 22 February 2022 (Christiyaningsih, 2022). The call for change was contained in a letter from the Director-General of Islamic Community Guidance on 25 February 2022. It stated the need for a follow-up to the MABIMS annual meeting of the Minister of Religion in the form of implementing a new KIR in determining the beginning of the lunar month on the Hijriyah calendar in 2022.

## Singapore

Singapore is a country that does not have an open horizon to carry out the rukyatul hilāl in determining the beginning of the Islamic month using the *hisāb* method. Starting from 1973, Singapore used the method of hisab wujud al-hilāl, then in 1992 used the method of imkanur rukyat MABIMS 2:3:8. The existence of KIR MABIMS is beneficial for Singapore in determining the beginning of the month in its Islamic Takwim . The MABIMS KIR, which member countries have used for more than 20 years, does not rule out the opportunity for a re-examination by considering the success record of *ru'yah* in member countries as well as the latest scientific findings.

The unification of the MABIMS Hijriyah calendar can bring unity to the archipelago, and this is prioritized and can even be said to be at a required level. Differences in mathla' as narrated by the hadith of Kuraib, can also be understood in a unitary framework where ru'yah affairs also need to refer to the results of rukyat from other countries. It aims illat to achieve the good of all. Therefore, Singapore proposes that the unification of the Hijri calendar is based on two technical parameters as follows:

First, the reckoning of the *imkān al-ru'yah* for the archipelago is based on the criteria for the absorption of the hilal obtained from the most optimal optical instruments. Second, the requirements for the absorption of the crescent moon are based on criteria promoted by MABIMS member countries as proposed by Singapore, where the

elongation based on the Danjon limit is  $6.4^\circ$  (Yahya, 2022). In addition, because the criteria are related to sunset, even though it is not the best time to perceive the moon crescent, it needs to be changed to "at the best time" (best viewing time). On that basis, Singapore proposed changing the KIR MABIMS to an elongation of  $6.4^\circ$  when the best time is 5 minutes after sunset (Yahya, 2016: 1-4).

Singapore will start using the new MABIMS KIR in 2022, which is  $3^\circ$  hilāl height and  $6.4^\circ$  elongation (Yahya, 2019). The implementation of this criteria can be read from the announcement at the beginning of Ramadan 1443 H that based on the estimated *hisāb* of the new moon of Ramadan, it is impossible to see on the horizon of Singapore at sunset and does not meet the new KIR requirements. Therefore, the beginning of Ramadan in 1443 falls on Sunday, 3 April 2022 (MUIS, 2022).

### **Implementation of the Unification of the Hijriyah Calendar in Southeast Asia**

Opportunities to modernize Islamic law in worship are unlikely. This is because the material and *kayfiyāt* in worship must be oriented to the Qur'an and Hadith, so Muslims are prohibited from being creative. However, according to Djamil, it is still possible to rationalize religious facilities and infrastructure in order to provide convenience in their practice (Djamil, 1999). For example, the movement of the moon can be calculated continuously and is more valid at all times, so changing the means to find out the beginning of the month from the *ru'yah* method to the *hisāb* method is not prohibited. Moreover, in the preparation of a predictable Hijriyah calendar, it can only be done by *hisāb*, not by *ru'yah*. This is in accordance with the principle of "*taghayyur al-fatwā wa ikhtilāfuhā bihasbi taghayyur al-azminah wa al-amkinah wa al-ahwāl wa al-niyābah wa al-awā'id*" (al-Jauziyah, 2002: 41). The fatwa can change, including the determination of the method of determining the beginning of the lunar month, which initially uses the *ru'yah* method and changes to the *hisāb* method.

Currently, when the world has turned into a global village and humanity has metamorphosed into one entity, the certainty of organized time for Muslims is a must. The phenomenon of differences in fasting and *ieds*, according to Muhammad Rofik Muzakir (2015: 9-10) is a global problem for Muslims that requires a global solution so that efforts



to unify are no longer national but global. The unification of the Islamic calendar in the global Hijriyah calendar requires the use of science and technology. Islam also views that the relationship between religion and science is not a problem. According to Armahedi Mahzar (2004), there is no conflict between science and Islam. Thus, a scientific approach, the science of astronomy, can be used to determine a unified Hijriyah calendar at the regional and global levels.

