

Institutional Obstacles on the Development of Forest Management Unit: The Case of Indonesian Tasik Besar Serkap

Eno Suwarno^{1,*}, Hariadi Kartodihardjo², Lala M Kolopaking³, Sudarsono Soedomo²

¹Graduate School of Bogor Agricultural University, Dramaga Main Road, IPB Dramaga Campus, Bogor, Indonesia

²Department of Forest Management, Faculty of Forestry, Bogor Agricultural University, Academic Ring Road, Campus IPB Dramaga, Bogor, Indonesia

³Department of Communication of Rural and Agricultural Development, Faculty of Human Ecology, Bogor Agricultural University, Academic Ring Road, IPB Dramaga Campus, Bogor, Indonesia

*Corresponding author: enosuwarno2009@gmail.com

Received April 30, 2014; Revised May 22, 2014; Accepted June 17, 2014

Abstract Three years since its establishment in 2010, the forest management unit (Kesatuan Pengelolaan Hutan, KPH)-Tasik Besar Serkap (KPH-TBS) in Riau Province–Indonesia has not been operated yet due to institutional problem. Therefore, the review on the institutional handicap is necessary. This study uses the Ostrom’s Institutional Analysis and Development (IAD) Framework to analyze the policy implementation of KPH-TBS development. Analysis was conducted to describe the conditions of exogenous factors and the action arena that obstructing the policy implementation by Riau provincial government (RPG). Conceptually, the policy of KPHs development is institutional changing processes, which are changes in the value system and forest governance. The research found problems that became disincentives on biophysical conditions, such as problems on paradigm, forestry bureaucracy culture and several weaknesses in the rules in use. In addition, structural approach and physical assistance were mostly used by national government for its provincial government. In contrast, knowledge dissemination, communication and mutual trust building were still limitedly used. Former approaches do not address the needs of RPG for information and understanding regarding to the development of KPH. RPG responded to this situation slowly and lack of willingness to cooperate. They took the policy of KPHs development as a mere obligation, and did not get motivated to move by themselves. In addition, the reluctance to cooperate was also caused by the presence of conflict of interest in several government officials. Based on this research, national government need to changes the way of thinking that regulation is not the only instrument to guide the behavior of local participants. Although still needs to be repaired, it must be accompanied by improving of knowledge dissemination, communication and mutual trust building. These actions are highly required not only for resistance solution, but also for controlling the paradigms transformation process and cultur of local participants in line with composed new values in the KPH concept.

Keywords: IAD framework, Kesatuan Pengelolaan Hutan, Riau provincial government, forestry, policy implementation.

Cite This Article: Eno Suwarno, Hariadi Kartodihardjo, Lala M Kolopaking, and Sudarsono Soedomo, “Institutional Obstacles on the Development of Forest Management Unit: The Case of Indonesian Tasik Besar Serkap.” *American Journal of Environmental Protection*, vol. 2, no. 2 (2014): 41-50. doi: 10.12691/env-2-2-3.

1. Introduction

From the point of view of forest management science perspective, main cause of Indonesian forest degradation particularly in outside of Java Island is the lack of organization management at site level. This situation affects state owned forests become ‘open access’ natural resurces. Illegal logging and forest encroachment produce deforestation and forest degradation. According to Nababan, this ‘open access’ condition is a result of weak forest management conducted by central and local governments and business license holders. These three parties at the past time and even now have more wood

commodity exploitation rather than forest area oriented management [1].

In line with the rising of social movement requested political reformation in 1998, forestry sector has changed its Forestry Law (FL). Law foundation of forest administration in Indonesia has shifted from FL No. 5/1967 to FL No. 41/1999. One of the important substances from FL No. 41/1999 is a mandate to government for establishing KPH at the whole state forest areas. The existence of KPH is viewed as a requirement for Sustainable Forest Management (SFM).

At the moment and up to the issued of FL in 1999, KPH is only operated in Java island, namely at state forest area

managed by Perum Pehutani (around 2,448,043.4 ha, or approximately 1,6% from the total state forest area of 127 million ha). This forest management is the continuation of management done by Dutch colonial government. The rest of state forest (124.5 million ha or 98.4%) has not formed KPHs yet and located in outside of Java, except the forest conservation (22 million or 17%) have been managed by National Park Institutes (BTN) and Natural Resource Conservation Institutes (BKSDA).

Although policy on KPH development have been ordered through FL No. 41/1999, the KPH establishment is conducted for the last five year, particularly since the issuing of Government Regulation (GR) No. 6/2007 jo GR No. 3/2008 regarding Forest division, the formulation of forest management plan, and forest utilization [2]. The Government has planned the establishment of 600 KPH units at national level where its establishment is done in several phases starting from 2009 to 2020. Up to the end of 2014, the 120 KPH units would operate.

Bases on GR No. 38/2007, forest protection (HL) and forest production (HP) management would be transferred to local governments with an obligation of protected and production KPH (KPHL/KPHP) establishment. The implementation of its obligation is not running well due to several handicaps. Kartodihardjo [3] pointed out that there is still misperception about KPH, uncompleted its regulations, lack of human resource, lack of political supports and lack of resources needed to support the KPH development. Based on the research in 2013 done by Kartodihardjo and Suwarno [2] stated that several heads of districts or head of district forest services have not fully accepted the presence of KPH. In general, this statement is caused by the existing perception that KPH would reduce role forestry service and as cost center for local economy. Up to now, these handicaps remain unsolved and still exist.

One of the KPH with slow development phase is KPH-Tasik Besar Serkap (KPH-TBS) in Riau Province. Area of KPH-TBS was determined by Forestry Minister Decree (FMD) No. 509/Menhut-II/2010 dated on 21 September 2010, and then its organization structure was set up through Governor Regulation (Peraturan Gubernur-Pergub) Riau No. 47/2011 dated on 31 Oktober 2011. Since the last two year after issuing the Pergub, Riau Province Government has not filled the organization structure with required personnel. This affect the organization of KPH-TBS cannot operate. Refer to Ostrom [4], the late of personnel appointment basically is an outcome from an interaction process among its participants in the action arena of implementation of KPH development policy.

