

Optimization Implementation of Suspended Peoples Hydrology Policy (KHG) in Riau Province

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Abstract: Peat ecosystem is an element of peat structure which is a whole unified whole that affect each other in forming balance, stability, and productivity, then the Hydrological Unity of Peat (KHG) is a peat ecosystem located between two rivers, between rivers and seas, and / or on the swamp. The function of the Peat Ecosystem is the function of the element of peat that serves to protect water availability, biodiversity conservation, carbon storage of oxygen producers, climate balancing which is divided into protected functions of peat ecosystem and peat ecosystem cultivation function. Riau Province has 59 Hydrological Peat Unity (KHG) with total area of 5.004.727,47 ha, consisting of protected function 2,216,621,84 ha (44,29%) and cultivation function 2,788,105,63 ha (55,71 %). Rapid development has put great pressure on the preservation of the KHG. This research explains how the ongoing Hindu Hindu Policies on Unity (KHG) Policy in Riau Province. This research uses qualitative method, the research result shows that the policy on peat must be supported by all components of the nation and community participation so that there will be disaster risk reduction of forest and land fire.

1 INTRODUCTION

Peat is a naturally occurring organic material of improperly decomposed plant debris with thickness of 50 (fifty) centimeters or more and accumulates in swamp (Regulation of the Minister of Environment and Forestry of the Republic of Indonesia No. P.14 / Menkhh / Setjen / Kum.1 / 2/2017, 9 February 2017, Article 1, paragraph 1). The peat ecosystem is a set of elements of peat that constitute an integral whole that affects each other in shaping its balance, stability, and productivity (Ministry of Environment and Forestry Regulation No. P.14 / Menlhk / Setjen / Kum.1 / 2/2017, 9 February 2017, Article 1, paragraph 2). The Hydrological Peat Unity (KHG) is a Peat Ecosystem located between two rivers, between rivers and seas, and / or on swamps (Regulation of the Minister of Environment and Forestry of the Republic Indonesia Number P.14 / Menlhk / Setjen / Kum.1 / 2/2017, February 9, 2017, Article 1, paragraph 3) The function of the Peat Ecosystem is a function of the element of peat that serves to protect water availability, biodiversity conservation, oxygen, climate balance divided into Protected functions of Peat Ecosystem and Peat

Ecosystem Culture function (Regulation of the Minister of Environment and Forestry of the Republic of Indonesia No. P.14 / Menkhh / Setjen / Kum.1 / 2/2 017, 9 February 2017, Article 1, paragraph 6).

Indonesia's peat forest area is known as one of the countries that has the largest peatland forest in the world. The area of peatland in Indonesia is estimated to be 20.6 million hectares or about 10.8 percent of Indonesia's land area (Subajo, 1998; Wibowo and Suyatno, 1998 in Wetlands International-Indonesia Program (WI-IP), 2004). Indonesia is a country that has the largest peat area among tropical countries, this peatlands are spread in Kalimantan, Sumatra and Papua (BB R & D SDLP, 2008 in Agus and Subiksa, 2008). The WI-IP report states that of the 5.7 million ha or 27.8% of Indonesia's peatland area is found in Kalimantan. The peat phenomenon that occurs in Riau Province negatively impacts the environmental conditions resulting from the management and utilization of peat ecosystem areas that are out of control and irresponsible. For example, forest fires and land that occurred have an impact of smoke haze that hit Riau and Sumatra region.

The occurrence of disasters in the form of smoke haze that hit our country which impacts so great for the environment both in terms of health, economy, and so on did not escape the factors that influence it especially in terms of management and utilization of the peatland. The smoke haze occurring on the island of Sumatra, especially in Riau, Jambi and South Sumatra provinces has resulted in the effects of extraordinary losses, and other parts of Indonesia have begun to show similar conditions, even though the government has not set this critical situation as a national disaster.

2 LITERATURE

To see a policy, it depends on the implementation of the policy itself. Implementation concerning the action of how far the direction has been programmed it is really satisfactory. Finally at the highest abstraction level of implementation as a result there are some measurable changes in the big problems the program aims.

Mileti and Gottschlich (2001) argue that disaster losses are the result of interactions of natural physical processes, social characteristics of population, and environmental conditions built. The characteristic differences of these three systems result in different losses in different natural disasters. In more depth, the research reveals about community mitigation strategies in dealing with land and forest fire disasters.