The new KIR of MABIMS was approved to be implemented in 2022 based on an ad-referendum signed by all the Ministers of Religion member countries. Implementing a policy that member countries have decided is significant. Implementation is a decisive stage in the policy process because, without effective implementation, policymakers' decisions will not be implemented. Policy implementation is needed to see the suitability and relevance of the description model that has been made (Akib, 2012: 1&4).

The new KIR member countries have agreed upon is part of a public policy whose implementation is in the realm of praxis. According to Merilee S. Grindle, two mutually supportive variables are needed: variables related to content policy and environmental policy (implementation context) (Grindle, 1980: 11). The content generated from the Muzakarah Rukyah and Islamic Takwim of MABIMS Member States in 2016, which specifically relates to the determination of the Hijriyah Calendar are: (1) the criteria for *imkān al-ru'yah* for MABIMS member countries to determine the *hijriyah taqwīm* and the beginning of the *hijriyah* month are: "when the sun sets, the height of the moon crescent is not less than  $3^{\circ}$  from the horizon and the angle of elongation is not less than  $6.4^{\circ}$ ; (2) the elongation angles parameter is from the center of the moon to the center of the sun, and (3) implementing these criteria in preparing the Hijriyah Takwim will begin in 2018/1439 H (Djamaluddin, 2016).

The new KIR changes the old criteria that have been used for 30 years, namely the height of the moon crescent  $2^{\circ}$ , elongation  $3^{\circ}$ , or the age of the moon 8 hours. This change in criteria was based on scientific findings that doubted that the hilāl could be seen at a position less than  $3^{\circ}$ . It reinforced the absence of records of the success of *ru'yah* in member countries with a hilāl height of  $<3^{\circ}$ . There is also no elongation in the number  $3^{\circ}$ . Likewise, the moon's age, which is calculated from



the time of *ijtimā*, which causes the moon crescent to be observed, is when the month's period has exceeded 15 hours instead of 8 hours. Here are some of the moon crescent records that can be seen in MABIMS member countries:

Tabel 2. The Moon Crescent record of MABIMS member countries

No	Country	Naked Eye	With Telescope	CCD
1.	Brunei (Tim Brunei Darussalam, 2016))	Moon Altitude = 6° Moon Age = 19 hours		
2.	Indonesia (Tim Indonesia, 2016)	Minimum Moon-Sun Relative Altitude = 6,1° Elongation = 9,5° Moon Age = 15,9 hours The crescent is seen 10 minutes after sunset	Minimum Moon-Sun relative altitude = 5,8° Elongation = 7,2° Moon age =14,6 hours The crescent is seen 7 minutes after sunset	Moon-Sun relative altitude = 3,7° Elongation = 7,0° Moon age = 12,3 hours The crescent is seen 5 minutes after sunset
3.	Malaysia (JAKIM, 2016)	Minimum of Moon altitude = 3° Minimum elongation = 5°		
4.	Singapore (Yahya, 2016)	Moon altitude = 4°47' Elongation = 9°23' Moon age =15h 39m The crescent is seen 14 minutes after Sunset		

From table 2 above, it is clear that the old KIR is very difficult to achieve through factual hilāl observation, especially at sunset is not the best time to perceive the moon's crescent. This difficulty occurs because the height of the 2° moon crescent at 8 hours is still very low. The sun's light is still too bright, so it is difficult to see the moonlight. Therefore, a change in KIR that is more scientific and supported by recorded data on the perception of the moon crescent that astronomers have analyzed is necessary. This is also in accordance with the principle of "*taghayur al-fatwā*" (al-Jauziyah, 2002).

Thus, the decision of MABIMS's new KIR is in order to answer the anxiety because the existing data on the new hilāl record from several member countries that have gone through the expert analysis process exceeds the previously determined figure (2:3:8). Likewise, science in

digital optics also did not find the hilāl image referred to in the previous criteria because it was too low.

The content of the new MABIMS KIR policy as the basis for determining the beginning of the lunar month and the preparation of the Hijriyah calendar unification in the Southeast Asia region has several other indicators, namely (1) the interests of the target group; (2) the type of benefit received; (3) expected rate of change; (4) location of policy-making; (5) policy implementation and (6) resources involved. The following is a description of each of these indicators.

