



## RESEARCH PAPER

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## Performance on the development of West Berau production forest management unit (FMU) in East Kalimantan Province

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### Abstract

The position and role of Production Forest Management Unit (PFMU) of West Berau in supporting the forest resources in Berau Regency becomes very important and strategic. However, the complexity and dynamics of management cannot be avoided by the management of West Berau PFMU. The ongoing high conflict and asymmetric information in building an adequate system of area management become one of the things that must be sought solution. The purpose of this study is to assess the performance of West Berau PFMU in carrying out forest management at site level using criteria and indicators from Forest Watch Indonesia version 1.0. The results show that the average overall criteria being assessed are an insufficient range, which means that the West Berau PFMU is sufficiently prepared to perform its function as a forest management unit at the site level.

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## Introduction

Degradation and deforestation today continue to occur in Indonesia and cannot be separated from the bad governance on forest resources (GFI, 2013; Situmorang *et al*, 2013). Until now, Indonesia has not been able to fully break away from the paradigm of colonialism that views the forests as an economic resource, where wood is the major commodity. This viewpoint is implemented through regulatory structures and direct practices of forest use (timber extraction), as well as, through cultivation (timber management), by giving privileges to the owners of big capital (corporate) and structurally marginalizing the position and the rights of the indigenous/local people (FWI 2014). According to the data from Forest Watch Indonesia, the rate of deforestation during the period of 2009-2013 reach an average of 1.13 million ha per year, whereas the remaining forest cover in 2013 only covering an area of 82 million ha (FWI, 2014). On the other hand, Wiyono *et al*, (2006) states that approximately 48.8 million people in Indonesia live in and around forests, and about 10.2 million of which belong to the poor classification, where in general, the people's livelihood are coming from utilizing forest products, both timber and non-timber, including rattan, resin, aloes, and honey bees.

The transformation process of resources authorization, managed by the local community into a state-owned resources, in many countries, has led to: (1) the removal of local wisdom institution; (2) weak monitoring capacity and state institutional control, especially on large scale resources and complex, which is claimed and controlled by the state, and (3) use of available resources trapped in conditions of de facto open access and the tendency of the parties competing for maximum utilization of resources for individual benefit (Rustiadi, 2005).

These have implications on high conflicts and weak management capacity at the site level. Association for Law Reform of Community and Ecology Based (HuMa) in 2012 noted that there have been 278 conflicts over natural resources and agrarian, which took place in 98 cities/regencies in 23 provinces with an area of conflict reached 2,416,035 hectares.

The inception of the concept of forest management unit (FMU) as institution that manages the forest at the site level, is expected to be a prerequisite for the implementation of sustainable and equitable forest management. Conceptually, FMU development policy is the shifting process of institution to bring about fundamental changes in the way of thinking, culture and value system of forest management in Indonesia.

FMU will shift the role of forestry bureaucrat from "forest administrators" into "forest managers" and also improve transparency and accountability in forest governance (Kartodihardjo, Suwarno 2014).

In 2014, 120 FMUs are formed, ready to operate and gradually, the number of FMUs will continue to be formed up to 600 FMUs in 2019 across Indonesia. These include the Production Forest Management Unit (PFMU) Model of West Berau which covers an area of 768,021ha. The area of PFMU Model of West Berau is based on the Zoning of PFMU of West Berau as FMU Model by the Ministry of Forestry, through the Decision Letter of Ministry of Forestry No. SK.649/Menhut-II/2010, on the 22<sup>nd</sup> November 2010 regarding Zoning of Production Forest Management Unit (PFMU) Model of West Berau in Berau Regency, East Kalimantan with an area of 775,539ha.

This was then adjusted by the Decision Letter of the Minister of Forestry No: SK.674/ Menhut-II/ 2011 Concerning Zoning of Protected Forest Management Unit (PrFMU) and Production Forest Management Unit (PFMU) in East Kalimantan Province, thus alter the area of West Berau PFMU to 768,021ha.

The presence of forest management institution on site level in Berau Regency, has become a pioneer in pushing the process on the governance of production forest in the region of East Kalimantan Province, thus promoting distinctive characteristics and dynamics in accordance with the condition of the area.