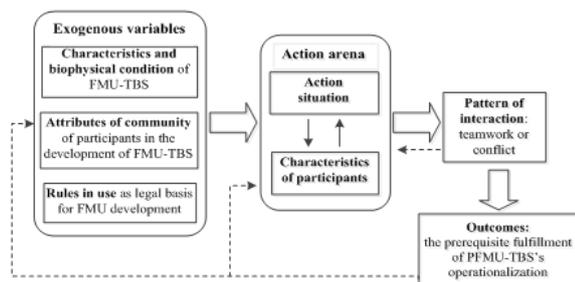


Figure 1. Research framework

The research aims to describe condition of action arena that causes the late operation of KPH-TBS organization. This description involves: (1) effect of bio-physical,

community attributes and rule in use on action arena; (2) structure of action situation and characteristics of participants in the action arena; and (3) interaction pattern formed among participants, especially between central government and Riau province government participants. Referring to the Ostrom's IAD, the framework of this research is presented in Figure 1.

1.1. KPH in Indonesia

Based on the FL No. 41/1999, Forest management unit (KPH) is an area unity of smallest forest management unit in accordance with its main function and its utilization that can be managed efficiently and a sustainable manner. However, Castaneda [5] define a forest management unit is a well defined and demarcated land area, predominantly covered by forests, managed on a long-term basis and having a set of clear objectives specified in a forest management plan. In this case, KPH is a forest management strategy with the dividing of forest land area into management area units based on certain criteria. Total area of one KPH unit is around 5,000 ha – 700,000 ha [see [6]]. The determination of KPH area unit depends mainly on total and distribution of the existing forest area at each province and district in Indonesia—KPH includes conservation (KPHK), protection KPH (KPHL), and production KPH (KPHP). KPHK is forest management unit that its total areas dominated by conservation forest area. KPHL is forest management unit that its total areas dominated by protection forest area. KPHP is forest management unit that its total areas dominated by production forest area.

All state forest in Indonesia would be fully divided into KPH areas. A half of 127 million ha of state forest area does not manage intensively. The intensive management has been carried out in the most production forests in from of business license of wood product utilization (Ijin Usaha Pemanfaatan Hasil Hutan Kayu-IUPHHK) [2]. This condition becomes one of push forces for immediate implementation of KPH establishment.

Procedures for KPH unit establishment are regulated in FMD No. P.6/Menhut-II/2009 regarding the KPH Unit Establishment. Based on this FMD the establishment of KPH is done into four phases. Phase 1, proposal of KPH design engineering by Provincial Forestry Service. Phase 2, direction of KPH area allocation by the Ministry of Forestry (MoF). Phase 3, proposal of KPH determination from Provincial Forestry Service. Final phase, the MoF determine the KPH area.

After determination of KPH area, it should immediately follow up with the determining of organization which would manage KPH. KPH would be managed by an government organization that carry out the forest management function in site level. Based on GR No. 6/2007 jo GR No. 3/2008, KPHK organization would be determined by MoF, meanwhile Minister of Internal Affair Regulation (MIAR) No. 61/2010 stated that KPHL and KPHP management organization would be formed and determined by local government. The establishment of KPHL and KPHP that its working area is beyond district area in one province would be determined by the provincial local regulation. The establishment of KPH and KPHP that its working area is located in in one district would be determined by the district local regulation.

Based on GR No. 6/2007 jo GR No. 3/2008, and detailed implementation in FMD No. P.6/ 2010 regarding Norm, Standard, Procedure and Criteria of Forest Management in KPHL and KPHP, main tasks of KPH organization as follows:

1. To carry out the forest division and boundary lines in KPH area
2. To formulate forest management plan at KPH area level, including a development plan of KPH organization
3. To apply development, monitoring and evaluation of forest management performance that carry out by license holders of forest utilization and forest area use, including in forest rehabilitation and reclamation, and forest protection and natural conservation
4. To conduct forest rehabilitation and reclamation.
5. To apply forest protection and natural conservation.
6. To carry out forest management in the certain area (no any license issue in the area) for KPH that already apply financial management pattern through public service agency (BLU) or local public service agency (BLUD).
7. To implement forest policy into innovation and operation of forest management.
8. To strengthen law enforcement on forestry sector including forest area protection and security.
9. To develop investment for supporting the achievement of SFM goal.

Implementation of main task and function of KPH lies on the applying of forest management in site or field level, meanwhile the main task and function of forestry service in the forest administration field.

1.2. Theoretical framework

In this paper we use definition of institution from Ostrom [4]. She define an institution as a widely understood rule, norm, or strategy that creates incentives for behavior in repetitive situations. Institutions may be formally described in the form of a law, policy, or procedure, or they may emerge informally as norms, standard operating practices, or habits. Individuals interacting within rule-structured situations face choices regarding the actions and strategies they take, leading to consequences for themselves and for others [4].

One challenge for institutionally-oriented policy analysis is complexity. Few policy situations are simple. Most involve knowledge from many different perspectives, activities are organized at multiple levels, and any given policy situation overlaps with other policy situations so that activities in one situation affect activities in another. One of the reasons for developing the IAD framework was to provide a common basis for integrating diverse policy elements and the work of diverse policy analysts. The IAD framework helps analysts comprehend complex social situations and break them down into manageable sets of practical activities. When applied rigorously to policy analysis and design, analysts and other interested participants have a better chance of avoiding the oversights and simplifications that lead to policy failures [7].

Figure 2 provides a schematic representation of the IAD framework. The focus of the institutionally-oriented policy analysis is on behavior in the action arena, which includes the action situation, and individuals and groups who are routinely involved in the situation (actors). One objective of the analysis is to identify factors in each of three areas

that influence the behavior of individuals and groups in the policy situation: physical and material conditions, community attributes (culture), and rules-in-use. Two other objectives are to identify and evaluate patterns of interactions that are logically associated with behavior in the action arena, and outcomes from these interactions [7].

