Magnifying Democracy and Sovereignty In Indonesian Maritime Governance Through Open Marine Spatial Data Practice

Adipandang Yudono¹
¹Dept. of Urban and Regional Planning
Brawijaya University, Jl. M.T. Haryono No.167, Malang, 65145, INDONESIA
Email: adipandang@ub.ac.id

Abstract. This research has attempted to discover a new approach in magnifying democracy and sovereignty in the Indonesian maritime governance through open marine spatial data practices between governments and citizens. The research has been done in order to fill in the gap of bridging marine spatial data or information at all government levels and between citizen and government. The research predominantly used qualitative methods with specifically approach was discourse analysis using legal document analysis and in-depth interview to elites, and local digital mapping communities. The coherence and synergy of maritime development can be achieved through dialogue between the elites and the public. A solution to bridge political communication between the elite and the public is sharing or open marine spatial data and information.

Keywords: Democracy, Sovereignty, Maritime Governance, Open Marine Spatial data

1. Introduction

Today, issues of maritime affairs and fisheries in Indonesia are the main targets to be achieved under Joko Widodo’s cabinet, the current President of Indonesia, known as "NawaCita". NawaCita has meaning the nine priority agenda of Joko Widodo - Jusuf Kalla government cabinet, which become the national flagship programmes to be realized during the term of office period. In an effort to strengthening Indonesian image as the maritime state, the development of maritime sector as well as sea-tolls infrastructure for inter-island logistics transportation and utilization of fishery and marine resources for the welfare of the Indonesian people are prioritized for immediate implementation. One of immediate actions to achieve NawaCita is marine open data practice between government levels and citizens.

Maritime data are central to the working of the Indonesian government to implement regular programmes, management and strategies, particularly in maritime governance. Governments at all levels (central, state/province and local level) often run their maritime programmes on the bedrock of accurate, seamless, reliable and up-to-date data which can be transformed into valid maritime information. The government usually creates the information by compiling it from various authorised data to formulate policies and strategies that affect society. However, although in maritime governance, marine spatial data is crucial, often it is not given sufficient attention.

An effective communication amongst maritime governance stakeholders (i.e. governments, planners, contractors, citizens) becomes a fundamental factor in maritime governance issues. It not only allows transaction of maritime information but also avoids/minimizes maritime information gap (fragmentation) resulted form lack of coordination. The persons involved will get maritime information from the agencies and feedback from maritime data and information users. However, research in communication related to open marine spatial data at governance levels and the
relationship with non-government spatial data providers in the crowdsourced information context is still in its infancy and invites a challenge for the new knowledge.

This research has been done in order to fill in the gap of bridging marine spatial data or information at all government levels and between citizen and government. The objective of this research is to discover a new approach to enhance more democratic maritime governance by implementing open marine spatial data practice involving central government, regional government, local government, and citizens by investigating official spatial data development accommodating crowdsourced geographic information context in a nation.

2. Methods

This research predominantly used qualitative methods with specifically approach was discourse analysis using legal document analysis and in-depth interview to elites, and local digital mapping communities. The legal document collections were needed to gain a comprehensive understanding of maritime governance and marine spatial data infrastructure development. Furthermore, the interviews were used to understand the perspective of the government and citizens in terms of their current strategy and initiatives for promoting maritime governance through open marine spatial data practices from a political and social background.

An in-depth interview activity is undertaken to get information about the acquainted and substantial potential of official spatial data and crowdsourced geographic information integration in the maritime governance practice. In this case, the respondents explained their current working activities and experiences using Geographical Information Systems (GIS), including their expectancy and threat towards spatial data sharing amongst institutions. In order to facilitate the process of interview and to ensure all information are secured, note taking with the help of digital voice recording has been applied and later transcribed. Furthermore, the legal document collections were used to serve the purpose of providing a fundamental background of the policy context to gain a comprehensive understanding of the marine spatial data development and sharing in maritime governance applications that has been done and will do in the future.

The next step after accomplished interviews, legal document collections and field observation was doing coding. It was be done subjectively by applying the method utilised by Renner and Powell (2003)\(^1\) to draw out the significance of the words or the topics, which are recognised as far as the thoughts or ideas. These were then sorted out into thematic classifications that will abridge and convey intending to the content. The coded information then investigated utilising a content analysis. In the content analysis, the examination moved from a generous viewpoint to look for a specific insight of the research topic. This diagnostic might be investigated with discoveries from documents and investigations from the respondents.