This study aims to provide an overview on the performance of forest management run by PFMU of West Berau using parameters set out in the criteria and indicators of FWI 1.0.

**Materials and methods**

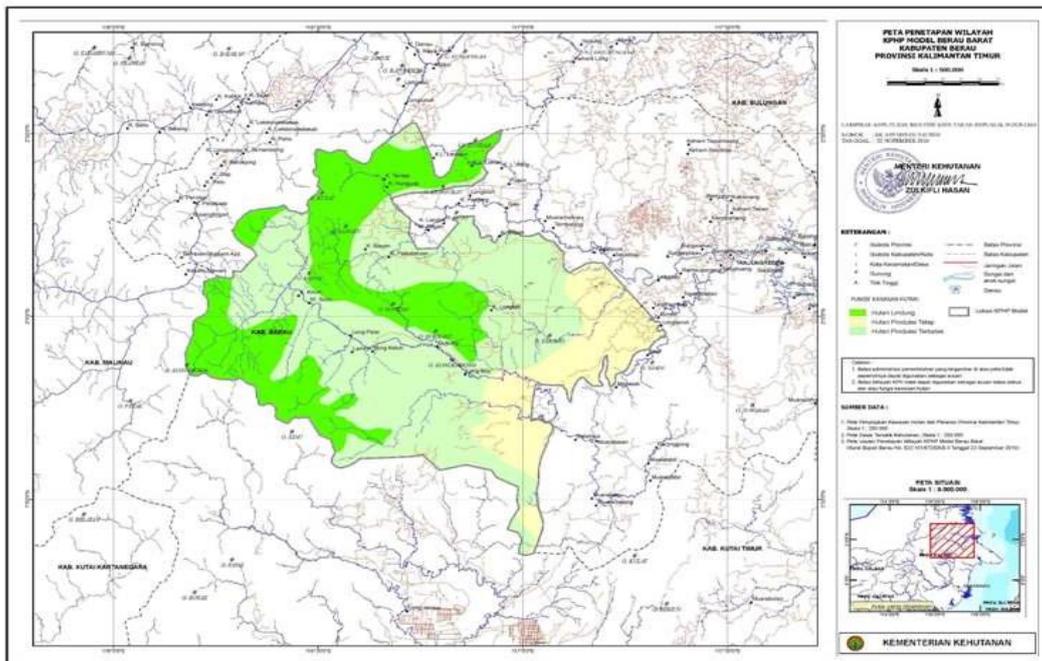
*Research Location*

This study was conducted in the area of production forest management unit (PMFU) of West Berau at region berau east kalimantan province.

The implementation of this research was conducted for three months starting from August to October 2015.

*Research Method*

The framework of this research using a descriptive approach, Descriptive method is used to gather information in the present, analyze and interpret facts or information found (Narbuko, 2003). This research using several data collection instruments, such as document analysis, focus group discussions, observation, and in-depth interviews.



**Fig. 1.** Map of PFMU of West Berau.

*Analysis*

Data gathered during the study are then analysed using the Forest Watch Indonesia criteria and indicators version 1.0 Forest Watch Indonesia (FWI, 2014). The results are presented in the form of an index, by totaling the entire value of the data, then divide it by the total units of data. Index of PFMU Development Performance Assessment can be categorized into three classes, namely high, medium and low (Table 1). The following are an explanation of the categorization.

Data processing stages consist of data tabulation and analysis of data based on the findings in the field. Criteria and indicators components of this assessment are based on the framework matrix of criteria and indicators that have been developed previously by a team of experts in cooperation with the Forest Watch Indonesia.

The assessment matrix consists of 8 criteria, 22 indicators and 49 elements of quality.

**Table 1.** Categorization of KPH Development Performance Assessment Index.

Index Values	Category	Commentary
2.34 to 3.00	High	An ideal average value obtained from each element of quality, indicators and criteria.
1.67 to 2.33	Medium	A medium average value obtained from each element of quality, indicators and criteria.
1.00 to 1.66	Low	A low average value obtained from each element of quality, indicators and criteria.

Index scores above are then processed from the value element of quality from highest to lowest value, considering that each elements of quality and indicators are equivalent.