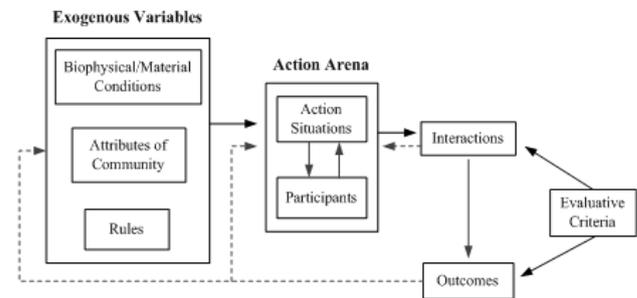


Figure 2. A framework for institutional analysis [4]

Action arenas include two holons: an *action situation* and the *participant* in that situation. An action situation can, in turn, be characterized using seven clusters of variables: (1) participants (who may be either single individuals or corporate actors), (2) positions, (3) potential outcomes, (4) action-outcome linkages, (5) the control that participants exercise, (6) types of information generated, and (7) the costs and benefits assigned to actions and outcomes. Thus, an action situation refers to the social space where participants with diverse preferences interact, exchange goods and services, solve problems, dominate one another, or fight. To predict how actors will behave, the analyst must make assumptions about four clusters of variables: (1) the preference evaluations that actors assign to potential actions and outcomes; (2) the way actors acquire, process, retain, and use knowledge contingencies and information; (3) the selection criteria actors use for deciding upon a particular course of action; and (4) the resources that an actor brings to a situation. The actor in a situation can be thought of as a single individual or as a group functioning as a corporate actor [3,8].

There are two ways to approach institutionally-oriented policy analysis. The first approach involves using the framework as a diagnostic tool and working backwards through the flow diagram to re-affirm or revise policy objectives, evaluate policy outcomes, understand the information and incentive structure of a policy, or develop reform initiatives. This approach is best suited to analyzing well-established policy situations. We begin by isolating a specific policy issue or program, and specifying its objectives. We then observe some facts about outcomes of activity in the policy arena. A second approach to defining a policy issue or objective and applying the IAD framework involves specifying a political-economic activity and then working forward rather than backward through the framework. So, for example, we might investigate infant health care. We would begin by describing the physical and material attributes of infant care, and proceed through community attributes, rules-in-use, a detailed analysis of the action arena, patterns of interaction, and outcomes. This approach is best suited to policy tasks that involve developing new policy initiatives, or comparing alternative policy designs [7].

1.2.1. Rules

In this paper rules can be thought of as the set of instructions for creating an action situation in a particular environment. Rules combine to build the structure of an action situation. Rules, in the instruction sense, can be thought of as the strategies adopted by participants within ongoing situations. Thus, when we do a deeper institutional analysis, we attempt first to understand the working rules that individuals use in making decisions. Working rules are the set of rules to which participants would make reference if asked to explain and justify their actions to fellow participants. While following a rule may become a “social habit,” it is possible to make participants consciously aware of the rules they use to order their relationships. Individuals can consciously decide to adopt a different rule and change their behavior to conform to such a decision. It is the task of an institutional analyst to dig under surface behavior to obtain a good understanding of what rules participants in a situation are following [4].

1.2.2. Biophysical and Material Conditions

Considerable academic literature has focused on the effect of attributes of goods on the results obtained within action situations. Two attributes that are frequently used to distinguish among four basic goods and services: exclusion and subtractability of use. Exclusion relates to the difficulty of restricting those who benefit from the provision of a good or a service. Subtractability refers to the extent to which one individual’s use subtracts from the availability of a good or service for consumption by others. Both of these two attributes can range from low to high. When these attributes are dichotomized and arrayed as shown in Table 1, they can be used as the defining attributes of four basic types of goods: toll goods (sometimes referred to as club goods), private goods, public goods, and common-pool resources [4].

Table 1. Four basic types of goods

	Subtractability of use		
		Low	High
		Difficulty of excluding potential beneficiaries	Low
		Toll goods	Private goods
	High	Public goods	Common-pool resources

Goods that are generally considered to be “public goods” yield nonsubtractive benefits that can be enjoyed jointly by many people who are hard to exclude from obtaining these benefits. Common-pool resources yield benefits where beneficiaries are hard to exclude but each person’s use of a resource system subtracts units of that resource from a finite total amount available for harvesting. When it is costly to exclude or to limit individuals from enjoying benefits from an investment, profit-seeking entrepreneurs, who must recoup their investments through quid pro quo exchanges, have few incentives to provide such services on their own initiative. In addition to exclusion and subtractability, the structure of action situations is also affected by a diversity of other attributes that affect how rules combine with physical and material conditions to generate positive or negative incentives. The number of attributes that may affect the structure of a situation is extraordinarily large [4].

1.2.3. Attributes of the Community

The attributes of a community that are important in affecting action arenas include: the values of behavior generally accepted in the community; the level of common understanding that potential participants share (or do not share) about the structure of particular types of action arenas; the extent of homogeneity in the preferences of those living in a community; the size and composition of the relevant community; and the extent of inequality of basic assets among those affected. The term *culture* is frequently applied to the values shared within a community. Culture affects the mental models that participants in a situation may share [4].

2. Methods

This research was conducted from March 2012 to August 2013. Qualitative research techniques were employed to collect the data. Based on IAD-Framework, the variables were analyzed include influence of exogenous factor (biophysical conditions KPH-TBS, community attributes, and rules in use), conditions of action arena (action situation and participant characteristics), and pattern of interactions.

