
Preface

Dear Author(s), KRIPIK-SciFiMaS participant, esteemed Readers,

First of all, I should like to express my sincere thanks to all of you for participating in the second "Scientific Communication in Fisheries and Marine Sciences" (SciFiMaS) conference, organized by Fisheries and Marine Sciences Faculty - Jenderal Soedirman University in collaboration with the Center for Maritime Biosciences Studies. The venue for which is Java Heritage Hotel Purwokerto, Indonesia.

This abstract book includes all the abstracts of selected papers which are presented at the 2nd KRIPIK-SciFiMaS 2018, 6th-8th May 2018, from our guest speakers, experts speakers and from both type participants in form of oral presentation and speaking poster. All the abstracts published in this issue have been reviewed and accepted by the 2nd Scientific Communication in Fisheries and Marine Sciences (SCiFiMaS) Committee. It was a pleasure for the editorial board to understand that so many research work carried out by leading experts and new scientists in fisheries and marine science field that may be considered, as emerging in the Global partnership for sustainability of aquatic biodiversity and environment.

We are pleased to mention that the event gained significant interest with over 100 National and International speakers from, China, South Korean, Japan, Vietnam, Germany and United States of America. The international participants also come from South Korean, China, Sudan, and New Zealand. There more over than 130 oral presenters 7 poster presentations during 8 panel sessions.

We want to thank the contributors for their diligence in preparing their manuscripts. Modifications in the layout of abstracts received from authors have been made to fit with the publication format of abstract book of 2nd KRIPIK-SciFiMaS 2018.

We are looking forward to meeting you during the 2nd KRIPIK-SciFiMaS 2018!

Dr. Norman Arie Prayogo, M.Si
Chairman

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Foreword

On behalf of Fisheries and Marine Science Faculty, I am thanking all scientists and delegations to attend the 2nd KRIPIK-SciFiMaS 2018. The second International Conference for our newly faculty which is established in 2015.

The 2nd SciFiMas conference 2018 came from the idea of reunification of the vision and commitment of fisheries and marine stakeholders in Indonesia in order to support sustainable development through scientific communication based on the results of basic research, applied and frontier sciences in this field. To reinforce the Indonesian branding, we call this international conference “KRIPIK-SciFiMaS”, which comes from the SciFiMaS translation in bahasa Indonesia (KRIPIK : Komunikasi Riset Ilmiah Perikanan dan Ilmu Kelautan). The theme of KRIPIK-SciFiMaS 2018 is “Global partnership for sustainability of aquatic biodiversity and environment.”

The KRIPIK-SciFiMaS 2018 covers a broad range of topics related to the aquatic resources, aquaculture engineering, biodiversity and bioprospecting, conservation, marine pollution, sea as the world's buffer, social economic aspect of fisheries, coastal community empowerment and environment.

I hope this abstract collection will furnish the participant to follow the conferences. We hope you enjoy 2nd KRIPIK-SciFiMaS 2018.

Finally, I would like to thanks the presenter for their willingness to share their latest research and idea, without them, the conference would not be possible.

Dr. Isdy Sulistyo
Dean of Fisheries and Marine Science Faculty

Meeting Schedule of SciFimaS, May 7-9th, 2018

Java Heritage Hotel, Purwokerto, Indonesia

Time	Monday, May 7th 2018	
18.30-19.00 pm	Registration	
19.00-21.30 pm	Welcome Party and Gala Dinner	
Time	Tuesday, May 8th, 2018	Additional Information
7.30-8.00 am		
8.00-8.30 am	National Anthem "Indonesia Raya" Prayer 1. Report by Chairman 2. Welcoming Speech by the Dean of Fisheries and Marine Science Faculty 3. Opening Remark and Mou by the Rector of Jenderal Soedirman University and Dr. (Hc) Susi Pudjiastut, Minister of Marine Affairs and Fisheries, Republic of Indonesia Opening Ceremony : Traditional dance	
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9.30 -10.20 am	Guest Speakers	
9.30 - 10.00 am	1. M. Zulicar Mochtar, M.Sc Head of Agency for Research and Human Resources, Ministry of Marine Affairs and Fisheries, Republic of Indonesia	
10.00 - 10.20 am	2. Mr.Wahyono The Pioneer of Mangrove Conservation in Segara Anakan Lagoon	
10.20 - 10.30 am	Signing of MOU	Rector