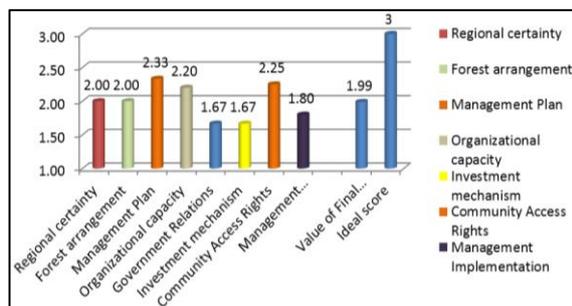
**Table 2.** Categorization of Weighted of FMU Development Performance Assessment.

Commentary	Score
When the field data meets all the elements contained in the element of quality	3
When the data field only fulfill some elements contained in the element of quality.	2
When the data field does not meet <i>all</i> the elements contained in the element quality.	1

Note: Scores assessment is a selection of decisions based on the findings that have been analyzed and verified.

## Results and discussion

Based on the assessment conducted using FMU development performance assessment guide FWI 1.0 (Fig. 2), out of the eight criteria assessed, the overall average is in the range of good criteria, meaning that West Berau PFMU is quite ready to accomplish its function as forest management units at the site level. Some of the criteria that require attention, based on the results of this assessment, focused on criteria of regional stability, government relations, investment mechanism and management implementation which must be strengthened to ensure the operationalization of the FMU at the site level.



**Fig. 2.** Matrix of Result of West Berau FMU Development Performance Assessment.

From each of these criteria (Fig. 2), some strategic aspects which should be taken into serious consideration by managers to optimize the management include the following:

### *Stability of Region*

Certainty of region, in the form of the establishment of delineation, has not been fully carried out on all the FMU areas. Based on assessment, the result show that the current PFMU has not carry out delineation for areas that are currently not under any license and those areas categorized as Specific Regions, however, areas that already have a license, delineation of boundary have been completed by the permit holder. Out of all FMU areas, only 12 license holders of UPHHK

(Timber Forest Product Business Management) HA/HT (Natural Forest/Plantation Forest) have delineated their areas with a total area of 494,334.64 hectares, whereas those that have not been delineated are consist of total area of 288,829.03 hectares, which include areas categorized as Specific Region and the Protected Forest. Despite that, the BATB (Official Report of Delineation) Document of each holder of the permit still being approved by the authority.

Analysis on RPHJP (Long Term Forest Management Planning) Document show that the function of forest area in the region of PFMU Model of Berau West, in general, are still at the stage of Area Assignment (based on the Letter of Minister of Forestry No. 79 / KPTS-II /2001, March 15, 2001, on the Appointment of Forest and Water Areas of East Kalimantan Province), no delineation and affirmation, both on the function borders (inner borders) and FMU borders (outer borders). Some uncertainty in the field still exist regarding the status and functions of the forest areas. As a result, overlap of region between the function area and the management permit for the use and utilization of area still occur, for instance, the existence of settlements, plantations and agriculture, in the production forest and IUPHHKHA (Permit for Timber Forest Product Business Management in Natural Forest) areas, as well as the overlap between Utilization Permit (IUPHHK) and Mining Permit.

According to the delineation report received by the FMU, delineation process performed by the permit holder, recruits local community only on field measurements activities. The local community has not been included as part of the implementation of the delineation process as a whole. Furthermore, the delineation results have not been socialized properly to the community who lives around the delineated areas. At present, PFMU of West Berau, have not possess the Standard Operational Procedure (SOP) for forestry

dispute resolution. Conflicts that have been occurring are resolved by the permit holders in their work area. Meanwhile, identified potential areas of conflict in West Berau PFMU are located in the Specific Regions, particularly in the eastern boundaries area. On the other hand, there are several locations already have permits that are categorized as conflict-prone regions, such as Inhutani I Labanan, areas that have been opened by the community reached around 20 thousand ha since 2013, and others. Administratively, the area of West Berau PFMU Model is part of 4 districts, namely sub-district Kelay, Segah, Sembaliung and Teluk Bayur and also 10 villages are in the territory of FMU, where these areas are considered as high risk conflict areas. Thus, PFMU of West Berau needs to prepare dispute handling SOP on forestry and human resources issues with capacity and adequate budgetary support. Currently, only Head of FMU office has that capacity, whilst, out of all the staff present in FMU structure, no staff has the skills in resolving conflicts in the forestry sector.