To gain understanding on working institution, contents analysis was conducted on a number of law and regulations related to the development of KPH. Interpretation and implementation of the institution rules were analyzed based on opinion and behavior of participants using semi-structured interview [9]. A total of 22 participants were interviewed which consist of representatives from Riau Provincial Forestry Service (RPFS), Ministry of Forestry, academics, institutional donor, companies, and community leaders. In addition, relevant secondary data were collected from hardcopy documents and the internet. Considering the KPH-TBS participants location, this research was conducted in Jakarta, Bogor and Riau, Indonesia. Data collection method and source of data were synchronized with research objectives, as shown in Table 2.

3. Results and Discussion

In this section we follow the second approach institutional-oriented policy analysis [see [7]]. We begin by describing the influence of exogenous factors, and proceed through a detail analysis of action arena, patterns of interaction, and outcomes. Based on the analysis, it could eventually make conclusions.

3.1. The Influence of Exogenous Factors

According to Ostrom [4], participant’s decision-making and action selection in the action arena are strongly affected by exogenous factors. Continuously, participant’s dynamics generate interactions that produce outcomes. These exogenous factors consist of biophysical conditions, community attributes, and rules in use.

3.1.1. The Influence of Biophysical Conditions

Based on interviews, literature identification and legislation analysis, there are three important groups of biophysical attributes for the implementation of KPH-TBS, namely the nature of forest resource institutions, the

availability of forest concessions, and equipment of KPH organization.

The basic type of good

A Common-Pool Resource (CPRs)—such as a lake, an ocean, an irrigation system, a fishing ground, a forest, the internet, or the stratosphere, is a natural or man-made resource from which it is difficult to exclude users once the resource is provided by nature or produced by humans. One person's consumption of resource units, such as water, fish, or trees, removes those units from what is available to others. Thus, the trees or fish harvested by one user are no longer available for others. These characteristics may be

caused by the size of the resource itself. For example, in most forests, its area size causes intrinsic problems in limiting access to free riders [4].

The KPH-TBS has a very wide area, which was 513,276 ha. The condition of the land was dominated by peat swamp forests ($\pm 90\%$), which susceptible to fires [10]. As a consequence for this biophysical characteristics, forest management and its surveillance from illegal logging, land encroachment, firing and others were harder. In this context, the Head of Riau Provincial Forest Service (HRPFS) revealed:

Table 2. Data collection and analysis, and data source

Objective	Analyzed Variable	Data collection and analysis	Data source
Influence of exogenous factor			
A	Biophysical conditions of KPH-TBS	Item institutional properties; Availability of forest concessions; KPH organization structural completeness	Collecting from documents, interview (Descriptive)
B	Community attributes	The compatibility of policy values and forestry bureaucracy culture; Level of common understanding for the policy; Homogeneity of preferences on policy strategy.	Document of KPH-TBS's plan Informer: Riau prov. Forestry Service (5 persons)
C	Rules in use	Position rules; Boundary rules; Authority rules; Aggregation rules; Information rules; Scope rules; Payoff rules	Interview (Descriptive)
Conditions of action arena			
A	Action Situation	Participant; Position and role; Task and authority; Control; Information; Cost-benefit; Potential outcomes	Collecting regulation, interview (Content analysis)
B	Participant characteristics	Possession of resources; Contribution; Ability to process information; Preferences; Selection criteria	Interview (Descriptive)
Pattern of Interaction		Assosiative or non-assosiative	Website of Ministry of Forestry Informer from Riau prov.: Forestry Service (5 persons)

"...areas to be covered were very vast, which cannot be secured by only a car. We were told to fix the problem... .take example, lots of problems with the national Technical Implementation Unit (Unit Pelaksana Teknis, UPT) (about Tesso Nilo National Park), but they blamed locals for many occupations (forest encroachment). That's not our fault, it's your job. So I said, national policy didn't see the local field reality."

The statement indicates his expectation that institutional arrangements should be appropriate to the local context [11], or to the local condition [12]. Andersson and Ostrom [13] stated when policymakers create generalized rule systems that may not fit the local context well, the incentives of local government to manage resources responsibly are considerably weakened. They suggest that the key to effective governance arrangements lies in the relationships among actors who have a stake in the governance of the resource.

The availability of forest concessions

The KPH-TBS forest areas were entirely production forest. At this time (2013), there were 20 forest concessions units, which consisted of 17 licenses for industrial forest plantation, 1 license for forest concessionaire, 1 license for ecosystem restoration and 1 license for village forest [10]. For natural resources management, the relationship between government officials and private companies are often characterized by

corruption practices [14], especially in forest concessions [15]. In fact, three former regent and three former HRPFS in Riau province have been jailed for corruption. The growth of corruption practices may obstruct the development of KPH. With the development of KPH, some of the authority and services tasks of the Provincial Forestry Service to companies were transferred to KPH organization. For some of RPFs personnel, this adjustment may generate conflict of interest (Can be identified from their statement: "... after KPH, what is next for us?").

Equipment and financial requirement for KPH organization

MIAR No. 61/2010 regulated that the Protected KPH and Production KPH are local or provincial organizations. National and Provincial Government were responsible for the development of KPH and its infrastructure. Furthermore, the KPH organization must be filled by qualified personnel, which is regulated in the FMD No. 42/2011. As provincial organizations, most of KPH infrastructure, operating expenses and the fulfillment of human resources should be provided by the local government. These obligations were rated as burdensome, as reflected in the statement of HRPFS:

"... I am not trying to play down the national assistance. Initially, for example, 800 million rupiah building, plus a car and three motorcycles were given for Riau. What does

that mean? Facilities are temporary. The hard thing is the operational (after the facility assistances). Consequently, local government should take the responsibility for the future."

3.1.2. The effect of community attributes

In this study, we apply the Wenger's "community of practice" concept that defined as groups of people who share a concern or a set of problems by interacting on an ongoing basis [16] and by the practice they perform [17]. Its member are all participants involved in the development KPH-TBS. Referring to Ostrom [4], three community attributes were selected in this study, namely the conformity of policy values and forestry bureaucracy culture, the level of common understanding of KPH policy, and homogeneity of preferences on policy strategies.

