Collaborative Approach For Coastal and Marine Spatial Planning in Indonesia: Opportunity and Challenge

A Ramadhan\(^1\), W Salim\(^2\), T A Argo\(^3\)
\(^1\) Phd Candidate at Regional and City planning, Bandung Institute of Technology (ITB)
\(^2\) Associate Professor at Bandung Institute of Technology (ITB)
\(^3\) Assistant Professor at Bandung Institute of Technology (ITB)

E-mail: andrianmadhan@gmail.com

Abstract. The transition model from centralistic to decentralization government influences planning processes in Indonesia. It demands stakeholder’s collaboration to facilitate broad participation and coordination among sectors and regions. The following article examines the theoretical foundation, opportunities, and challenges of collaboration approach on coastal and marine spatial planning (CMSP) in Indonesia. A literature study has been engaged to reveal the theoretical foundation of a collaborative approach for CMSP. Based on the exploration, a collaborative approach is unavoidable to cope with the nature of the problem in CMSP. This approach has a bright future due to the global support and political era of democracy. However, in practice, there are still a number of obstacles ranging from bad communication among actors to low knowledge and awareness of sustainability issues.

Keywords: Coastal and Marine, Conflict of interest, Collaborative, Indonesia, Planning

1. Introduction

A most important issue in CMSP are integrated governance. Due to Ehler and Douvere [1a], integrative in CMSP includes several understandings. First, facilitation of economic sectors that utilize sea space on the surface, the column or the bottom. Second, integration of different government agencies that lead to economic, environmental and geo-spatial sectors. Third, integration between various settings. Fourth, integration in allocating other types of utilization. Fifth, the integration of environmental considerations in space allocation for human activities.

The meaning of integration is close to comprehensive planning which is a socio-economic process over spatial relations based on the considerations of experts in their fields [2]. This situation implies the demand of stakeholders’ collaboration. However, this is not an easy task because of the powerless issue held by planners in coordinating sectors related to. The following article tries to further investigate the collaborative application of CMSP. The structure of the paper begins with a review of the institutional theory which forms the background for the importance of collaborative management. Afterward, the paper will discuss collaborative approaches and regulatory frameworks in Indonesia.

2. Material and Methods

This paper is based on a literature study of articles related to the concept of marine spatial planning, institutional and legal rules that apply in Indonesia. Literature study is a method for
uncovering discussions from a topic through summary and critical analysis that is available either from research or others [3][4]. The material collected is then presented narratively to explain the practices of collaborative CSMP

3. Review of Institutional Theory for Coastal and Marine Spatial Planning

Coastal and marine areas have a distinctive character which is implicated in its planning and management. In definition, coastal is the area where land and sea meet together [5]. The boundaries of coastal areas are marked by the influence of natural processes between land and sea such as tide and sedimentation [6]. Coastal water areas are also affected by human activities on land both directly or indirectly. As it is known that the community has used the land along the watershed to the coast for various purposes such as agriculture, settlement and industry.

Coastal and marine areas have been used for many purposes around the world due to their ecosystem services [7]. But the services can only be generated when all ecosystems are functionally connected with each other. The functions of mangrove, coral reefs, seagrasses and pelagic are well working only if they are not compartmentalized. Holling describes interactions among ecosystems with four basic functions which are exploitation, conservation, release, and reorganization [8]. Costanza and Folke explain those functions with four points [9]: 1) exploitation, a situation associated with ecosystems of harvested resources; 2) Conservation, a condition in which increasing resources can be obtained and storing complex structures; 3) Release, a situation when conservation has succeeded in building complex and strong bond structures so that they become "over-connected" which triggers rapid changes; 4) Reorganization occurs when the release phase of the mobilized material becomes exploitable.

Based on the description above, coastal and marine areas are close to common-pool resources (CPR) characteristic which needs to be planned and managed carefully to avoid a disaster called the tragedy of the commons [10]. CPR explains the nature of a commodity that is difficult to separate from public ownership in one hand and high utilization on another hand. Under this circumstance, people face a dilemma between willingness to protect resources (for better future benefit) and willingness to take the benefit before others. As a result, people racing to get benefit from resources so that lead them to scarcity. To deal with this issue, the management areas must be done in a coordinated manner because two factors [11] : (a) how much, when, where and type of technology used to harvest the resources and/ or (b) how much and or when to invest in maintenance supplies or inputs into CPR facilities. In line with Berge who emphasizes the CPR regulation on the basis of resource allocation, the technique of extraction, monitoring, conflict resolution, and administration recognized by statutory regulations in order to achieve sustainable goals [12].