Obstacles encountered by the PFMU of West Berau in implementing the arrangement of its outer boundary is due to the high cost for roads accessibilities and the transportation that are relatively difficult and distant. Meanwhile, BPKH IV (Forest Area Planning Centre) Samarinda has yet to make plans on conducting boundary due to limited allocation of state budget funds through the Ministry of Environment and Forestry. This adversely affects the performance of PFMU of West Berau to decline in utilizing the potential of Specific Region and Protection Forest in their area. Additionally, these areas will be particularly vulnerable to the threat of land occupation, encroachment and illegal logging.

#### *Management of Forests*

Until currently, the inventory process in PFMU of West Berau areas, has been carried out through partnerships with several parties such as TNC, WG Tenure, and CIFOR etc. However, the inventory results are still limited and have not describe the overall potential of the region. Administratively, these documents are used by PFMU of West Berau as basis information of potency available in the FMU areas,

hence until the time of the assessment, PFMU of West Berau has yet hold the official documents coining the whole results of the inventory of the forest potency contained in its region.

Availability of data and information on the Specific Region in Production Forest Area with a total area of 35,724.20 hectares and Protected Forest Area which covers a total area of 250,672.22 hectares are still limited because inventory process in the region has not been carried out. Whereas, in areas that have a permit, inventory has been carried out by each permit holder. The issue is that data related NTFPs and Environmental Services are still very limited because it has not been well recorded, thus further inventory is required. Boundary management activity in PFMU of West Berau are performed only at certain spots (some already bounded prior to the formation of the PFMU), especially in areas that already have permits such as in areas of Private Company. The whole delineation activity on FMU areas are planned to be carried out in 2015 as set out in the DPA of PFMU of West Berau year 2015.

Areas already delineated, take into account the participation of the community in the implementation phase. This is depicted in the document, where the district and village representatives have signed the official document of the delineation of the focus area. The results of this assessment show that execution of the delineation activity is still lack of socialization, this has been admitted by both the head of PFMU and the community, and as a result both PFMU and the community do not recognize which areas already delineated. This is therefore, it is crucial to have good administration on boundary delineation and participatory to minimize land use conflicts.

#### *Work Plan*

The results of this assessment indicate that the work plan, as a condition of operation of the FMU, still to be equipped. One of which is the unavailability of the business plan document as basis for existing FMU business activities in the region of PFMU of West Berau.

On the other hand, documents that have been prepared (RPHJP: Long Term Forest Management Planning) should be immediately disseminated to relevant stakeholders, to address the results found in field, where dissemination of management plan document are still lack of socialization and limited to certain parties only such as partner agencies/donors, local governments and NGOs, and as for the public, no socialization activity have been done. These are intended to simplify the process of synchronizing and coordinating the management of forests resources in the FMU areas with other parties.

Although the business plan document of FMU has been planned to be prepared in 2015, it is still unavailable until now. However, the PFMU of West Berau has initiated to develop a business plan on forest honey, briquettes, and the development of local tea products results of the community forest farming, where the marketing management is developed by the FMU.

#### *Organizational capacity*

The results of this assessment show that in the initial process of writing RPHJP: Long Term Forest Management Planning, PFMU of West Berau has disseminated it to the public to acquire feedback prior to legitimation by the relevant agencies. However, until now, the PFMU of West Berau has not possess the SOPs related to decision-making mechanism supported by accurate basic information. For PFMU of West Berau region, lack of human resources availability is a serious issue faced by the FMU. One of which is the availability of personnel in the institute structure, until currently there are still vacant position on several division. The situation of personnel in PFMU Model of West Berau, currently only consist of 18 people (including the head of PFMU) which comprise of 6 civil servants and 12 temporary/contract employees. Meanwhile, to ensure optimally operationalization of PFMU of West Berau requires 83 people. That means the current situation only comprise of 21% of overall personnel required. The most obvious thing that requires great concern is that, PFMU of West Berau currently only have 1 forest ranger, responsible for the supervision of 786.000 ha of FMU areas.