The conformity of policy values and forestry bureaucracy culture

Conceptually, as mentioned in the introduction, KPH policy is an institutional change processes, which convey fundamental change in the way of thinking, value system and Indonesian forest management culture. Decision making on institutional choice is heavily dependent on the mental models the various actors use [18]. KPH will change the pivot role of forest bureaucrats from administrator into managers and improve the transparency and accountability of forest governance. On the other hand, most of the forestry bureaucrats still hold the old paradigm and culture, which focused on timber extraction and timber management [19,20]. Forest management was given to businessman, while government positioning themselves as forest administrators.

Although wood extraction produces financial sources for national development, it also prone to corruption practices in its management [see [15]]. Related to the culture of corruption, Cheung [21] explained that the public administration system values in most Asian countries (by specifically mentioning Indonesia) were inherited from colonial government system. The system was characterized by strong state bureaucracy and intimate relationship with business world, based on patronage pattern and institutionalized corruption, low salaries, and loose rules in taking illegal ways to earn additional income. By the establishment of KPH organization, forest officials who still hold the old paradigm and culture tend to be resistant. This resistance was caused by sense of fear of losing revenue and by the reduction of control of decision-making, resources and information [see [22]].

The level of common understanding of KPH policy

Establishment of common understanding between participants is strongly influenced by the occurrence or non-occurrence of the sharing ways of thinking, ways of doing things, knowledge, goals, and beliefs [3,23]. In his research, Lee [24] found evidence that common understanding was more influenced by the presence of shared beliefs than by knowledge or other shared things. Based on that "characteristics of common understanding", it can be stated that the level of understanding between national government and RPG was still inadequate to face the KPH policy. This situation can be viewed from the statement of HRPFS as follows:

"....I am worried that this is just a scenario. Forming this institution (KPH), seen to give greater authority, but

in practice it is just throwing responsibility to the province."

Ostrom [4] emphasized the importance of communication to build common understanding. By communication, participants may know each other and determine whether trust is sufficiently established thus they can run the action. It was strongly influenced by the trusted behavior of each participant.

The homogeneity of preferences on policy strategies.

Ostrom [4] explained that several behavior of participant is influenced by their preferences. In the same situation, participants might have different preferences on strategy and the expected impact, which can inhibit cooperation. This kind of situation occurred between RPG and national government.

Participant preferences on KPH policy can be seen from their evaluation of two different aspects, "KPH concept" and "KPH policy implementation strategy". To the first aspect, RPG and national government have the same preferences; come to an agreement on the necessity for forest management units at the site level (KPH) (RPG states: "The establishment of the KPH has been mandated by law. Then, as implementation the KPH units must be established. From this point of view, it is considered by Riau". While national government stated: "Yes, to be honest, as 'conception', we have no problems, indeed."). While to the second aspect, the two sides have different preferences. RPG prefers that the national government should first prepare and fix all the necessary regulations to support the KPH operation. There were many things to be improved from current regulation (see Table 3) (HRPFS states: "... So many things need to be fixed. Some people said that the establishment of KPH is more important. Ooh, I do not want it!" (The statement aims to explain that local government urge the central government to improve its regulations first before ask them to establish KPH)). The existence of differences in expectations and attitudes toward risk leads to differences in preferences [25]. National government was aware of these weaknesses, particularly in the aspect of authority, but they preferred that regulations were improved gradually while local government continuing the development and operationalization of the KPH (Government participant stated: "... if my friends in local area immediately shot to the point 'that we have no authority', that's true, but the question is what kind of authority? How fixed is your KPH? So don't question that (authority), but let us fix this (KPH readiness) first.").

3.1.3. Rules in Use

Rules in use or working rules are the set of rules to which participants would make reference if asked to explain and justify their actions to fellow participants [4]. Ostrom and Crawford classify these rules into seven different types: position rule, membership rules, authority rules, aggregation rules, information rules, scope rules, and payoff rules [26]. In this study, analysis was conducted on GR No. 6/2007 Jo GR No. 3/2008 on Forest Management and the Development Plans for the Usage and Management of Forests; the MIAR No. 61/2010 on Guidelines of KPH Organization for Local Governments and GR No. 41/2007 on Organizational Structure of Local Government. These rules are currently used as the basis for the establishment of KPH organizations in Indonesia.

Weaknesses and regulations mismatch are shown in column 1 of Table 3. The rules arrangement affected action situations faced by participants shown in column 3. These weaknesses became one of the reasons that obstructing the operationalization of KPH-TBS.

3.2. Action Arena

Action arena consists of two components, action situation and participants [3,28]. Action situation and participants comprise of seven and five variables, respectively. Data obtained from rules analysis, identification and observation on the development process are shown in Table 4 and Table 5.