1. The target group's interests in preparing the unification of the Hijriyah calendar are Muslims residing in the four countries, namely Brunei, Indonesia, Malaysia, and Singapore, as well as other religious communities affected by the issuance of this unified Hijriyah calendar.
2. The type of benefit received is in the form of a function of the Hijriyah calendar, namely the function of *mu'āmalah* and the function of worship. The function of *mu'āmalah* includes determining the dates for the administration of social and state activities. Meanwhile, the worship functions include determining the time of fasting, Eid Fitr, the time to pay *zakāh fitrah*, the calculation of haul zakat, Eid Adha, the time of Arafah fasting, the pilgrimage, and the *qurbān*. The existence of a calendar certainty for Muslims, which is compiled based on specific criteria, will provide double benefits, namely the inevitability of time in *mu'āmalah* and certainty of time in worship.
3. Expected levels of change include; The creation of an agreement on the Hijri calendar in Southeast Asia will create the same timing, such as starting the fasting of Ramadan, Eid al-Fitr, fasting Arafah, Eid al-Adha, and slaughtering sacrificial animals. The creation of Hijri calendar integrated function between worship and *mu'āmalah* has been distinguished and separated. Make it easier for the government and the business world to plan to celebrate Islamic holidays, especially Eid al-Fitr and Eid al-Adha. Likewise, the preparation for fasting Ramadan for one month, in terms of logistical preparation, transportation, security, medical personnel and others.

4. The location of policy making lies with the governments of MABIMS member countries. In making decisions, the government considers the aspirations of Muslims, either through *madhhab* affiliation or Islamic organizations representing Muslims in each country, such as in Indonesia. The government makes decisions considering the aspirations of Muslims and leaders of Islamic organizations as well as other member countries.
5. The policy implementation is carried out in stages, starting with socialization in each member country, asking for feedback from Muslims, and monitoring and evaluating policies involving government officials in each member country and experts.
6. Resources involved. In preparing the new KIR, MABIMS involves experts sent from each member country who are experts in Falak and Islamic Astronomy.

The second variable from the implementation of public policy is the implementation environment, namely member countries with diverse characteristics in their constitutional system. Malaysia and Brunei Darussalam, which adhere to the royal system, set their policies to be dominated by the government (top-down). Therefore, every policy taken will be easily followed by its citizens. Likewise, Singapore, as a secular country, does not interfere with the religion of its adherents, including Muslims, so it is left to Muslims, in this case, represented by the Majelis Ugama Islam Singapura (MUIS). Indonesia adheres to a republican system whose constitutional system is neither a secular state nor a religious state. Thus, Indonesia took a middle path through policies based on the aspirations of Muslims conveyed through Islamic mass organizations. Decisions issued by the leadership of Islamic organizations become a reference for members and their sympathizers. This is one of the reasons why Muslims in Indonesia have not fully implemented the decisions made by the government.

For the implementation of public policy to be achieved, it must be supported by the variables of the implementation environment, which include: (1) the power, interests, and strategy of the resources involved; (2) characteristics of institutions and authorities; and (3) compliance and comprehension.

1. Powers, interests, and resource strategies are involved. The government

- of each member country determines the implementation of the Hijriyah calendar unification through the apparatus in charge of religious affairs, such as JAKIM (Malaysia), Ministry of Hal Ehwal Ugama (Brunei Darussalam), Ministry of Religion (Indonesia), and MUIS (Singapore). The importance of the determination made by the government is in order to unite Muslims and prevent divisions in the implementation of worship and celebration of Muslim holidays in their respective countries. Thus, it will create brotherhood among Muslims and strengthen *ukhuwwah* Islamiyah in the Southeast Asian region. For this purpose, the strategy adopted is holding regular meetings between members through joint seminars, astronomy experts meetings from member countries, and Muzakarah.
2. Characteristics of institutions and authorities. The institutions involved in the preparation of the new MABIMS KIR are Jakim (Malaysia), Ministry of Religion (Indonesia), KHEU (Brunei Darussalam), and MUIS (Singapore). Of these four institutions, Indonesia and Brunei Darussalam, which handle preparing the Hijriyah calendar, are directly under the ministry. At the same time, Malaysia is carried out by a separate institution whose structure is under the ministry, and Singapore is carried out by an institution representing Muslims, MUIS. In Malaysia and Brunei, the public must follow the government-sponsored calendar and cannot set their calendar. The Singapore government handed over the religious policies of Muslims, including the determination of the Hijriyah calendar, to MUIS.
  3. Meanwhile, in Indonesia, the government sets the calendar based on the aspirations of Islamic organizations. It is not coercive, as Nur Syam, Secretary-General of the Indonesian Ministry of Religion. According to him, of all MABIMS countries, only Indonesia has a difference in determining the Hijriyah calendar because it still opens up opportunities for calendar preparation by the community (Islamic organizations). This happens because, in other countries, there is an understanding that whatever is determined by the government is something that must be used as a reference (Iskandarasyah, 2017).
  4. Compliance and comprehension. The government's decision