The paradigm in the concept of disaster management is growing, from a technocratic approach to a disaster risk management approach. This approach is the result of interrelationships of 3 components, hazard assessment, vulnerability analysis, and enhancement of management capacity. Changes in approaches in the disaster management process are also done by switching the top-down system to bottom-up. The community plays an important role in disaster risk reduction in its region (Yodmani, 2001).

Relatively extensive forest fires are caused by the abundance of commonly flammable objects. The type is distinguished on (1) ground fire (2) surface fire (3) crown fire and Causes of Forest and Land Fires in Indonesia are: Natural Factors and Human Factors.

The complexity of peat ecosystems has an impact on the dynamics of its management. There are two variables that indicate the position of peat policy in Indonesia, namely the value of sustainability (Sustainable Value) and development

value (Indrarto, 2015). The discourse that accompanies the current policy, inspired by past experience that has brought Indonesia to the dark point of peat management, in which, finally, the Government issued Government Regulation (PP) no. 71/2014 on Peat Ecosystem Protection and Management (PPEG) considered by many to be a progressive policy towards conservation orientation. Not only until there, the government then revised this PP with PP. 57 of 2016 and issued its derivative regulation, namely PERMENLHK No. 14/2017, 15/2017, 16/2017, 17/2017, and KEPMENLHK no. 129/2017 and 130/2017.

The Hydrological Unity of Peatlands (KHG) is the foundation of the protection and management unit of the peat ecosystem. The complexity of activities in KHG such as industrial timber estates (HTI), oil palm plantations, settlements, infrastructure, etc. are the biggest challenges in implementing this policy, which was built already leads to contestation between the function of protection and cultivation function. The stakeholders certainly have a vital role.

3 RESEARCH METHODS

This research type is qualitative with explorative method This research activity will use two data source, that is primary data that is data obtained directly from field, and secondary data that is data obtained through study of documents from various sources relevant in this activity. Primary data will be obtained through Focus Group Discussion (FGD) in research areas, Observation on perceptions and behaviors, and interviews using questionnaires. The secondary data of this study are research reports, journals, annual reports, evaluation reports, regulatory and legislative documents, minutes of meetings and other relevant documents.

4 RESULT AND DISCUSSION

Riau Province has 59 Hydrological Peat Unity (KHG) with total area of 5.004.727,47 ha, consisting of protected function 2,216,621,84 ha (44,29%) and cultivation function 2,788,105,63 ha (55,71 %). Rapid development has placed considerable pressure on the conservation of the KHG, at least 5% / year of deforestation has occurred in peatlands during the period 2000-2010 (Miettinen et al, 2010), accompanied by land and forest fires

(Kusumaningtyas & Aldrian , 2016) and CO emissions (Husnain et al, 2014). The consequences of this development process must be minimized through a comprehensive and objective joint effort, oriented towards the consistency of the frame of mind and action.

The area of tropical peatlands (swamps and forests) is estimated at about 42 million hectares spread across Indonesia, Malaysia, the Amazon and Central Africa lowlands (Osaki & Tsuji, 2016). This area stores about 148 Gt of carbon. This area is still relatively untouched development and the forest is still relatively virgin. The region of Southeast Asia has about 24, 78 million ha or 56% of the world's peatland. Indonesia has 14.91 million ha of peatlands or 35.5% of the world's peatland (Osaki et al., 2016) spread over Sumatra at 6.44 million ha (43%), Kalimantan 4.78 million ha (32%) , and in Papua 3.69 million ha (25%). While Riau has 4,221,000 ha of peatland (Budi Wardhana, 2016) or 28.31% of the total peat area of Indonesia or about 65.54% of the peat area in Sumatra. The extent of 59 KHG of Riau Province reached 5.004.727, 47 ha (Final Report of RPPEG, 2016), consisting of protected function 2,216,621,84 ha (44.29%) and cultivation function 2,788,105,63 ha (55,71%).

In 2007, Riau's peatlands were only 1,603,008 hectares of 2,280,198 ha in 2002 (Okto Yugo Setiyo et al, 2016). This means that in the period of 5 years, Riau has lost peatland area of 677,190 ha or about 19% with an average loss of 135,438 hectares per year. Of the remaining area, the National Peat Restoration Agency (BRG) has set 938,619 ha as Riau Peat restoration 2016-2020 (Budi Wardhana, 2016). What kind of road map and action plan detail Riau peat restoration no information or data that can

be accessed. While at the central level, the Indonesian Peat Restoration Agency (BRG, without years) has targeted 2 million hectares of peatlands to be targeted for restoration over the next five years (2016-2020) with targeted achievements of 30% (2016), 20% (2017), 20% (2018), and 10% (2020).