Table 3. Analysis of KPH regulations by Ostrom's rules concept

Ostrom's rules concept	Findings	Impacts
Position rules (Rules on number and type of position, number of member in each position, each position's roles, and mechanisms of succession)	There're no particular regulation about position for potential participant, which can contribute on the development of KPH (e.g.: universities, NGOs, and related communities). The role of the Minister of Internal Affairs as general chairman of KPH (KPHL/KPHP) organization has not been optimal.	To develop the KPH is a big task. If related resources were not involved, the difficulties will be held only by the MoF. The low intensity of education for provincial government by the MoF creates attitude that delaying the development of KPH.
Boundary rules (Rules on memberships in and out for each position, consist of prerequisites and mechanisms)	Membership was not regulated on all three analyzed regulations, but on other regulations. For example, Law No. 32/2004 for provincial governor and parliament.	Considering that KPH as a new concept and new institution, there were "understanding gap" between participants and low membership teamwork.
Choice rules (Rules on legitimate action/authority for participants in each position)	The GR No. 6/2007 Jo GR No. 3/2008 was in conflict with the MIAR No. 61/2010. In the government regulation, the authority for KPH organization is in the hand of the Minister, whereas in MIAR, the authority is in Provincial Regulation (Perda).	Generating confusions and law uncertainty for the locals to implement the rules.
Aggregation rules (Rules on mechanisms for the transformation of decision making for group/organization decision)	In the three rules analyzed, there were no aggregation rules.	In the absent of aggregation rules, disagreement between participants, will create stagnation in decision making.
Information rules (Rules on information's types, supplies and access, and also on socialization and communication)	There were no information rules on the three rules analyzed. Information was regulated in UU 14/2008 on public information openness, and the implementation by GR No. 61/2010, and the MoFR No. P.02/2010 on Forestry Information System.	Not generating negative implications for the development of KPH, since the rules on information are aligned with the development of KPH.
Scope rules (Regulate the conditions of the <i>state variables</i> that must (obligatory), must not (forbidden), and can (allowed) influenced as a outcome for action in action situation)	According to the regulation of the MIAR No. 61/2010, the KPHs are in the form of Provincial Working Unit (Satuan Kerja Perangkat Daerah, SKPD). Up to September 2013, out of 84 units, 76 are in the form of Provincial Technical Implementation Unit (Unit Pelaksana Teknis Daerah, UPTD) and 8 SKPDs. [27] There were no clear criteria for KPH categorization into type A and B, and the eselonization of the officials of KPH organization was too low.	Rules were made without clear understanding on provincial condition, readiness and hopes. Thus, it's hardly implemented. Even if the rules were implemented, it is just for administrative, not substantive purpose.
Payoff rules (Rules on net cost and benefit, including incentives and sanction for each participant)	The GR No. 6/2007 Jo GR No. 3/2008 and the MIAR No. 61/2010 only regulate the financial support on KPH, and have not regulate the benefit and incentives.	Generating negative perception in Provincial government. They viewed the KPH development as burdening the provincial budget. As a result, they hardly support and develop the KPH.

Table 4. Action situation of KPH-TBS establishment and operationalization

Participants	Position	Type of action	Control power	Information availability	Cost-benefit	Potential outcomes
National:						
Ministry of Forestry	Responsible and technical chairman	→ Create regulation	The MoF has relatively high control power in directing agendas for national participants. Relatively weak when facing the policy maker in local level. The HRPFS and the Governor have relatively high control power for provincial participants.	Informations about KPH are already available in 2-3 books and website from the MoF. In other words, still in the level of accumulation into more appropriate level. The information coverage was still in a very limited level.	At the national level: the availability and budget access (APBN and other financial support) to develop the KPH is adequate. Short term benefit to fulfill the Key Performance Indicator, long term to create sustainable forest and prosper community. The benefits are unclear for provincial, whereas the hard responsibilities are very clear.	Three possibilities exists: Provincial Government (PG) accept with full responsibility, thus the fulfillment of the prerequisites for KPH operationalization are relatively smooth. PG accept halfheartedly, thus the fulfillment of the prerequisites for KPH operationalization are relatively difficult, locals are very dependent for national initiatives and supports. PG fully refuses the program, thus the fulfillment of the prerequisites for KPH operationalization are not moving.
Ministry of Internal Affairs	Chairman of Organization	→ Arrange the operational plan				
Academics	Expert	→ Socialization				
Donor (GIZ)	Funding	→ Facilitation				
Bappenas	Policy Supporter	→ Training				
Provincial:						
Governor	Decision maker	→ Decision making (executive)				
Provincial Parliament	Decision maker	→ Decision making (legislative)				
Head of Provincial Forestry Service	Advice provider on decision	→ Decision preparation				
Officials of Provincial Forestry Service	Bureaucracy officials	→ Arrange KPH planning				
Academics	Expert	→ Facilitation				
NGO	Facilitator	→ Facilitation				
Companies	Forum member	→ Provide support or rejection				
Community	Forum member	→ Provide support or rejection				

Note: National Development Planning Agency (*Badan Perencanaan Pembangunan Nasional*, Bappenas)

Table 5. Characteristic of participants

Participants	Resources/ influence	Liveliness	Preference to KPH policy strategy	Ability to process information	Selection criteria
National:					
Ministry of Forestry	+++	+++	National gov. prefer "incremental process", in parallel with gradual steps to revise and improve the regulations.	The availability of information on the development of KPH as explained in Table 2, column 5.	National: Rules Work plan Knowledge
Ministry of Internal Affairs	++	+			
Academics	++	+++			
Donor (GIZ)	++	+++			
Bappenas	++	+++			
Provincial:					
Governor	+++	++	Riau Provincial participants were divided into three different groups: Demand that the regulations on authority delegation, legalization and payoff to be fixed (1,2,3); Support the "incremental process" (5,6,8); and Follower (4, 7).	National participant used the available information as the basis for the set up of workplans and strategies. RPG used the available information (i.e. rules) as the basis to propose the objection.	Provincial: Rules Payoff Political
Provincial Parliament	++	-			
Head of Provincial Forestry Service	+++	+++			
Officials of Provincial Forestry Service	+	+			
Academics	+	++			
NGOs	+	++			
Companies	++	+			
Community	+	+			

Note: +++: high ++: middle +: low -: none (Perceptual measurement)

At national level, the responsibility of KPH program is taken by the MoF through the Directorate of Area Management and Preparation of Forest Area Utilization (Dir WP3H). In carrying out their duties, Dir WP3H has already taken action to consolidate with other participants at the national level. All participants (except Ministry of Internal Affairs) are now actively supporting the KPH development programs.

Besides plays role as an expert, academics also play several strategic actions. By their actions, strategic institutions such as the Presidential Working Unit for

Supervision and Control of Development (UKP4) and the Corruption Eradication Commission (KPK) have included the development of KPH as part of their work agenda. Academics believed that the policy renewal process in forestry sector is less likely to be a incremental. Nevertheless, this change should be fundamental. Furthermore, innovations from external organizations are needed to push the policy renewal [29]. Academic participants stated that "knowledge" is the most important selection criteria in their decision-making process (see Table 5). This statement suggest that we must improve the

knowledge input to the policy and deepen our understanding about institutional change [30].