This is far from ideal conditions where the ideal condition should be 1:10 ha. Meanwhile for the head resort, of 2 resorts planned, no suitable personnel with suitable capacity are available. However, the head of PFMU of West Berau has been considered to have sufficient competency and capacity in the management of the FMU areas. This is true due to the fact that the head of PFMU has a certificate of competency standards issued by relevant authority.

PFMU management information system is already available in the form of a website, however not all of the important information related to PFMU of West Berau are well informed. Assurance of people's access to accurate information related to governance of the FMU has not been stated in the SOP. Access of information are still limited through village/sub-village meetings done by the FMU. The Institutional of PFMU of West Berau is still the form of UPTD (Regional Technical Implementing Unit)/Division under the coordination of the Department of Forestry, thus it does not depict the site level forest management organization as mandated by Ministry Regulation No. 61 of 2010. This also has implications on the limited facilities and infrastructures needed to support the operations of the FMU at the site.

#### *Governmental Relations*

Synchronization process of RPHJP (Long Term Forest Management Planning) of West Berau PFMU with RPJMD (Medium Term Regional Development Planning) and RTRW (Spatial Planning) has yet to be done. This is due to the current validity period of RPJMD (Medium Term Regional Development Planning) of Berau is nearly over and to be revise in 2016, whilst RPJHP (Long Term Forest Management Planning) of West Berau PFMU had just been prepared in October 2014, so it had to wait for the revision of RPJMD to get synchronized. However, the communication process developed over time, between the FMU with other relevant agencies such as BAPPEDA (Regional Development Planning Agency), is going rather well, this can be seen from the attendance intensity of the institutions/agencies involved in the activities undertaken by the FMU.

On the other hand, both Provincial Spatial Planning and Berau Regional Spatial Planning that are not yet been determined become one of the obstacles on the process of synchronization between FMU planning with regional planning. Synchronization acceleration of regional development planning and encourage the ratification of both Provincial and Regional Spatial Planning (RTRW) is a homework to be thought about by FMU and other forestry activists. Thus, it is expected the synergy between program and management can run appropriately.

APBN (National Income and Expenditure Budget) is a strategic source of fund in the development of FMU including PFMU Model of West Berau. Funds are given through the Technical Implementation Unit (UPT) of the Directorate General of Forestry Planning in 2013, where APBN (National Income and Expenditure Budget) funding has been provided for the facilities and infrastructure of West Berau PFMU which comprise of: Facilitation for the compilation of Long Term Management Plan, Establishment of office Buildings, 2 wheel and 4 wheel Vehicles and forestry equipment. While the Special Allocation Fund (DAK)-Forestry funds sourcing from APBN (National Income and Expenditure Budget) are implemented by PFMU through APBD (Regional Income and Expenditure Budget) in 2014 with a total of Rp 1,800,000,000.

PFMU of West Berau received state funds (APBN (National Income and Expenditure Budget)) with a total of Rp 2,067,287,200 in 2012 and Rp 347,717,000 in 2013. While funding from regional funds (APBD (Regional Income and Expenditure Budget)) managed by PFMU of West Berau amounted to Rp 250,000,000 in 2012 and amounted to Rp 300,000,000 in 2013. In 2014, Berau district government acquired DBH-DR (Revenue Sharing Funds for Reforestation Funds) amounted to Rp 1,800,000,000 through regional funds (APBD (Regional Income and Expenditure Budget)) and was implemented by PFMU Model of West Berau. While, sources of funding for other activities comes from donor institutions and NGOs (both local and national). Up till now, operationalization of PFMU or West Berau is regulated through Head District Regulation No. 53 of 2011, where

PFMU of West Berau as UPTD (Regional Technical Implementation Unit) under the coordination and report directly to the Forestry Department of Berau. To support self-reliance of PFMU in terms of development, management, and operations; and in accordance with the mandate of Ministry Regulation No. 61 of 2010, amendment of PFMU of West Berau from Regency SKPD (Regional Work Unit) to Provincial SKPD (Regional Work Unit), referring to Government Regulation No. 23 of 2014 on Regional Governments, should be done.