In the national peat restoration program's road map, Riau is one of 7 priority provinces of restoration programs other than Jambi, South Sumatra, West Kalimantan, Central Kalimantan, South Kalimantan and Papua. If the ambition of BRG RI becomes a reality, then this effort is the largest peat restoration program in the world (JLIFAD, 2016) To support the action plan, the support of academic research on Riau's comprehensive peat ecosystem is a necessity for the successful implementation of the restoration action plan Riau peat, from the stage: the formulation of policy, implementation process, and evaluation of program impact measurable.

The success of degraded peatland restoration should be based on scientific knowledge, relevant to socioeconomic conditions, and local community engagement (Page et al., 2009). This analysis is intended to provide an overview of the extent to which academic research on Riau's peat ecosystems has been carried out in almost three decades (1989-2017). The descriptive contents analysis used in this literature study focuses on obtaining a description of: 1) research institutes, 2) research sites, and 3) variables or research parameters. The results of this analysis can be given a little contribution to the reinforcement of academic research Riau peatland ecosystem to support the success of Riau peat land restoration program. The following data on Area of Hydrological Unity in Riau Province as follows:

Table 1: Unique hydrology units in the province of Riau

No	Existence	Large (HA)	%
1	In the forest area	3.287.676	64,48
2	Outside the forest area	1.810.857	35,52
Total		5.098.533	100,00
1	Nature Reserve / Nature Conservation / New Park Area	231.690	7,05
2	Protected Forest	31.117	0,95
3	Limited Production Forest	535.233	16,28
4	Permanent Production Forest	1.773.811	53,95
5	Convertible Production Forests	715.824	21,77
Total		3.287.676	100,00

Wide unity of peat hydrology : +5.098.533 Ha (56,42%) of riau land area, spread over 59 groups in 11 districts of the city

Actions that have been undertaken include: establishment of institutional peatland managers at the site level, by (a) Optimizing the role and institutional function of the Peat Restoration Team (b) Establishment of UPT Peat (c) Optimizing UPT Unity of Forest Management (KPH)

All the action is done with the wetting movement (rewetting), done through: Development of artesian drilling well, Construction of channel canal, Supervision of water management (at company), Establishment and Training of KHG Water Management Team. Revegetation Movement, done through: Making of peatland village seedlings, Making crops of peatland villages, Making horticultural seeds, Preparing crops from horticultural crops.

Social Revitalization Movement of Community Economy, Development of fishery business, Development of cattle breeding business, goat, Honey bee development, Peatland ecotourism development, Development of demplot gelam, Cultivation of Plant Life, Utilization and processing of sago pulp, Mangrove Crab cultivation, Sustainable Food, Establishment of Peat Concern Village.

The Brg program in Riau Province in 2017 is carried out by: Construction of 550 Drilling Wells, 830 Units of Canal Construction, Facilitation of Secretariat of Peat Restoration Team (TRGD), Establishment of Peat Concern Village, RREG Preparation, Procurement of Fire Extinguishers, Infrastructure Development, Peat Wetting, Revegetation, Economic Revitalization, Preparation of SID and DED Infrastructure Wetting Peat, Development of Technical Capacity of Village Communities.

The Peat Restoration Program in Riau Province includes: (1) water management/ management in peatlands in accordance with government regulation no. (3) rehabilitation and reforestation in 2015 (158,531 ha) (3) reorganization of the utilization of peatlands according to their function (eg, 4) increasing public awareness of sustainable peat management (5) law enforcement of forest encroachment on peatland (6) new moratorium on clearing or peatland clearing.

5 CONCLUSIONS

This peatland restoration program should continue to be implemented in accordance with its achievement targets for all priority areas throughout Indonesia and not just a pilot project by a handful of interests.

As an important role-playing implementer, the Agency for the Restoration of Peatlands (BRG) should be more coordinated to the local government, since the regional government other than owning the territory also has the authority. For the restoration program in Tebing Tinggi Timur sub-district, especially Sungai Tohor Village, it is expected to be improved not only to focus on the development of channel canals only, and expanded cooperation to the stakeholders so that the restoration program will reach its destination until 2020.

In implementing this peatland restoration program, there are certainly factors that influence it, both in terms of positive and negative, therefore the conceptualization must be clear, the emphasis of strategy and coordination must also be clear in order to create a good cooperation for the realization of peat restoration that sustainable to prevent forest and land fires.

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