10.30 -12.00 am	Scientist Expert Speakers I	Moderator
10.30 - 11.00 am	1.Prof. Xuelei Zhang (First Institute of Oceanography, Qingdao – China)	Purnama Sukardi, Ph.D
11.00 - 11.30 am	2. Prof. Pierre Doumenq (Aix Marseille University,France)	
11.30 -12.00 am	Discussion	
12.00 -13.00 am	Lunch Break	
13.00 - 13.30 am	Scientist Expert Speakers II	Moderator :
13.00 - 13.30 am	Prof.YasumasaBessho (Nara Institute of Science and Technology – Japan)	Dr. Norman AriePrayogo
13.30- 13.45 am	Discussion	
14.00 – 16.30 am	Scientist Expert Speakers III	Moderator:
	Dr. Nils Moosdorf (Leibniz Centre for Tropical Marine Research/ZMT, Germany)	Mukti Trenggono, S.Kel, MT.
	Visitation for Expert Scientist Speaker :	
	Research Lab, Faculty of Fisheries and Marine Science	Dr rer.nat. Hamdan Syakuri
	Research Lab, Jenderal Soedirman University	
16.30 -17.00 am	Next Step For Publication (Only for Oral Presenter) by Dr. Norman Arie P, M,Si	
19.00 – 21.00 am	Gala Dinner for Guest Speaker and Participant	
Tuesday, May 9th, 2018		
8.00 –8.30 am	Parallel I (See detail parallel section)	
8.30 - 8.45 am	Discussion	
8.45-10.30 am	Parallel II (See detail parallel section)	
10.30 -11.00 am	Closing by Dean Dean of Fisheries and Marine Science Faculty	
11.00 - 17.00 am	Sight around Purwokerto, Baturadden	

Parallel I

Room :Arjuna room

Thursday, May 8th, 2018
Moderator : Dr. Amron
Aquatic resources for national food security
Moderator : Dr. rer.nat Hamdan Syakuri
Aquaculture
Moderator : Dr. Bintang Marhaeni
Biodiversity and bioprospecting for tropical species

Paralel II

Room :Krisna room

Thursday, May 8th, 2018
Moderator : Dr. Endang Hilmi
Integrated management of coastal and marine areas and conservation
Moderator : Dr. F. Eko
Sea as the world's climate buffer
Moderator : Dr. Lilik Kartikasari
Social economic aspect of fisheries
Moderator : Dr. Maria
Coastal community empowerment

Harmonization of regulation in water territorial management becoming a fair economic benefit distribution towards regional autonomy

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Abstract. The extent of Indonesian territorial waters along with its natural wealth inside brings economic benefit, yet on the other side it invites problems. Especially with the existence of regional autonomy, the competition to obtain the economic benefit causes fiercer competition between regions. The competition causes the division emergence of marine areas which implicates towards the fate of fishermen. This relates to their catchment area, imposition of income tax, and technical restriction on fishing. This research used normative approach by emphasizing the comparative study of water territorial arrangement in various regions. Based on the research, in autonomy region which has marine water, they regulate the object very detail and there are some which exploit their area. The detailed and thorough regulation with its practice sometimes cause the territorial waters dispute among the regions. It causes a confusion for the government or fishermen in obtaining the economic benefit of their own water. Hence, in level of regulation, it needs a legal harmonization between autonomy regions in utilization of water territorial. In practical level it often needs coordination to create fair economic benefit for the stakeholders.

1. Introduction

Based on article 18 of the 1945 Constitution of the Republic of Indonesia (1945 constitution), it is emphasized that "The Unitary State of the Republic of Indonesia is divided into provinces and provinces divided into districts and cities, with each province, district and city having local government, which regulated by law". Substantively, Article 18 of the 1945 Constitution also mandates the division concept of power vertically, which is a distribution of power between the National or Central government with other lower government units.^[1] Implementation of government policies on the implementation of governance in the regions, then further elaborated through the concept of autonomy as described in Law No. 23 Year 2014 concerning Regional Governance .