3. Result

3.1 The Open Data Practices in Indonesia

From 1966 to 1998, under the Suharto regime, the former 2nd President of Indonesia, the distribution of government data and information were very strictly controlled by the state. Access to data and information were subject to very strict regulations; there was no public access to official information, and even inter-governmental institutions found it extremely difficult to exchange data or information without obtaining recommendations from the heads of government departments\(^2\)\(^3\)\(^4\).

The phenomenon of limited access to obtain data and information can be traced by examining The Law No. 7 of 1971 concerning principal filing provisions, especially Article 11, Paragraph 1 of the criminal provisions which states "Whoever intentionally and unlawfully has official data and information without legal procedure may be liable to imprisonment for a maximum of 10 (ten) years."\(^5\). In addition, Paragraph 2 states that "Whoever deliberately or unintentionally passes on the content of official data or information to third parties who are not entitled to know it, the person in charge of keeping the data and information safe may be liable to imprisonment for a life sentence or imprisonment for a maximum of 20 (twenty) years."\(^5\). A further provision is found in Government
Regulation No. 34 of 1979 on "Depreciation Archive" in the explanation of Article 15 which states that "Depreciation archives referred to in this government regulation be implemented with due regard to the security and the confidential nature of the archive." [6].

Political reform in 1998 marked the collapse of the Suharto regime and brought about fundamental changes to the Indonesian Constitution. Indonesia ratified human rights covenants and amended the Indonesian Constitution 1945 in 2002. One of the amendments guarantees the rights of citizens to access information, as specified in Article 28F of the Amendment: "Everyone has the right to communicate and obtain information to develop their personal and social environment, and the right to seek, obtain, possess, store, process and convey information by using all available channels". The Article became the basis for constructing a law on public information disclosure [7].

The draft of the Indonesian Freedom of Information Act, Rancangan Undang-Undang Kebebasan Memperoleh Informasi Publik (RUU KMIP) was first put forward in 2000 by the Indonesian Centre for Environmental Law (ICEL). The difficult negotiation of the RUU KMIP took until 2007, due to tough negotiations between the Executive government under the President’s control and the Legislature under The House of Representatives control [8].

In April 2008, RUU KMIP was finally passed into the law as the Indonesian Freedom of Information Act, Undang-Undang Keterbukaan Informasi Publik (UU KIP) (Law No.14 of 2008). Two years later, The Law. No.14 of 2008, has been run effectively upon issuance of Government Regulation No. 61 of 2010 of the Law No. 14 of 2008 guidelines. It took eight years for Indonesian Freedom of Information Act to be ratified, and based on the Indonesian law procedure, the law can be implemented when law derivative, in this context is the Indonesian Government Regulation for the law implementation guideline, is stipulated. Ordinarily, the government regulation enactment from the law ratification takes two years, The situation means to impose Freedom of Information Act in Indonesia needs a 10-year since the 2nd Constitution 1945 amendments in 2000 (see Figure 1)

![Figure 1. Establishment of Freedom of Information Act in Indonesia](http://www.asef.org/images/stories/ccs4/ws%206_alamsyah%20saragih%20indonesia.pdf)

The ratification of the Freedom of Information Act and regulations was completed in 2010 officially beginning an era of open data in Indonesia. One of the substantial agendas of open government data in this research topic is open marine spatial data in maritime governance context.
3.2 The Indonesian Role in the Protection and Empowerment of Marine Resources in the International Arena

Today, The Indonesian Ministry of Maritime Affairs and Fisheries (KKP) in incorporate with other Association of South-East Asian Nasion (ASEAN) maritime/marine ministries under the coral triangle Initiative programme, which is focus in a program of protection and empowerment of marine resources living therein, details can be found at http://www.coraltriangleinitiative.org. This coral triangle area is very strategic as a food supplier and a place to live for fish, especially tuna and a variety of reef fish, where they spawn, lay eggs, and thrive. However, as adults grow, these fish communities migrate to other regions / countries outside the coral triangle area. The countries included in the Coral Triangle Initiative programme agree to run the global fishery trade system fairly. One of the formation of this organisation is made label / brand for certification, or currently known as Eco-label, that products out of coral triangle area has been friendly, or have standardization, where when the country entering the coral triangle area is buying fish outside the country of the region, already has a bargaining price. However, it is acknowledged that in reality, the implementation of the Coral Triangle Initiative is full of strong political content. There are some conflicts, such as the Australian State disagreeing with the concept of bargaining price, which is considered to be detrimental to it. Another case, where the country of Vietnam has a political repayment with America, all fisheries exports to America from Vietnam is made easier. While other member countries of the Coral Triangle Initiative, such as Indonesia, Malaysia and other countries that do not have political relations with America have difficulty to export fisheries. Another case is illegal fishing, where Indonesian fishery and marine products are stolen and processed in several ASEAN Member States and East Asian countries. Thus, the term is, Indonesia does not get any results from this fishery and marine resources, whereas Indonesia maintains its ecosystem, but no one pays for the services of fish breeding ecosystem for Indonesia, so this is the idea to increase open data / data sharing in the KKP environment, with the concept of the Payment Ecosystem Service, where the fee is paid using certification from the Coral Triangle Initiative organisation.