The concept of coastal and marine planning and management responds to the need for coordination by promoting community involvement and transferring resource ownership to group mechanisms [13]. Joint or collaborative management will provide incentives in the form of lower transaction costs compared to an individual one [14]. This type of management corresponds to the model of participatory government introduce by Peters [15] which allows public involvement in decision making and reduces the barriers of the hierarchy. The need to implement a collaborative approach is also appropriate for decentralization governance due to efficiency in handling collective benefits and externalities issue [16a]. In this case, coastal and marine areas administratively could be registered into two or more local governments but as an ecosystem, they are inseparable. Therefore, collaborative action is inevitable to harmonize action among local governments and provide mechanisms for resource exchange, commitment, and trust. However, they must be able to identify mutual benefits and create low transaction costs for negotiating, monitoring and enforcing agreements so that cooperation is more feasible [16b]. According to Ansell and Gash [17a], collaborative management forms a cycle that involves dialogue, trust-building, commitment to the process, shared understanding and getting an intermediate outcome.
Collaborative governance does not mean eliminating the central role of the government to mediate and facilitate among competing interests. Delivering governance right to the community, in many cases, is not effective to achieve an agreement particularly in a region with high pressure on the population and economic development [18]. In a more common situation, communication deadlock is frequently happened due to the resistance behavior of competing parties [19] [20]. Even more, communicative processes can obscure the context of a plan because too focus on the process. Of course, this situation is unfavorable for planning that involves natural resources. Therefore, leadership must emerge to facilitate conflicts of interest and guarantee the direction of planning in accordance with its original purpose. Those who play a leadership role then must have a good network which enables communication and relationship with competing parties.

Here, a network is defined as something continuously interacts to achieve specific assets such as geographical, physical and human trough the structure and relation of power [21]. Castell [22] considers the power relationship as the main foundation in a society because it can determine institution behavior. Creating a network then is an attempt to influence human behavior through power.

Collaborative approach principles above inspire the concept of coastal and marine spatial planning (CMSP) that was emerging since the 2000s. CMSP emphasizes stakeholder’s involvement in all phases from the planning, implementation, monitoring and evaluation processes to reduce conflicts among users and enhance compatibility among various utilizations [1b]. This emphasis addresses the need to integrate different points of view such as social, economic and environmental so that reconciliation between human activities and the environment could be reached [1c] [24] [25]. In practice, CMSP needs to orchestrate all stakeholders including different levels of government, public, private and non-profit organizations.
4. Collaborative Approach and Regulatory Framework for Coastal and Marine Spatial Planning in Indonesia

Indonesia has moved from centralized to decentralized governance through Law no. 22 of 1999 concerning regional autonomy that brings a significant impact on coastal and marine planning and management. In the previous era, the coastal and marine regime was labeled as centralistic, doctrine-based common property, and anti-pluralism of law [26]. As a consequence, the environment quality has declined and also its related ecosystem services. Coastal ecosystems have undergone a drastic change in which mangroves changed into fishponds, settlements, ports and industrial areas as happened at the north coast of Jawa. Overfishing in several areas allegedly happened in relation to shrinking fishing productivity. Many species of fish were increasingly difficult to find because their existence became scarce.

In its development, the government issued Law No. 24 of 2005 concerning the National Development Planning System which leads to integrated central and regional governance. The spirit of decentralized governance is then followed by a more participative process through Law No. 26 of 2007 concerning spatial planning where notice the importance of public engagement in preparation, utilization and controlling the implementation of the spatial plan. Law No. 27 of 2007 concerning the management of coastal and marine areas which were born afterward also adopted the same principle which regulates the involvement of the private sector and the public in the preparation of planning documents both at the provincial and municipal level. Recent laws relating to coastal and marine management progressively emphasize the importance of integration and involvement of public participation as reflected in the Law. No. 1 of 2014 concerning amendments to law number 27 of 2007 concerning the management of coastal areas and small islands and Law No. 32 About Marine. In summary, the aspects of integrative management and public involvement in the two laws are presented in Table 1.