#### *Investment Mechanism*

Organizational structure of West Berau PFMU was established to assist Head of PFMU on investment services stipulated in Head of PFMU Decree No. 870/DKB.KPH/2014. The decree mandates the presence of function coordinator of utilization, usage, development of investment and business, with one of the main tasks is to produce a PFMU Business Plan document. However, the results of study shows that the organizational structure prepared is not running accordingly due to various limitations, one of which is the availability of personnel.

In general, areas managed by PFMU Model of West Berau has high potential of natural resources, large enough for development of investment and business of PFMU. Based on forest planning and identification of forest resources potency in PFMU Model of West Berau, some potential that could be develop for investment and business of West Berau PFMU Model including Specific Region in Production Forest area with a total area of 35,724.20ha and Protected Forest area with a total area of 250,672.22ha which can be develop for producing timber products, NTFPs and environmental services (water, carbon and natural tourism). In addition to Specific Region in the area of the West Berau PFMU, there are 12 units of existing IUPHHK-HA (Permit for Timber Forest Product Business Management in Natural Forest) and 2 units of existing IUPHHK-HT (Permit for Timber Forest Product Business Management in Plantation Forest).

That are potential as a partner on investment/business development. Thus, the existence and the conservation effort of forest resources in the PFMU area has an

important meaning and role, particularly in contributing to regional development; and the national forestry development in general.

Although the investment mechanism is not yet developed in the form of documents, PFMU of West Berau has established various types of businesses such as development of forest honey, briquettes, and tea. However, these businesses have not yet supported by the profit-sharing mechanism, financing, and an adequate risk analysis. While, to ensure the safety of doing business and investing for the use of forest resources both public and private/foreign investors, clear and measurable mechanisms is required.

#### *Rights of Public Access*

Assurance on rights of public access in forest resource management is included inside the FMU management planning document. The assurance is designed in the form of establishing community partnerships system, and CBFM (Community Based Forest Management), especially in Specific Regions. However, until now, the process and the assurance cannot be implemented optimally due to constraints such as completeness of the organizational structure, human resources and sources of fund.

It is expected that the assurance on rights of public access, set forth in the RPHJP (Long Term Forest Management Planning) document of West Berau PFMU could be implemented and encouraged its acceleration, thus management of PFMU areas could run soundly.

Future plan of PFMU of West Berau is that it will facilitate social forestry in Specific Region. There are approximately 13,810.70 hectares of area which will be facilitated in the form of HD (Village Forest), HTR (Community Plantation Forest), HR (People's Forest), and HKm (Community Forest). Also, in Protected Forest area, PFMU is facilitating partnerships with the community for the management of NTFPs and environmental services in an area of 80,331.39 hectares. The effort of FMU is shown through the facilitation of marketing of forest honey, briquettes, and local tea products from the community.

In order to enhance the role of communities in forest management in PFMU Model of West Berau areas,

community institutions between villages have been established i.e.: Hulu Kelay Village Forum (FKHK) consisting of: Long Beliu Village, Long Duhung Village, Long Keluh Village, Long Pelai Village, Long Lamcim Village and Long Sului Village; and Hulu Sungai Segah Management Agency (BP Segah) consisting of: Long Ayap, Long Oking, Long Laai and Long Pay. These institutions are fostered by PFMU Model of West Berau as base for increasing the capacity for community empowerment. It is expected that with the presence of PFMU Model of West Berau, this could enable to transform the forestry development policies (primarily local-level policy) to enhance the welfare of society in a sustainable manner based on Forest Resource and Land, through partnership schemes and social forestry. However, in RPHJP (Long Term Forest Management Planning), no clear statement explaining the assurance on the rights of indigenous peoples in the region of PFMU of West Berau. Identification of vulnerable conflict areas in PFMU of West Berau are located in Specific Regions, particularly in the eastern boundaries area. On the other hand, there are several locations already have permit that are categorized as conflict-prone region, such as Inhutani I Labanan, areas that have been opened by the community reached around 20 thousand ha since 2013, and others. Administratively, the area of West Berau PFMU Model is part of 4 districts, namely sub-district Kelay, Segah, Sembaliung and Teluk Bayur and also 10 villages are in the territory of FMU, where these areas are considered as high risk conflicts areas.