According to the Regional Governance Law, autonomy is implemented to manage Governmental Affairs and the interests of local communities. In relation to the distribution of its affairs, the Regional Governance Law divides Government Affairs consisting of absolute

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governmental affairs, and concurrent government affairs. Absolute governmental affairs fully entrusted by the Central Government. The concurrent governmental affairs is a Government Affair which is divided between the Central Government and the Provincial Region and the Regency/Town Region. Concurrent government affair which is submitted to the region as the basis for the implementation of Regional Autonomy, and then carried out significantly in the area.^[2]

In relation between law and regional autonomy, local government is given the authority to arrange and manage. The arranging authority is implemented through the establishment of Rules and Regulations Regional Heads. The managing authority carried out the peace, order and prosperity for the people of the region, including taking care of the water territory in its area.^[3] Under the Regional Governance Act, the conservation management authority in the territorial waters of a government affairs' choice which resulted in that the fisheries management authority, marine and space arrangement in the territorial waters become the right from the local government.

Observing the settings, and correlating within the context of autonomy, there is authority in the area of exploration, exploitation, conservation and management territorial of waters exist at 4 (four) miles calculated from the baseline area region.^[4] Observing the object of the arrangement, then in the region can manage the territorial of waters for the greatest importance of the local community. But the factual is that the problems that often occur in coastal areas and oceans are conflict of resource utilization and spatial use, which is only seen by the Regional Governance from the economic aspect through the exploitation of water resources, taxes and user charges. The gap between the interests of autonomous functions, water management and economic empowerment of the region has created the precepts chaos in the regional autonomy. Therefore, this paper is going to examine the issue of management arrangements harmonious territorial waters in the vertical and horizontal implications fairly to the existence of regional autonomy.

2. Research methods

The method used is Normative Juridical approach which use law and analytical approach. In order to achieve legal harmonization, the evaluation and analysis of laws and regulations related to the management of territorial waters, either vertically or horizontally are conducted. As for the activity of analyzing regulatory issues concerning territorial waters in regional autonomy, the authors used normative qualitative analysis through grammatical interpretive model and systematic interpretation. The results of the analysis are presented comprehensively, all inclusive and systematic using deductive logic.

3. Discussion

a. Identification and Inventory Management of Territorial Water Regulation

In order to realize Indonesia as a legal state, the Government is obliged to carry out the development of national law which is carried out in a sustainable, planned, integrated and comprehensive manner in a national legal system. Development of sustainable national law is expected to guarantee the protection of the rights and obligations of all Indonesian people to meet the community's need for legislation that protects the community. The efforts made to create legal development is to harmonize the law.

Evaluation and analysis of regulations on the management of the territorial waters are conducted in the framework of regulatory harmonization, or commonly known by synchronizing either vertically or horizontally. Regulatory harmonization efforts are based on the theory of legislative formation. Based on the *stufenbau* theory (general theory of hierarchy of legislation Hans Kelsen), legislation can be grouped generally into 4 (four) levels, namely: First, the provision that contains the basic norm (*grundnorm*) which is Law; Second, the legislative provisions that describe the basic norms that is Law; Third, the provisions established by the government as the implementation rule of Law are the implementing legislation, and Fourth, the organic provisions to operationalize in detail the Implementing Legislation are among others: Presidential Regulation, Ministerial Regulation, and Local Regulation.^[5] As the reinforcement of Hans Kelsen's theory, it is able to be matched with the theory of *Algemeine Rechtslehre* (Hans Nawiasky). Based on Nawiasky theory this legal norm consists of First, *Staatsfundamentalnorm* (State Fundamental Norms); Second, *Staatsgrundgesetz* (Basic Rules/Principles of State); Third, *Formell Gesetz* (Formal Law); Fourth, *Verordnung and Autonome Satzung* (Rules of Execution and Autonomous Rules).^[6]

To create the harmonization, it is necessary to compare the regulations relating to the study object, that is the management of territorial waters which becomes the authority of the region, in the form as follows:

1. Law Number 25 Year 2004 concerning National Development Planning System;
2. Law Number 31 Year 2004 concerning Fisheries as amended by Act Number 45 Year 2009;
3. Law No. 17 Year 2007 concerning the National Long-Term Development Plan of 2005-2025
4. Law Number 26 Year 2007 concerning Spatial Planning;
5. Law Number 27 Year 2007 concerning the Management of Coastal Areas and Small Islands as amended by Law Number 1 Year 2014;
6. Law Number 10 Year 2009 concerning Tourism
7. Law Number 23 Year 2009 concerning Environmental Protection and Management;
8. Law Number 23 Year 2014 concerning Regional Government as amended by Act Number 9 of 2015;
9. Law Number 32 Year 2014 concerning Marine, and
10. Other organic regulations

b. Regulatory Harmonization Efforts

In the context of regional autonomy, the preparation of Regional Regulations shall be used as legal means in the first instance, policy instruments for implementing regional autonomy and assistance tasks; Secondly, as an effort to accommodate the specificity and diversity of the region and channel the aspirations of the people in the regions; and Third, as a tool of development in improving the welfare of the region. Regional Regulation is not merely a regulation of the implementation of the law above it, but more than that as a policy that is able to absorb and accommodate special conditions for regional self-reliance (*zelfstandigheid*) and aspirations of local citizens.