In the world of international fisheries, there is a division of fishing zones arranged in various regional authority groups called Regional Fisheries Management Organization (RFMO), based under FAO-UN, more details, can be found at http://www.fao.org/fishery/topic/166304/en . Indonesia itself is surrounded by 3 RFMOs, the Indian Ocean Tuna Commission (IOTC), The Convention for the Conservation of Southern Bluefin Tuna (CCSBT) and the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC). This means, Indonesia cannot be arbitrary to catch fish outside this region. However, there is an odd thing, for example the type of tuna fish, where when Indonesia has its own abundant tuna fishery resources, for its arrest regulation, Indonesia must have licenses. So that tuna has a quota of populations that are allowed to be fishing. The purpose of the tuna fishing quotas is to conserve the world's fish. Here, there are calculations, such as the number of tuna in an RFMO, which will be subdivided into each country. By:

- State Compliance.
- Capacity of the Country

It is felt another odd things with the quota of tuna in this RFMO, which obtained the largest quota is a country that lacks / lacks tuna resources as big as Indonesia. in the context of illegal (non-official) systems they contribute, where the system is as follows, the vessel for catching its tuna comes from countries where the marine territory has a small population of tuna while for licensing, in collaboration with person in Indonesia as maritime territory with abundant tuna population, then out permit for fishing from companies with name or belonging to Indonesia, but ship and its ship crews (ABK) is all stranger. The case of illegal fishing is also happening in Solomon Island, based on the study of World Wide Fund (WWF), neatness of fishing administration is not good too, so the case of illegal fishing is much more rampant there.

In relation to illegal fishing, when marine and fishery issues begin to lead to trade,
superpowers, such as America and European countries, focus on certifying food for the safety of food products that enter the country. To that end, these superpower nations are assisting countries rich in fish and other marine products, to select fisheries and marine products toward certification and have security for consumption for their people. On the basis of that, fisheries management began to be tidied, ranging from the legal administration of fishing and the manner of his capture. Thus, fish and other marine products netted in the case of illegal fishing will be banned, or fish or seafood products have been blacklisted, so it cannot be accepted by the world fishery market.

At the current ASEAN level, there is cooperation with a programme called Regional Plan of Action Illegal, Unreported and Unregulated (RPOAIUU), a cooperation program involving 11 countries in ASEAN in implementing open data / data sharing related to illegal fishing indication. However, at the time of implementation, the regional secretariat of RPOAIUU, in this case Indonesia through the KKP with the executor of the Directorate General of Marine and Fishery Resources Control, said that when asked for data to countries that have political power with superpower countries such as Thailand and Vietnam, for data acquisition. When a forum of RPOAIUU meeting was held, delegates from countries with political power relations with the superpower were present, mostly not officials at decision level positions, but operational staff who lack knowledge of illegal fishing data and information. This is the obstacle in conducting data sharing illegal activities of fisheries and marine environment of ASEAN.

In fact, Indonesia itself is quite sophisticated in the acquisition of data and information related to fishing and other marine products, which is applied to the Vassel Monitoring system, a kind of GPS tracking that is used on large ships with a fishing range above 12 miles. These data are connected to the internet and can be accessed to global data fishing tracking such as marine traffic or ship finder that works like Flight Radar 24.

In multilateral cooperation, open data / data sharing system is required commitment and understanding and vision the same. In fact, for the ASEAN region, such as Indonesia, Malaysia, Thailand and the Philippines have good Human Resource capacity and management performance of fishery and marine resources compared to archipelagic countries such as Timor Leste, Solomon Islands and Vanuatu, the commitment to mutual prosperity can be realized in the effort of marine and fishery data sharing.

For the scope of Indonesia itself, in ensuring the transparency of data between institutions engaged in maritime, KKP, as the highest authority of marine sector has been bridging with the loosening of marine data sharing bureaucracy, the motivation is the understanding in various data, but sometimes, there are initiatives that are the same purpose, his political commitment is different, ultimately the data sharing is not running. Not focus on one purpose, because there are other activities done in fisheries management, so data sharing is ignored. Therefore, things can be taken, that leadership commitment has crucial action, and this is recognized very difficult to implement. For example, in government institutions, when there is a change / transfer of positions, communicating data sharing programs between the old and new officials is not necessarily done, because the different vision and mission carried by the new leadership, often not in line with the vision and mission of previous officials. So Leadership and Policy become the main aspect for successful implementation of open data system, moreover is component of commitment to willingness to do data sharing among institution that move in maritime sector.