| Substances | Law. 32/2014 | Law. No. 1. 2014 |
|------------|--------------|------------------|
| Integrated Management | a. the implementation of integrated management by integrating Marine policy through coordinated planning of multi-sector and government level | a. The management action plan is carried out in a coordinated manner to carry out various activities required by Government agencies, Regional Governments, and other stakeholders |
| | b. Integration of marine development policies in both the short and long term | b. Changes in the function of zoning in conservation areas must be carried out on the basis of integrated research consisting of elements of relevant ministries and institutions, community leaders, academics, as well as fisheries and marine practitioners |
| | c. Maritime disaster management as an integrated part of the national disaster prevention and management system | |
| | d. Integrated sea security handling under one command and control | |
| Public involvement in coastal and marine management | a. Formulation of marine development policy | a. Formulation proposal of RSWP-3-K, RZWP-3-K, RPWP-3-K, and RAPWP-3-K |
| | b. Marine management | b. Formulation of RSWP-3-K, RZWP-3-K, RPWP-3-K, and RAPWP-3-K |
| | c. Marine development | |
| | d. Evaluation and supervision | |
| Note: | RSWP-3-K: Strategic Plan for Coastal Areas and Small Islands | RZW-3-K: Zonation Plan for Coastal Areas and Small Islands |
| | RPWP-3-K: Management Plan for Coastal Areas and Small Islands | RAPWP-3-K: Action Plan for Coastal Areas and Small Islands |
Recent regulations provide a legal framework and guidance for a collaborative approach in planning and management. However, a number of obstacles arise in the implementation that can be categorized as below.

4.1. Regulatory compatibility

A regulation may not work effectively due to its compatibility with other regulations. For example, RZWP3K can only result at the provincial level while spatial plan (RTRW) is possible at a lower level. This provokes spatial policy contradictions due to different priorities between provincial and municipal governments. Moreover, coastal and marine spatial planning should also be integrated with the RTRW both at the provincial or municipal level as stated in the Law No. 26 / 2007. Another potential conflict comes from Law No. 6/2014 which gives village governments the authority to establish their own rules. Village governments generally tend to act pragmatically and give first priority to economic issues. Common phenomena that come later on is a land conversion to fulfill market demand. As it is known, many coastal villages have a strategic location for various purposes such as tourism and industry.

Incompatibility is also related to which institution has the authority to handle coastal spatial planning. Yurista and Wicaksono [27] argued that marine and fisheries agency may have no right to formulate RZWP3K because their authority only for the management as stated in law No. 32/2014 and law No. 1/2014 while the authority of spatial planning still belongs to spatial planning agency. In fact, this agency runs the marine spatial planning process at both the provincial and district levels.

Another regulation discrepancy occurs between zoning in the national park area and coastal and small islands zoning. Based on the law. No. 41 of 1999 which was revealed in PP No. 28/2011 concerning the management of nature reserves and nature conservation areas as well as Forestry Ministerial Decree No. P.56 / menhut-II / 2006 concerning national park zoning guidelines, the authority of the national park bureau is limited to the territorial waters and existing ecosystems such as coral reefs, mangroves, seagrasses, coastal forests, and terrestrial forests. While small islands and coastal area, in general, are local government domain that probably has a different interest. Meanwhile, the sustainable planning of coastal and marine areas requires integrated planning that counts coastal, small islands and surrounding waters as a unified system.

4.2. Conflict of interests among sectors

Difference interests among sectoral agencies are a classical problem that hard to be reconciled. For example, conflict of interest between conservation and tourism in zoning formulation of Karimunjawa Marine National Park (KMNP). Zoning revision in 2012 was initiated by the local government to facilitate tourism activities on small islands scattered in the area of KMNP. In the previous zoning, many water areas around the islands are intended for preservation and conservation that had made accessibility to the island was limited [28] The situation was seen as hampering tourism development and was subjected to criticism by investors who had bought lands on the islands. For this reason, the Karimunjawa National Park Agency has run the revision process so that the accessibility and tourist activities are possible. A similar case occurred in Bontang where there was a tug of war between the oil and gas sector, sea transportation, fisheries, tourism and conservation in the planning of coastal areas [29]