regarding the Hijriyah calendar is complied with in Malaysia and Brunei Darussalam, while in Singapore, the decision is made by MUIS and fully adhered to by Muslims. Meanwhile, in Indonesia, it is diverse. Some comply with government decisions, and some do not. In general, understanding government decisions regarding the Hijriyah calendar is strongly influenced by the religious ideology adopted by each country, the majority of which adhere to the Shafi'i *madhhab*. The *ru'yah* method is still the basis for determining the beginning of the month related to worship (Ramadan, Shawwal and Dzul Hijjah). Hisab is used as a reference in determining the beginning of the month other than the three months. *Hisāb imkān al-ru'yah*, used as a reference in the preparation of the Hijri calendar in member countries, has not been applied consistently for all months.

Singapore is the only MABIMS member country that consistently uses *hisāb imkān al-ru'yah* in determining the beginning of its lunar month. This determination is carried out by Muslims through MUIS using the *hisāb imkān al-ru'yah* criteria decided by MABIMS, which binds Muslims in Singapore. MABIMS' new KIR proposal can be accepted if the requirements are supported by factual hilāl perception by optimal optical instruments. The criteria must consider the well-known elongation limits among astronomers (Yahya, 2019: 2-3). Malaysia, Brunei, and Indonesia are still using the results of *ru'yah* to confirm the determination of the beginning of Ramadan month, Shawwal and Zulhijjah, even though their calendars have listed the 1<sup>st</sup> of the three months.

People in Malaysia and Brunei are not allowed to determine their fasting and *ieds* based on the government, while there is still room for difference in Indonesia. Decisions about *ieds* in Indonesia are often influenced by Islamic organizations and local figures. For example, in the determination of Eid Fitr in 2009 it turned out that Eid in Indonesia lasted for 4 days, namely: 1) Saturday, September 19, 2009 (Jama'ah An-Nadzir Gowa and Jama'ah Naqsyabandiyah Padang and Al-Muhdhor Tulungagung Community); 2) Sunday, September 20, 2009 (Jama'ah Tarekat Naqsyabandiyah Banda Aceh, Government, NU, Muhammadiyah and Persis); 3) Monday, September 21, 2009 (Jama'ah Tarekat Syatariyah in Padang and jamaah Tarekat Naqsyabandiyah

in Jombang); and 4) Tuesday, September 22, 2009 (Jama'ah Tarekat Kastary Padang) (Masyhari, 2010). Eid Fitr in 2009 was extraordinary because it happened in four days even though the 1<sup>st</sup> of Shawwal was only one day. If there is a difference, it should only be two days that can be tolerated due to differences in determining the beginning of the lunar month.

The existence of this new KIR is hope for all member countries in realizing the unification of the Hijriyah calendar in the allied region. However, in its implementation, there are still differences in the function of the calendar in worship and *mu'āmalah*. The function of the Hijriyah calendar worship in determining the beginning of the months of Ramadan, Shawwal, and Zulhijjah still requires confirmation of *ru'yah*. In contrast, the *mu'āmalah* calendar function applies the new KIR. Brunei Darussalam is one of the countries that strongly uses the *ru'yah* method in determining the certainty of the beginning of the month related to worship, such as Ramadan, Shawwal, and Zulhijjah. In 1440 H / 2019M, Brunei set its Eid Fitr on Thursday, 6 June, 2019, while other MABIMS member countries were on Wednesday, 5 June, 2019. This different determination of Shawwal was caused by the absence of the moon crescent in Brunei Darussalam at the time of the *ru'yat al-hilāl* on Tuesday (Kairo, 2020). As a result, Brunei has set its Eid Fitr on Thursday, 6 June 2019, using *istikmāl* to fulfilling its Ramadan fast to 30 days.