In case of making a regional regulation, the regulations made by the legislators must be based on the principle of establishment of the rules. Broadly speaking, the principle is a general proposition expressed in general terms without suggesting specific ways of its implementation applied to a series of deeds to be a good guide to the action. Principle is a fundamental assumption and consideration that is the basis of social behavior. Thus, the principles of law are not concrete rules of law, but they are the basic or general thoughts which are the background of the "positive law" contained in and in every legal system incarnate in the laws and regulations.

In formulating the rules, there are principles in the formulation of good state regulations (*beginselen van behoorlijke regelgeving*). The principle of the establishment of good legislation is formulated in Law Number 12 Year 2011 concerning the Establishment of Regulations particularly Articles 5 and 6 which define as follows:

1. Clarity of purpose;
2. Appropriate institutional or organizers;
3. Conformity between type and material of charge;
4. Can be implemented;
5. Utility and usability;
6. Clarity of formulation; and
7. Openness.

Meanwhile, the principles that should be contained in the material of Legislation are formulated in Article 6 Paragraph (1) of Law Number 12 Year 2011 concerning the Establishment of Regulations, the content of the Laws and Regulations contains the following principles:

1. Aegis. Any material on the content of legislation should provide the protection to create public peace.
2. Humanity. Any material on the content of legislation should reflect the protection and respect of human rights and the prestige and dignity of every citizen proportionately.
3. Nationality. Any material on the content of legislation should reflect the nature and character of a plural Indonesian nation while maintaining the principle of the Unitary State of the Republic of Indonesia.
4. Kinship. Each content of the statutory matter shall reflect deliberations to reach consensus in any decision-making.
5. Merchandise. Every content of legislation concerns the interests of the entire territory of Indonesia and the material content of legislation made in the region is part of the national legal system based on Pancasila and the 1945 Constitution of the Republic of Indonesia.

6. Bhinneka Tunggal Ika. Any material on the content of legislation should consider the diversity of the population, religion, tribe and class, special conditions of the region and culture in the life of society, nation and state.
7. Justice. Any material on the content of legislation should reflect proportional justice for every citizen.
8. Equal position in law and government. Any material on the content of legislation should not contain things that are distinguishable based on the background, including religion, ethnicity, race, class, gender, or social status.
9. Order and certainty. Any material on the content of legislation should be able to realize order in society through guarantee of legal certainty.
10. Balance, harmony, and harmony. Any material on the content of legislation should reflect balance, harmony, and harmony between individual interests, society and the interests of the nation and state.

Based on the description above, the formation power of special regulation (*regeling*) legislation regenerating has coherence with the authority that encompasses it, in the form of (*attributie van wetgevingsbevoegdheid*) which is the granting of authority to form legislation granted by the Constitution (*grondwet*) or by law (*wet*) to an institution. This attribution of power will create to a new powers. In relation to autonomy, it is affirmed in Article 18 Paragraph (6) of the 1945 Constitution that "Regional Government shall have the right to enact regional regulations and other regulations to implement autonomy and assistance tasks. This provision has given the authority of attribution to the local government to form a law.

Therefore, Regional Regulation is one of law products in which the principles of its formulation, application and enforcement must contain the legal values. It must substantially bind in general and be effective in giving the punishment. According to Lawrence M. Friedmann, Punishment is a way to enforce a norm or a regulation.^[7] Meanwhile, Legal Punishment is the punishments which are lined up and authorized by law. Every legal punishment contains a statement of law consequences which are some punishments, appointments, or threats

In accordance with the explanation above, the formal principles must be related to the material principle as the base of the regulation substance arrangement. Here are the material principles related to the territorial water management object:

1. Principle of maximizing people's interests as it is stated on Article 33 Constitution 1449 that "the land and the water as well as the natural resources inside them are for the people's prosperity as many as possible".
2. Sustainable Development Principle
The effort done before a policy stipulated is conducting the Strategic Environmental Assessment (SEA) in every formulation or evaluating some important documents. They are Regional Spatial Planning with its details, the National, Province, and Regent/City Long-Term Development Plan and Mid-Term Development Plan. In addition, the policy, plan, and program which potentially influence the environment are regulated in Article 15 Law Number. 32 Year 2009.
SEA is basically a mandatory environmental development instrument. It is an obligation that must be obeyed by the policy, plan and program creator. It becomes the base to formulate a development policy, plan or program in regions. It aims to ensure that the sustainable development principle has been a fundamental and integrated to a regional development. This is because SEA consists of assessment like the environment's support and accommodation capacities, the ecosystem service performance, the efficiency of natural resources utilization, the vulnerability level and the adaptation capacity toward the climate change, and the endurance level and potency of the biodiversity. All of them is regulated in Article 15 section (1), Article 17 section (1), and Article 16 Law Number. 32 Year 2009 concerning the Environment Protection and Development.
3. Economy Principle
The water resources utilization and management in regional autonomy is expected to contribute to the increasing of people's prosperity and the locally generated income so that it can actualize the economic independence and justice.
4. Participative Principle
The water resources utilization and management will be well-enforced by all related parties participation.
5. Transparency and Accountability Principle

The water resources utilization and management must pay attention on the accountability and transparency aspects in its enforcement.

6. Integration Principle

The integration principle in the water resources utilization and management is necessary to be conducted by integrating the stakeholders, the planning process, and the enforcement.

Related to the protection of the territorial water management, there are some policies enforced in some regions in order to protect their territorial water:

1. Aceh

In Aceh territorial water, the Laot (sea) Customary Law forbids any tools or activities that can harm the sea ecosystem like bombing, poisoning, anesthetizing, electrocuting, etc.^[8] as well as illegal fishing using forbidden equipment. By a *modus operandi* and motive, the illegal fishing can be categorized as an economic crime. It is obviously regulated in Law Number 31 Year 2004 which was changed into Law Number 45 Year 2009 concerning Fishery. Thus, the illegal fishing is a crime that needs a legal punishment and a specific regulation.^[9]

2. East Nusa Tenggara (NTT)

The Regional Government of NTT released Regional Regulation of NTT Province Number 1 Year 2011 about Spatial Planning of NTT Province which has given law certainty for the coastal areas and the sea allocations as the conservative areas. This regulation has specifically included Sawu Sea into the province spatial pattern as it is stated in Article 25. Some conservative areas have been accommodated in SEA as well. They are Komodo National Park, Pantar Strait Park, Teluk Kupang Marine Nature Park, Teluk Maumere Marine Nature Park, Riung 17 Island Marine Nature Park, etc.^[10] In law perspective, these allocations show the NTT government's intention to support the fishery and marine resources sustainability management efforts.

Based on the comparative example above, it should be emphasized that water resource is renewable. If it is not interfered, life will be naturally balanced. In addition, it will be wasted if we do not make use of it. Yet, if the utilization is not balanced with the restoration, it will be degraded and possibly extinct. Therefore, the balancing concept in the water resources management regulation is a resources utilization based on the natural system and carrying capacity. This function can be used by the government to create good governance in managing economic and social resources for development and society.^[11] Those concept will create a balancing condition between economic and sustainability development aspects by integrating the legal policy in defending the water areas.

4. Conclusion

The regulation formulation must concern on the proper legislation formulation principles as follows: Purpose clarity, proper institution or officer to make the legislation, balanced content type, hierarchy, and materials, applicable, efficiency and usability, formulation clarity, and transparency. These principles are an important guide for the regulation maker to avoid a confusing and multi-interpreted content and to make every legislation is based on the purpose. Beside the principles, other important principles that need to be concerned and included in every legislation content are: Protection, humanity, nationality, kinship, the sense of *nusantara*, *Bhineka Tunggal Ika*, justice, equality before the law and government, law order and certainty, balance, harmony, and integration.

Regional Regulation is a kind of legislations and becomes a part of Pancasila-based National Law System. The content of The Regional Regulation is the whole material in case of regional autonomy and co-administration duty, as well as to accommodate the regional specific condition. Related to the water area management, there should be a necessary effort to synchronize the water area management aspects with the integration principles of sustainability development, maximizing people interest, participative, accountability, and transparency. The condition does not eliminate the economic principle in the exploration, the exploitation, the conservation, and the water resources management, instead, it still concern with the sustainability of the regional assets so someday it can be economically beneficial.

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