#### *Implementation Management*

Concerning the use (management) of existing natural resources, Regional Government of Berau District have programs that clearly acknowledge and preservation efforts of its existence. The programs include: a). Protection and Conservation of Natural Resources Program, b). Rehabilitation and Recovery of Natural Resources Reserves Program, c). Capacity Building of Management of Natural Resources and Environment Program and d). Sustainable Natural Resource Management Program.

Based on the priority level of RHL (Forest and Land Rehabilitation), priority watershed area is about

103,094.69 ha or 0.61%, while based on the watershed erosion rates, the Watershed of Berau is rated as low with a value of Erosion Index (IE) of 0.66. This condition indicates that the condition of Berau Watershed is relatively sound. The level of critical land in PFMU of West Berau is relatively low, most of them are categorized as potentially critical and rather critical (BPDAS Mahakam Berau (2009)).

Based on the above mentioned conditions, the performance of DAS Berau (Berau Watershed) is still relatively good, therefore, RHL (Forest and Land Rehabilitation) activities are yet to be priority. Berau district is considered as one of region that generate high income on Reforestation Fund and PSDH (Provision of Forest Resources). Until 2011, the number of DBH (Profit Sharing Fund) of Forestry in Berau district government accounts reached about Rp 240,000,000,000. The local government experience difficulties in term of accessing these funds due to inaccurate data and information on location, hence planning of RHL (Forest and Land Rehabilitation) cannot be done, furthermore the these location are limited by the existence of concession permit on use and utilization of area.

The assessment results also show that there is a community development results conducted by the FMU in the form of establishment of business of forest honey, briquettes, and tea products. On the other hand, PFMU has designed a strategy to assist the marketing of community product in the form of facilitation in obtaining PIRT (Home Industry Products) permit and packaging. Nonetheless, not all communities processed products are able to be facilitated by the FMU due to limitations both on human resources and budgeting.

The monitoring process in the permit area within PFMU of West Berau is already well underway based on the SOP prepared, however not optimal. This is as acknowledged by the Head of PFMU, where low supervision and coaching conducted on the permit holder resulted in low performance of execution and implementation of sustainable forest management that is not supported by the commitment and capacity of

human resources and facilities available. Reports on the monitoring and control of the license holder cannot be easily accessed by the public. To obtain the report, they must come to the office of PFMU of West Berau.

The assessment results, in general, show that the orientation of the establishment of PFMU as the site level management institution is still directed at the context of meeting the needs of administration only, on the other hand, in terms of performance of field implementation is less than optimal. Scott 2008, states that the institutions are not just define as an institution/organization or hardware, but also define as software which includes: rules, norms, cultural-cognitive, working mechanism, as well as the magnitude and distribution of power and authority that is functioning. Thus, the management model of FMU that is being run should be able to balance the field technical needs and administrative needs, so that FMU could function as a solid and robust institution in the field. Adiwibowo *et al.* (2013) revealed that the critical issue in designing an institution, including institution of FMU, is the issue of institutional sustainability itself. Institutional arrangements often do not become a rule that is run by the parties in interacting. Peters (2000) describes that there are four approaches can be used in understanding the institution, as well as on the operationalization of the FMU. The four approaches are: a normative approach, rational choice approach, historical approach, and empirical approach. Role/function of these approaches is to manage interdependence/ interconnectedness between people against something, condition or situation through innovation of property rights, jurisdiction boundary, and rules of representation. With the arrangement of interdepends, each actor's behavior can be predicted and the operationalization of the institution can be better controlled (Kasper & Streit 1998).

### Conclusion

Based on the assessment of the 8 criteria on development performance of FMU in the region PFMU of West Berau, it can be said that this FMU has a complete administration and infrastructure to support its function as a forest management unit at the site level. Nevertheless, some criteria need to be

strengthened to ensure the operationalization of the FMU at the site level, including the stability of the region, management plans, and investment mechanisms. The lack of qualified and adequate human resources become a key issue in encouraging the operationalization of this FMU, thus this limitation inhibits the implementation of programs that have been planned in RPHJP (Long Term Forest Management Planning) of West Berau PFMU.

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