3.3 The role of open marine spatial data in strengthening seafood security

In terms of the development issues for fulfillment of fishery and marine products, the national programme launched by the Indonesian government is food Security. In the exposure of food security in maritime sector, there are 3 main components that become the concentration of operations, namely:

1. Traceability. The focus of operations is the tracking of producers to end users, such as knowing the geographical location of fishing and other marine products, the location of the distribution of the harbor for the collection of fish, the location of fish processing and seafood, the location of the port / airport that becomes the destination of the processed fish and
seafood, export location to other fish and marine fishing destination countries, then detects the recipient of fish and other seafood in the country of export to detect the final consumer.

2. Affordability. The extent to which people are able to buy fishery products and other marine resources

3. Supply Stock (Availability), at what rate, the market is able to provide other fishery products and sea fisheries.

3.4 The Potential Strategy Creating Open Marine Spatial Data Alliances in The Context of Maritime Governance

Various Information systems scholars acknowledge that achieving good organisational performance requires equal vision and mission amongst members \[9\][10][11][12]. Specifically, Budhatoki and Nedovic-Budic (2007) argue that the essential point of data or information sharing in an organisation performance factor is an inter-organisational Collaboration-Cooperation-Coordination (3C) element\[13\]. In relation to this, this section will examine the broader 3C concept and its relevance to spatial data development and sharing in spatial planning process.

3.4.1 Collaboration

Collaboration gives an opportunity for sharing learning, background and aptitudes with various individuals, keeping in mind the end goal of altering objectives and creating improvement. Within a specific end goal to effectively work together, there must be adequate assets, a society that energizes compelling collaboration and participation and in addition clearly understood obligations\[14\][15].

Moreover, colleagues involved in collaboration must trust and respect each other. There must be open correspondence and readiness to acknowledge information from others. Since in all groups there are clashing objectives, decision-making must take place through cooperative methods. Collaboration guarantees that no one individual, gathering, association or foundation is completely accountable for anything; rather, all are included and bear a measure of obligation\[16\]. (Characteristics of the collaboration and the relationship with cooperation and coordination can be seen in Figure 2).

With relevance to the context of this research, collaboration amongst authorised and non-authorised inter-organisations that produce and manage marine spatial data can create willingness for each organisation to share their knowledge and assets in data and information in a commitment to the obligation of achieving a nation aim. Therefore, collaboration is one of the essential elements necessary to achieve successful potential integration of official open marine spatial data and VGI in supporting the maritime governance process.

3.4.2 Cooperation

Cooperation is depicted as a casual relationship without a typical mission in which data or information is shared on ‘an as-required’ premise, power stays with every association, there is little (or no) danger assets are kept separate. Furthermore, inter-organisational partnership includes assets, abilities and skills in the quest for common enthusiasm for the achievement of the organisations’ goals\[15][16]\.

The amalgamation of data and information production with marketing or dissemination is a type of joint advantage, central to achievement\[17\]. In terms of this research, cooperation amongst authorised and non-authorised inter-organisations that produce and manage marine spatial data can create commitment to the obligation of achieving a nation aim, in this case, achieving coherent maritime governance programmes at different levels (Characteristics of cooperation and the relationship with collaboration and coordination can be seen in Figure 2).

3.4.3 Coordination

Coordination suggests understanding the dependencies between the responsibilities the various class representatives are performing and the way the class coordinates their duties\[18\]. Coordination
ensures that all specialists and divisions recognise what and when they have to accomplish. Along these lines, work starts with one office then onto the next without hindrance.

In any association, nation or activity, all individuals must be organised in such a way as to guarantee that general vital aims are accomplished and every individual makes a commitment. Therefore, coordination has an essential point in an organisational performance. Every single departmental arrangement and spending plans must be facilitated to guarantee they are cooperating to accomplish agreed goals [16](Characteristics of the cooperation and the relationship with collaboration and coordination can be seen in Figure 2).

In this study, coordination amongst authorised and non-authorised inter-organisations that produce and manage marine spatial data can integrate, synchronize and simplify the different tasks on an ongoing basis to achieve effective and efficient maritime governance.