With limited number of personnel¹ Dir WP3H is still more focused on physical targets achievements² and build understanding in the internal of MoF. However, another important agenda, i.e. socialization and communication of KPHs to the local leaders, were rarely conducted. Whereas in fact, the establishment and operationalization of KPHs in local region are largely determined by the decisions of local leaders.

In Riau Province, the most important participants are the HRPFS, followed by the Governor. Meanwhile, provincial parliament has not showed its active role. As for other participants (academics, NGOs, community leaders), they have conducted various steps to bolster the operation of KPH, although those steps could not influence the decision of the HRPFS and the Governor to immediately put personnel in KPH-TBS organization.

The preferences of national government participants were centered into one strategy, which is to implement the existing regulations in parallel with performing incrementally improvement of the regulations. Meanwhile, participants in Riau Province were divided into three groups, which are those who want to fix problems related to authority assignment, organizations and cost-benefit (Governor, Provincial Parliament, HRPFS), group that supports the incremental process (academics, NGOs, community leaders), and group of followers (Provincial Forestry Service's staff and companies). Since the highest decision-making authority in Riau province is on the Governor, the preference of the first group was dominating. For that reason, RPG insisted not to immediately put personnel in KPH-TBS organization.

3.3. Patterns of Interaction and Outcomes

The approaches taken by the MoF to the local government were still more likely by the structural approach strategy (highly relied on regulatory instruments) and physical (infrastructure assistance, long-term planning support, and so on). In contrast, approaches to develop common understanding, knowledge dissemination and build mutual trust were rarely performed. In other word, if we used the Habermas' concept of communicative action, the approaches taken by the MoF were dominated by the instrumental rationality of strategic actions, which were often associated with the utilitarian concept of rationality, and lack of the communicative rationality aimed at reaching understanding [31].

On other hand, besides problems on conflict of interest (see note 7), RPG has not fully understand the benefits of KPH for forest management efficiency. They were stuck to the short-term difficulties encountered in the early stages of the formation of KPH organization. RPG viewed the existing KPH legislation was still should be revised, particularly regarding the regulation of authority, cost-benefit and organizational criteria. RPG said that the government has been unfair in regulating authority,³

objected to bear the operational costs of KPH and had difficulty in applying the directive of MIAR No. 61/2010 on the organization of KPH (see Table 3). Therefore, RPG tends to respond the KPH with low cooperation level. They accept KPH policy only as legislation obligation, and not motivated to move by themselves. Their activity is highly dependent on initiatives and assistance from the national government. Logically thinking, by these facts the operationalization of KPH-TBS tend to be slow. Therefore, according to Andersson and Ostrom [13], technical capacity and financial resources are important but secondary to contextual institutional incentives. The reason incentive structures are given so much weight is the realization that local politicians face significant governance dilemmas that often make their decisions to invest in natural resource governance quite costly.

4. Conclusions

The problems that obstruct the development of KPH-TBS have been emanating from the biophysical conditions, the attributes of the community, and the rules are used. This action situation combined with participant's characteristics create non-associative interaction pattern for the development KPH-TBS implementation. Riau Province response is still stuck to the short-term difficulties on authority, costs, human resources, and several unclear directions about organization that must be overcome. The national government tends to rely heavily on structural approach and physical assistance to work with provincial government. In contrast, strategic steps such as knowledge dissemination, communication and mutual trust development are rarely performed. The former approaches do not address the needs of RPG for information and understanding about the development of KPH. RPG responds this situation with slow and low willingness to cooperate. They take the policy of KPHs development as obligation only, and does not motivated to move by themselves. In addition, the reluctance to cooperate is also caused by conflict of interest.

Based on this research, the proposed suggestions are: (1) National government need to changes the way of thinking that regulationis not the only instrument to guide the behavior of local participants. Although still needs to be repaired, it must be accompanied by strategy to transform the forestry paradigm and bureaucratic culture. KPH concept –as a paradigm and new values in Indonesian forest management system– need to be institutionalized to all institutions in forestry sector, and; (2) National government needs to improve the socialization and communication about the development of KPH to local leaders. For the implementation of that duties, it is recommended that the Ministry of Forestry to take action to enhance the cooperation with Ministry of Internal Affairs, the Presidential Working Unit for Supervision and Control of Development (Unit Kerja Presiden Bidang Pengawasan dan Pengendalian Pembangunan, UKP4), the Corruption Eradication Commission (Komisi

¹Based on information by informer from Dir WP3H, only 7 personnels that active in maintaining the KPH from 14 total personnel in Dir WP3H.

²For example the decree of KPHs region, training for KPHs member, infrastucture support, etc.

³Related to this issue, the HRPFS said: "If we go back to the regulation of local autonomy, there are no service in headquarter. Autonomy means

no more services in headquarter. Sir. So, only little things that transferred, incomplete. That's half-hearted autonomy."

Pemberantasan Korupsi, KPK) and other institutional networks that have been formed.