4.3. Poor communication between government and community

The problem that often arises in CMSP is poor communication between the government and the community. For example, CSMP of Jepara has been protested due to the lack of community involvement so that it causes discrimination against traditional fishing communities. Their access to marine resources has been restricted by a new obligation that requires fishermen to have a territorial use certificate [30]. Weak public participation involvement also occurred in the case of zoning of Raja Ampat Marine Protected Area, which resulted in a 25% loss of local
fishing catchment area [31]. Poor communication is generally triggered by differences in interests between government and society. This condition is exploited by the government with its power to direct the planning process as it wishes even though it is wrapped in the name of community participation. This situation then led to resistance from people who felt disadvantaged [32].

5. Discussion
Changes in the governance paradigm and its problems are an important basis to develop collaborative governance as proposed by Ansell and Gash [17c]. However, it is necessary to improve the legal paradigm where new regulations should be the main reference so that they can annul contrary articles in the previous regulations. Such actions can eliminate the aspect of legal uncertainty that has been used by actors as reasons to justify their decisions. An example is a coastal and marine spatial planning, based on the law. No 23 / 2014, is regulated by the province so that it no longer binds to the district RTRW as stipulated in the Law. No. 26 of 2007. In contrast, RTRW that are affected by provincial coastal and marine spatial planning must be adjusted and harmonized.

Conflict of interests and poor communication as discussed earlier can also be an entry point to find out the level of trust of the community and other stakeholders toward the CMSP process. Trust is an important factor in the success or failure of coastal resource management that involves the community that can be built through authentic dialog [33] [34a]. Booher and Innes [34b] believe authentic dialogue can function as a breaker of deep structural problem that prevents a collaborative work. Planners, in this case, are strategic players who can direct complex planning processes while reconciling conflict parties through an informal approach (Forester, 1988). In advance, planners need to think and act strategically about what and when an issue is appropriate to be discussed. Limited knowledge and public awareness must be considered about how communication should be done.

6. Conclusion
A collaborative approach is a must to achieve an integrated and effective MSP. However, this approach requires supporting institutional settings. First, there must be clarity of functions and duties of all stakeholders involved, including who is authorized to coordinate among agencies. Second, there must be a clear and non-overlapping regulatory framework. These two matters seem still to be big homework for Indonesia and other developing countries.