- Driven by mutual self-interest
- Requires high level of responsibility of each member
- Often requires expertise of each party
- Requires high level of trust about the safety of sharing proprietary data and information
- Addresses the substantial needs of each member
- Value often derivative (e.g. process improvement, efficiency initiatives)
- Value may directly accrue only to one party (or neither)
- Driven by order
- Team work has significant value in achieving success
- Typically effective in short-term goals

Source: Modified from The Economist Intelligence Unit 2008

https://www.trinityp3.com/2012/08/did-you-want-collaboration-cooperation-or-coordination-with-that-marketing-process/

Figure 2. Characteristics of Collaboration-Cooperation-Coordination (3C) and The Relationships of 3C Elements

The 3C concept is helpful in creating an inter-organisations (authorised and non-authorised) partnership to develop and open marine spatial data at the macro scale. However, this concept needs to understand the spatial data transaction relationship in terms of how inter-agency partnership can achieve consensus for sharing their marine data and information knowledge assets. The next session will discusses this issue.

4. Discussion

According to governance perspective, potential spatial data and information integration between official spatial data and crowd-sourced geographic information in the maritime governance context is determined by active communication between government and citizens. The researcher proposes a stepped model of community participation the government’s agenda through open marine spatial data and information between official spatial data and crowd-sourced geographic information. Purpose of proposing this model is to identify the levels of public participation and government participation in creating collaboration, cooperation and coordination in the maritime governance circumstance (See Figure 3).
Level 1: Taken for granted

Citizen who live in coastal areas have passive attitudes. They take for granted that planning activities are developed and implemented by the government. Likewise, from the government's perspective, the community does not need to be involved in the maritime development agenda. At this stage, political communication between community and government in terms of maritime governance has not been achieved.

Level 2: Information Sharing

People are concerned about the area where they live and provide current information about conditions in their local region. Information can be delivered through Musrenbang (public hearings) or submitted online, including spatial data sharing in a user-friendly platform between the public and the government. The government tends to accept public input for improving the planning agenda. At this stage, collaboration between citizens and government has begun.

In terms of spatial data sharing, citizens as sensors have volunteered to be local mapping contributors by interpreting spatial objects on a user-friendly application or mobile digital mapping platform. It aims to inform other communities and reports current condition as input in spatial policy making.

Level 3: Intermediary

This stage bridges the gap between public demand for improving their living environments and the government agenda, which has been drawn up for maritime development implementation. In a development activity, political communication between a government agency and the public often
reaches a deadlock. Thus, facilitating communication between the two parties needs an intermediary actor has been selected based on personal or community organisation experience with a good reputation trusted by the both sides. Frequently, the intermediary actors in planning activities are international or local NGOs and universities. At this stage, participation between citizens and government has moved from collaboration to cooperation.

In terms of spatial data sharing, high community interest in spatial data will need a local digital mapping organiser to control spatial data quality and reliability. Sometimes, the task of the local digital mapping organiser is as a substitute for local mapping contributors to the continuous updating of spatial data.

Level 4: Delegated power and community control

This stage is the ultimate step in creating coordination between government and the public. The members of the *ad hoc* team are representatives from government, universities and community organisations and are generally established in planning and development practice. This *ad hoc* team works to formulate spatial policy and determine maritime planning and development programme priorities in real development projects. In terms of spatial data sharing context, the local digital mapping organiser and government officers join the *ad hoc* team to manage spatial data sharing transactions and work to ensure reliable quality and quantity of official spatial data.

Overall, this research has attempted to discover a new approach in magnifying democracy and sovereignty in the Indonesian maritime governance through open marine spatial data practices between governments and citizens. The coherence and synergy of maritime development can be achieved through dialogue between the elites and the public. A solution to bridge political communication between the elite and the public is sharing or open marine spatial data and information.

5. Conclusion

The current issues of maritime affairs and fisheries in Indonesia are the main agenda of the new President of Indonesia known as "Nawa Cita", the nine priority agenda of JokoWidodo – Jusuf Kalla government, which become the national flagship program to be realized during the term of office period. In an effort to strengthen Indonesia has the identity as a maritime State, the development of maritime sector as well as sea-tolls infrastructure for inter-island logistics transportation and utilization of fishery and marine resources for the welfare of the Indonesian people are prioritized for immediate implementation. One of immediate actions to achieve *NawaCita* is open marine spatial data between government levels and citizens.

Leadership and Policy become the main aspect for successful implementation of open data system, moreover is component of commitment to willingness to do data sharing among institution that move in maritime sector. Finally, The coherence and synergy of maritime development can be achieved through dialogue between the elites and the public. A solution to bridge political communication between the elite and the public is sharing or open marine spatial data and information.

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