References

- [1] [ICCON] Information and Communication Center on Nusa Tenggara. *Masyarakat Adat dan Pembangunan Kehutanan*, Information and Communication Center on Nusa Tenggara, 2006, [Online]. Available: [http://www.infonusra.org/html/Berita/Masyarakat Adat dan Pembangunan Kehutanan.htm](http://www.infonusra.org/html/Berita/Masyarakat%20Adat%20dan%20Pembangunan%20Kehutanan.htm). [Accessed Des.19, 2012]
- [2] Kartodihardjo, H., and Suwarno, E, *Pengarus-utamaan KPH ke dalam kebijakan dan pelaksanaan perizinan kehutanan*, GTZ Project Report on Forests and Climate Change Programme-FOFCLIME, 2014.
- [3] Kartodihardjo, H, *Kerangka Hubungan Kerja Antar Lembaga Sebelum dan Setelah Adanya KPH*, GTZ project report on strengthening the management capacities in the Ministry of Forestry (SMCF), 2008.
- [4] Ostrom, E, *Understanding Institutional Diversity*, Princeton University Press, Princeton, New Jersey, 2005.
- [5] Castañeda., F, "Why national and forest management unit level criteria and indicator for sustainable management of the dry forest in Asia?", in Cheng, T.L., and Durst, P.B, (Editors), *Development of national-level criteria and indicator for sustainable management of the dry forest in Asia: background paper*, Rap Publication, Bangkok, Thailand, 1-22. June 2000.
- [6] [Dir WP3H] Direktorat Wilayah Pengelolaan dan Penyiapan Areal Pemanfaatan Kawasan Hutan, Direktorat Jenderal Planologi Kehutanan, Kementerian Kehutanan, *Data dan Informasi Kesatuan Pengelolaan Hutan (KPH) Tahun 2012*, Direktorat Wilayah Pengelolaan dan Penyiapan Areal Pemanfaatan Kawasan Hutan, Direktorat Jenderal Planologi Kehutanan, Jakarta. Dec. 2012.
- [7] Polski, M.M., and Ostrom, E, *An institutional framework for policy analysis and design*, Paper on Workshop in Political Theory and Policy Analysis Departmen of Political Science, Indiana University, 1999. [Online]. <http://mason.gmu.edu/~mpolski/documents/PolskiOstromIAD.pdf> [Accessed July 15, 2010]
- [8] Ostrom, E., Gardner, R., and Walker, J, *Rules, Games, and Common-Pool Resources*, The University of Michigan Press, Ann Arbor, 2006.
- [9] Bungin, M.B, *Penelitian Kualitatif*, Kencana Prenada Media Group, Jakarta, 2010.
- [10] [KPHP TBS] Kesatuan Pengelolaan Hutan Produksi Model Tasik Besar Serkap, *Rencana pengelolaan hutan jangka panjang KPHP Model Tasik Besar Serkap*. KPHP Model Tasik Besar Serkap, Pekanbaru, 2013.
- [11] Tucker, C.M, Learning on governance in forest ecosystems: lessons from recent research. *International Journal of the Commons* 4 (2). 687-706. 2010.
- [12] Mehring et al., Local institutions: regulation and valuation of forest use—evidence from Central Sulawesi, Indonesia, *Land Use Policy* 28: 736-747. Oct. 2011.
- [13] Andersson, K.P. and Ostrom, E, Analyzing decentralized resource regimes from a polycentric perspective, *Policy Science* 41. 71-93. March 2008.
- [14] Kolstad, I., and Søreide, T, Corruption in natural resource management: implications for policy makers, *Resources Policy* 34: 214-226. Dec. 2009.
- [15] Amacher, G.S., Ollikainen, M. and Koskela, E, Corruption and forest concessions, *Journal of Environmental Economics and Management*, 63 (1). 92-104. Jan. 2012.
- [16] Wenger, E., McDermott, R., and Snyder, W.M, *Cultivating Communities of Practice*. Harvard Business School Press, Boston, 2002.
- [17] Kimmerle et al. Knowledge construction in an outsider community: extending the communities of practice concept, *Computers in Human Behavior* 29. 1078-1090. May 2013.
- [18] Schlüter, A, Institutional change in the forestry sector—the explanatory potential of new institutional economics, *Forest Policy and Economics* 9. 1090-1099. May. 2007.
- [19] Hidayat, H, *Politik Lingkungan: Pengelolaan Hutan Orde Baru dan Orde Reformasi*, Yayasan Obor Indonesia, Jakarta, 2008.
- [20] Simon, H, *Aspek Sosio-Teknis Pengelolaan Hutan Jati di Jawa*, Pustaka Pelajar, Yogyakarta, 2004.
- [21] Cheung, A.B.L, The politics of administrative reforms in Asia: paradigms and legacies, paths and diversities, *Governance: An International Journal of Policy, Administration, and Institutions* 18 (2). 257-282. March 2005.
- [22] Yılmaz, D., and Kılıçoğlu, G, Resistance to change and ways of reducing resistance in educational organizations. *European Journal of Research on Education* 1 (1). 14-21. 2013.
- [23] Jaatinen, M., and Lavikka, R, Common understanding as a basis for coordination, *Corporate Communications: An International Journal* 13 (2). 147-167. 2008.
- [24] Lee, B.P.H., Mutual knowledge, background knowledge and shared beliefs: their roles in establishing common ground, *Journal of Pragmatics* 33: 21-44. Jan. 2001.
- [25] Blanco, M., Engelmann, D. and Normann H.T, A within-subject analysis of other-regarding preferences, *Games and Economic Behavior* 72. 321-338. Jun. 2011.
- [26] Kitsing, M., and Schweik, C.M, Applying Elinor Ostrom's rule classification framework to the analysis of open source software commons, *Transnational Corporations Review* 2 (1). 13-26. March 2010.
- [27] [DGFP] Directorate General of Forestry Planing, Ministry of Forestry, *Data KPH Update Sampai September 2013*, Directorate General of Forestry Planing, Ministry of Forestry, [Online]. Available:http://www.kph.dephut.go.id/index.php?option=com_content&view=article&id=275:perkembangan-kph-sd-september-2013&catid=1:berita-kph. [Accessed Feb. 22, 2013]
- [28] Ostrom, E, Background on the institutional analysis and development framework, *The Policy Studies Journal* 39 (1). 7-27. Feb. 2011.
- [29] Kartodihardjo, H., Nugroho, B., Suharjo, D., and Dermawan, A., Development of small holder plantation forest: an analysis from policy process perspective, *Jurnal Manajemen Hutan* 19 (2). 111-118. Aug. 2013.
- [30] Yang, L., and Wu J, Knowledge-driven institutional change: an empirical study on combating desertification in northern China from 1949 to 2004, *Journal of Environmental Management* 110. 254-266. Nov. 2012.
- [31] Gezelius, S.S., and Refsgaard K, Barriers to rational decision-making in environmental planning, *Land Use Policy* 24. 338-348. April 2007.