Reference
[1] Ehler C, Douvere F. Marine Spatial Planning: a step-by-step approach toward ecosystem-based management. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. 2009
[2] Friedmann, John, and John Miller. "The urban field." Journal of the American institute of Planners 31.4 (1965): 312-320.
[3] Cronin, Patricia, Frances Ryan, and Michael Coughlan. "Undertaking a literature review: a step-by-step approach." British journal of nursing 17.1 (2008): 38-43.
[4] Hart, C. (2018). Doing a literature review: Releasing the research imagination. Sage.
[5] Kay R and J. Alder. 1995. Coastal Planning and Management. Routledge. USA p. 345
[6] Bengen DG, Dutton IM. Interactions: mangroves, fisheries and forestry management in Indonesia. Fishes and Forestry: Worldwide Watershed Interactions and Management. 2004 Mar 19:632-53.
[7] Costanza R, de Groot R, Sutton P, Van der Ploeg S, Anderson SJ, Kubiszewski I, Farber S, Turner RK. Changes in the global value of ecosystem services. Global environmental change. 2014 May 1;26:152-8.
[8] Holling CS. The resilience of terrestrial ecosystems: local surprise and global change. Sustainable development of the biosphere. 1986;14:292-317.
[9] Costanza R, Folke C. The structure and function of ecological systems in relation to property-rights regimes. Island Press, Washington, DC; 1996.
[10] Hardin G. The tragedy of the commons. Science. 1968 Dec 13;162(3859):1243-8.
[11] Ostrom EE, Dietz TE, Dolšak NE, Stern PC, Stonich SE, Weber EU. The drama of the commons. National Academy Press; 2002.
[12] Berge E. Environmental protection in the theory of commons. Trans-nationalizing the commons and the politics of civil society®, Chiang Mai, Thailand. 2003 Jul:11-4.
[13] Arrow K. Rights to nature: ecological, economic, cultural, and political principles of institutions for the environment. Island Press; 1996 Sep 1.
[14] Kartodihardjo, H.. Analisis Kebijakan Pengelolaan Sumberdaya Alam : Diskursus - Politik - Aktor - Jaringan. Bogor: Sajogyo Institute; 2017
[15] Peters BG. The future of governing: Four emerging models. Univ Pr of Kansas; 1996.
[16] Feiock RC. Rational choice and regional governance. Journal of Urban Affairs. 2007 Feb 1;29(1):47-63.
[17] Ansell C, Gash A. Collaborative governance in theory and practice. Journal of public administration research and theory. 2008 Oct 1;18(4):543-71.
[18] Berkes F. Social systems, ecological systems, and property rights. Rights to nature. 1996
[19] Forester J. Planning in the Face of Power. Univ of California Press; 1988 Dec 21.
[20] McKenna J, Cooper A. Sacred cows in coastal management: the need for a 'cheap and transitory' model. Area. 2006 Dec;38(4):421-31.
[21] Castells M. Network theory| A network theory of power. International Journal of Communication. 2011 Apr 8:5;15.
[22] Ehler C, Douvere F. Marine Spatial Planning: a step-by-step approach toward ecosystem-based management. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. 2009
[23] Pomeroy R, Douvere F. The engagement of stakeholders in the marine spatial planning process. Marine policy. 2008 Sep 1;32(5):816-22.
[24] Flannery W, Ellis G, Ellis G, Flannery W, Nurse-Bray M, van Tatenhove JP, Kelly C, Coffen-Smout S, Fairgrieve R, Knol M, Jentoft S. Exploring the winners and losers of marine environmental governance/Marine spatial planning: Cui bono?/“More than fishy business”: epistemology, integration, and conflict in marine spatial planning/Marine spatial planning: power and seaping/Surely not all planning is evil?/Marine spatial planning: a Canadian perspective/Marine spatial planning: it is better to be on the train than being hit by it/Reflections from the perspective of recreational anglers .... Planning Theory & Practice. 2016 Jan 2;17(1):121-51.
[25] Satria A. Menuju desentralisasi kelautan.
[26] Yurista AP, Wicaksono DA. Kompatibilitas Rencana Zonasi Wilayah Pesisir dan Pulau-Pulau Kecil (RZWP3K) sebagai Rencana Tata Ruang yang Integratif. Jurnal Rechts Vinding: Media Pembinaan Hukum Nasional. 2017 Aug 31(6):183-98.
[27] BTNKJ. Ringkasan Eksekutif Zonasi Taman Nasional Laut Karimunjawa Tahun 2012. Balai Taman Nasional Karimunjawa. Semarang. 2012
[28] Mujio A. L., Soewardi, K. & Wardiatno, Y.(2016). Analisis potensi konflik pemanfaatan ruang kawasan pesisir: integrasi rencana tata ruang darat dan perairan pesisir. Sodality: Jurnal Sosiologi Pedesaan, Agustus. 2016:139-44.
[29] Ambari. Pemprov Jateng Langgar Undang-Undang dalam Pembaahan Zonasi Pesisir?. 2018. https://www.mongabay.co.id/2018/03/16/pemprov-jateng-langgar-undang-undang-dalam-pembahasan-zonasi-pesisir/
[30] Grantam HS, Agostini VN, Wilson J, Mangubhai S, Hidayat N, Muljadi A, Rotinsulu C, Mongdong M, Beck MW, Possingham HP. A comparison of zoning analyses to inform the planning of a marine protected area network in Raja Ampat, Indonesia. Marine Policy. 2013 Mar 1;38:183-94.
[31] Legacy C. Is there a crisis of participatory planning?. Planning theory. 2017 Nov;16(4):425-42.
[32] Fauzi A. Kebijakan perikanan dan kelautan: isu, sintesis, dan gagasan. Gramedia Pustaka Utama; 2005.
[33] Booher DE, Innes JE. Network power in collaborative planning. Journal of planning education and research. 2002 Mar;21(3):221-36.
[34] Forester, John. Planning in the Face of Power. Univ of California Press, 1988.