Tabel 3. Determination of Eid Fitr in MABIMS Countries 2019 to 2022

Country	2019	2020	2021	2022
Malaysia	Wednesday, 5 June 2019	Sunday, 24 May 2020	Thursday, May 13 2021	Monday, 2 May 2022
Brunei	Thursday, 6 June 2019	Sunday, 24 May 2020	Friday, May 14 2021	Monday, 2 May 2022
Indonesia	Wednesday, 5 June 2019	Sunday, 24 May 2020	Thursday, May 13 2021	Monday, 2 May 2022
Singapore	Wednesday, 5 June 2019	Sunday, 24 May 2020	Thursday, May 13 2021	Tuesday, 3 May 2022

Based on the description above, it is clear that in terms of policy content, MABIMS member countries have agreed on new criteria for

preparing the Hijriyah calendar using a KIR of 3° hilāl height and 6.4° elongation. However, it is unfortunate that the agreement is not unanimous or "final" because it allows member countries to use the *ru'yat al-hilāl* in determining the times of worship. As a result, there will be differences in the determination of Eid Fitr in 2019, 2021, 2022 and maybe in the following years.

Furthermore, the implementation environment, namely the government and Muslims in member countries, is very complex. The complexity can be seen in the system of government and the domination of the *madhhab* adopted by Muslims. Countries with a royal system will easily determine their Hijriyah calendar, such as Malaysia and Brunei because their policies are arranged top-down. Muslims will obey the results because they are binding. In contrast to Indonesia, which adheres to a republican system, its policies cannot be arranged top-down. Still, they must also consider the aspirations of Muslims (bottom-up) with various *madhhab* affiliations. Meanwhile, Singapore, which is known as a secular country, handed over Islamic religion to MUIS, which determined the beginning of its Islamic month using *ḥisāb imkān al-ru'yah* and binding Muslims.

Finally, from the side of Muslims who are supporters and targets of the policy, it turns out that it is still dominated by adherents of the *ru'yat al-hilāl* and few who adhere to *ḥisāb* like Muslims in Singapore and members of Muhammadiyah. As a result, the implementation of the new KIR in the preparation of the Hijriyah calendar is still experiencing significant obstacles, so it cannot be carried out because the preparation of the Hijriyah calendar requires the use of *ḥisāb (imkān al-rukyah)*. This is closely related to the domination of Syafi'i school on most Muslims in Southeast Asia, which is reckoned as subordinate to rukyat. Thus, it resulted in the separation of the calendar functions for worship and *mu'āmalah*. Moreover, Brunei Darussalam embraces the dominance of the Shafi'i school, which further strengthens the prominence of this school. In addition, the influence of figures (ulama) is also influential, such as in the Tarekat Naqshbandiyah and the al-Nadhīr community. Thus, the implementation of the new MABIMS KIR is not only related to scientific issues but also concerns the complex religious understanding of the people.

## Conclusion

The new criteria for the visibility of the hilal in the MABIMS agreement are part of the political policies of Southeast Asian countries. The requirements for the crescent moon visibility agreed upon by all MABIMS member countries is 3<sup>0</sup>; 6.4<sup>0</sup>. The implementation of this policy is carried out gradually. This policy is accepted by Muslims in MABIMS member countries, except in Indonesia. This is because politics in the three MABIMS member countries is carried out in a top-down manner, while in Indonesia, it is carried out in a bottom-up manner. Therefore, the determination of Shawwal, Zulhijjah and Ramadan in Indonesia is still waiting for confirmation of the sighting of the new moon (ru'yah).

The new KIR of MABIMS, which was established in 2016, became a new hope for efforts to unify the Hijriyah calendar in the Southeast Asian region. Moreover, the member ministers of religion signed the ad-referendum on 8 December 2021, agreeing that the new criteria could be implemented in 2022. Nevertheless, optimal efforts are needed from each member country to realize these efforts. Socialization, feedback from Muslims and Islamic organizations, monitoring, and evaluation of the implementation model in the next few years with comprehensive data is still homework for MABIMS that must be prioritized.

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